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Organizational practices to incorporate Web Accessibility in the software development process

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ABSTRACT

Web accessibility has become increasingly important to ensure all people can benefit from the information and services available on the web. Despite the multiple international web accessibility standards, studies have revealed a low compliance rate by organizations globally. This study emphasizes that the successful incorporation of Web accessibility in an organization requires a holistic vision that includes not only the technical aspect but also the requirements in terms of organizational support. Therefore, the research explores practices by companies who incorporate Web accessibility and provides a generic model to assist organizations with long-term incorporation. The results from this study inform a conceptual model that integrates practices from two contexts - the organizational context and the software development process context.

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Glossary

Practices	socially defined ways of doing things in an organization (Ashurst et al. 2008).
Socially defined	Socially defined' implies that a practice is inherently people-oriented, with an understanding of knowledge, skills informing the behaviour (Ashurst et al. 2008).
Disability	Disability is a permanent or temporary condition that almost everyone faces at least once during their lifetime; disabilities can result from the interaction of people with a particular health condition with other people and the environmental factors (W.H.O., n.d)
Web Accessibility	Web accessibility means that websites, tools, and technologies are designed and developed so that all people, including those with disabilities can use them. More specifically, people can: perceive, understand, navigate, and interact with the Web contribute to the Web (W3C)
Evaluation tools	"Software programs or online services that help determine if a web page meets accessibility guidelines or standards" (Henry, 2007).
Users	People using the web (Henry, 2007)
Conformance	satisfying all the requirements of a given standard, guideline, or specification (W3C, 2018)

Acronyms

W3C	World Wide Web Consortium
WAI	Web Accessibility Initiative
WCAG	Web Content Accessibility Guidelines
SDP	Software Development Process

1. Introduction

1.1.   Background

Because the internet is incorporated into our daily lives, there needs to be web accessibility implementation. To understand web accessibility, we must first understand disability. Disability is a permanent or temporary condition that almost everyone faces at least once during their lifetime; disabilities can result from the interaction of people with a particular health condition with other people and the environmental factors. In this sense, disability is a consequence of environments that are not accessible (WHO, n.d.). The World Health Organization (n.d.) estimates that around 15% of the total population of the world face disability. People with disabilities need to be able to access services like car registration, traffic fines and invoices, renewing a health insurance card, search for state sponsored employment opportunities (Ackermann, Vlachogiannis & Velasco, 2015; Mourad & Kamoun, 2013).

With the exponential growth of the services provided through the web, a new environment emerged that must be envisioned when it comes to ensuring there are no accessibility barriers. With over 4.5 billion internet users in the world (Johnson, 2022), the web has become a ubiquitous part of daily people's social, economic and political life (Vollenwyder, Iten, Brühlmann, Opwis & Mekler, 2019). Considering this, the international Convention of the rights of persons with disability (CRPD) from United Nations, adopting an inclusive approach also for the digital environment, explicitly requested state parties to take necessary measures to ensure accessibility for disabled people: "To promote access for persons with disabilities to new information and communications technologies and systems, including the Internet" (Seatzu, 2017, p. 226)

Web accessibility according to the W3C (n.d.) which is an international community that develops standards for the Web, implies that people experiencing permanent or temporary disability can "perceive, understand, navigate, interact and contribute to the web." For this aim, the W3C Web Accessibility Initiative (WAI) develops standards and provides resources that guide the web and mobile developer community to make their websites and applications accessible (WAI, n.d.). WAI developed the Web Content Accessibility Guidelines (WCAG), that is the internationally recognized guideline for web content developers to ensure their website content is accessible to people with disabilities (Ackermann, Vlachogiannis & Velasco, 2015; De Andrés, Lorca, Martínez, 2010). Permanent disabilities included in the WCAG guidelines are auditory, cognitive, neurological, physical, speech and visual. However, these guidelines also benefit people with temporary disabilities that can range from: people changing abilities due to age, a kid with a broken arm, and to a person in a silent library trying to watch a video.

1.2.   Problem discussion

Although there are global guidelines to make websites accessible for disabled people available for the past twenty years and local and international organizations promote the adoption and

implementation of accessible technologies, studies show that the rate of adoption of those guidelines is low. Researchers have explored this situation in many countries around the world with very similar findings. For instance, some of these studies were conducted by the European commission and evidence that the European websites are not accessible and are excluding disable people from critical opportunities such as education, employment, and other government services (Ackermann, Vlachogiannis & Velasco, 2015). In the same way, there are many recent studies showing accessibility issues in different official websites from other countries in the world, including Asia and Latin-America regions (Adepoju, Shehu & Bake, 2016; Akgül & Vatansever; 2016, Mourad & Kamoun, 2013; Abdul-Latif & Masrek, 2010; Acosta-Vargas, Acosta, & Lujan-mora, 2018a). Recently, Inal and Ismailova (2020) carried out a study of 146 countries with different human development indexes (HDI) and found that the number of the countries capitals official websites that comply all the conformance levels of WCAG guidelines was significatively low, corresponding only to 14.38%.

To delve into the issue, the next logical question is to address why the rate of adoption remains low, even though many countries have aligned with the CRPD to ensure accessibility for disabled people, the international WCAG guidelines have been available for years, the rights of people with disabilities have been included in legislation, and many implementation and evaluation tools exist to facilitate the development of accessible websites. To obtain a clear view from the stakeholder's perspective regarding the factors that influence the incorporation of the web accessibility standards in organizations, several studies were consulted, and the following factors such as sponsorship, perception of complexity, knowledge, and responsibility assignment were predominant. We need to understand the factors of incorporation to have context for investigating the practices.

Sponsorship: Clients, managers, and sponsors define the priority of adopting and implementing accessibility guidelines in the development process (Velleman et al. 2017; Lazar, Dudley-Sponaugle, & Greenidge, 2004). This means that there is a high dependency on sponsorship to adopt accessibility initiatives. In this sense, surveys conducted with web developers and web masters pointed out that around 50% of participants do not consider accessibility in their projects because it is not a requirement from the organization or the customer (Antonelli et al. 2018; Freire et al. 2008). The involvement of key people who initiate the initiatives and are committed to get results is crucial for succeeding (Leitner, Strauss & Stummer, 2016). However, the lack of interest and awareness of managers and administrators of organizations makes it difficult to incorporate accessibility practices. (Hong et al, 2015; Lazar, Dudley-Sponaugle, & Greenidge, 2004)

Perception of complexity: This factor reflects the level of difficulty that a stakeholder has about the adoption and implementation of accessibility standards (Velleman et al. 2017). Velleman et al. (2017) found that stakeholders that have a high level of compliance are positive about guidelines and legislation. However, the ones that have a bad score in the compliance assessment believe that accessibility legislation is complex and unnecessary. However, as they mentioned in their study, it is not clear if this perception is based on previous experiences. This is relevant because it implies that barriers can exist even without knowledge. From the developer perspectives, studies suggest that they are willing to implement the guidelines if they perceive

them as easy to accomplish. For instance, Crabb et al. (2019) suggest that future work in this area should facilitate the popularization of accessible products by removing barriers to entry: "Developers require easy methods in order to increase overall technology accessibility" (Crabb et al. 2019).

Knowledge: Lack of awareness and knowledge of stakeholders regarding requirements of accessibility and what needs to be done to comply with the standards is a main challenge that leads to many difficulties to incorporate accessibility in the development process (Inal et al. 2020; Gaggi & Pederiva, 2021). Nevertheless, getting a good level of knowledge of accessibility is not a simple task. First, disabilities are uncountable and diverse. The usual categories such as visual, hearing, cognitive, motor and learning impairments provide a high-level idea of the options to deal with. In addition, web developers need to know heterogeneous technologies and select them according to the specific purpose (Vollenwyder et al. 2019).

Responsibility assignment: To succeed in the incorporation of accessibility guidelines there must be people responsible for it in the organization. In this sense, having resources with specific functions to pursue accessibility compliance is critical. However, studies show that organizations do not implement a clear definition of the role that should assume those functions (Velleman et al. 2017). Vollenwyder et al. (2019) conducted a survey with 163 web professionals that perform different roles: most participants reported being employed in functional testing (32), management (29), user research and usability testing (14), product owner (13) visual design (13) and development (12). They concluded that non-technical web professionals are less involved in the accessibility decisions of the development process.

From the above predominant factors, it is noted that to improve the level of website compliance there are other aspects within the organization that need to be addressed, in addition to the incorporation of technical guidelines such as the WCAG. Technical guidelines are only a component of a broader strategy (Cooper et al. 2012). There are many relevant studies that evaluate the level of compliance of different websites and others that explore the factors that influence the adoption and implementation of accessibility guidelines in the software development process (SDP) of organizations around the world. However, Web accessibility has gained little attention in business and management science and the experiences from companies incorporating accessibility initiatives have not been thoroughly researched (Leitner, Strauss & Stummer, 2016). This research contribution is oriented to expand the understanding of the best practices that support the incorporation of these guidelines and that allow accessibility to be a sustainable goal.

1.3.   Research aim

The purpose of this qualitative research is to identify and categorize the practices of organizations that have incorporated web accessibility in their software development process (SDP) in order to provide a reference for other organizations when starting this journey.

1.4.   Research Question

How do organizations incorporate web accessibility in their software development process?

1.5.   Delimitations

We delimited this study in the following aspects. First, the aim of this research is not focused on exploring practices that are dependent on the different software development life cycles such as agile, waterfall, spiral model, among others. Second, due to time constraints, only four stages of the SDP will be included in this study: requirements, design, implementation, and testing. Third, the study will not explore practices related with implementations based on specific technologies, technological platforms, programming languages or notations. Fourth, only one accessibility guideline is included in the literature review, although there are several, considering that it is the most widely adopted standard worldwide.

Due to time constraints, the study limited the number of interviews to ten, half of them with management roles and the other half from the technical side. This could be prolonged in the search for more experiences that would nurture the final results since there are many people willing to share their experiences regarding web accessibility and digital inclusion.

2. Literature Review

2.1   Web Accessibility

The Internet has emerged as a new, broad environment for people where information and services are available on the web. For people with permanent or temporary disabilities this new environment can represent a challenge for interaction resulting in significant social barriers (Vollenwyder et al. 2019). So, Web accessibility refers to the possibility of all people, including disable people, to perceive, understand, navigate, interact, and contribute with the Web (Henry, 2006).

The World Wide Web Consortium (W3C) founded in 1994 is an internationally accepted authority on website accessibility standards and internet standards (W3C, n.d.). The W3C initiative to ensure all their web standards include accessibility is WAI - Web Accessibility Initiative (W3C WAI, n.d.a). The WAI is an initiative involving international organizations, researchers, disabled organizations, and governments to promote the usability of disabled people to develop techniques, guidelines, and tools that describe accessibility solutions (W3C WAI, n.d.b). According to W3C, Web accessibility promotes that "websites, tools, and technologies are designed and developed so that people with disabilities can perceive, understand, navigate, and interact with the Web" (W3C WAI, n.d.b). The W3C states disabilities include auditory, cognitive, neurological, physical, speech, and visual (W3C WAI, n.d.b). Web accessibility includes non-disabled people with temporary disability (i.e., a broken arm), situational disabilities (i.e. a bright light inhibiting the ability to navigate the web), people with slow internet connection, and or older people with changing abilities due to age (W3C WAI, n.d.b). WAI developed WCAG, as a set of internationally accepted principles, guidelines, and success criteria for website accessibility compliance. Its intention is to provide more accessible versions of web content for disabled and non-disabled users (W3C WAI, n.d.b). Nowadays, W3C encourages compliance with WCAG 2.1, released in 2018, as it is the most current version of guidelines.

2.1.1   Web content accessibility guidelines (WCAG)

There are diverse guidelines available to overcome the challenge of implementing websites for all. These guidelines serve as a shared understanding in the way to manage the development process considering disabilities. They are a reference for designing, implementing, and testing web sites, digital services, and applications (Vollenwyder et al. 2019).

Whilst there are many guidelines that could be selected as a reference, the prevailing international standard that has served as basis for laws and regulations is WCAG (Rowland, Whiting & Smith, 2015). The development of these guidelines has been orchestrated by the W3C throughout WAI with the contribution of organizations and experts around the world and its purpose is to explain how to make content accessible for all people (W3C WAI, n.d.b).

WCAG is presented as a layered model that, from top to bottom, is composed of principles, guidelines, and success criteria. In order to understand WCAG, it is necessary to understand the

foundation of the principles as all the guidelines are organized around them (W3C, 2018). The Web accessibility principles of WCAG are: (1) Perceivable, make it easier for users to see and hear content. (2) Operable, make all functionality available from a keyboard. (3) Understandable, meaning that users must be able to understand the operation of the interface and the information presented. (4) Robust, maximize compatibility with current and future user tools (W3C, 2018).

Each principle groups several guidelines, which ensures content is accessible for many users (W3C, 2018). Although guidelines are not testable, they provide a framework to facilitate the understanding of how to implement the suggested techniques and meet the success criteria (W3C, 2018). The success criteria, that are the lowest layer of the model, define specific features that the website or web product must have to adhere to one of the three possible levels of compliance: A(lowest), AA, and AAA (highest) (W3C, 2018).

To reach level AAA conformance, the website must conform to level A, AA, and AAA requirements. The five requirements of conformance, as shown in Table 1, are: Conformance requirement 1) Conformance level, 2) Full pages, 3) Complete processes, 4) Only accessibility-supported ways of using technologies, 5) Non-interference.

Table 1. Requirements of conformance. Adapted from Web Content Accessibility Guidelines (WCAG) 2.1 W3C Recommendation 05 June 2018

Conformance	Explanation
1. Conformance level	For Level A conformance, the web page satisfies all the Level A success criteria, or a conforming alternate version is provided. For Level AA, the web page satisfies all the Levels A and AA success criteria or a Level AA conforming alternate version is provided. For Level AAA conformance, the web page satisfies all the Levels A, AA and AAA success criteria, or a Level AAA conforming alternate version is provided
2. Full pages	Conformance is for full web page(s) only, and cannot be achieved if part of a web page is excluded
3. Complete processes	If a web page that is part of a process does not conform, then no conformance claim can be made for any web pages in that process
4. Only accessibility-supported ways of using technologies	Only documented accessibility-supported web technologies are employed to meet success criteria. Any information or functionality that is implemented in technologies that are not accessibility supported must also be available via technologies that are accessibility supported
5. Non-interference	This basically says technologies that are not accessibility

	supported can be used, as long as all the information is also available using technologies that are accessibility supported and as long as the non- accessibility-supported material does not interfere

All of these conformance levels reveal a general category to address accessibility usability. There is an understanding that some websites can only reach A or AA conformance (W3C). For Example, in Guidelines 1.1, the level of conformance is A because it requires alternative text and that is only one level of compliance; it is there, or it is not. There are also expectations to each guideline as to which testable situation would be most appropriate. The organization W3C acknowledges that these guidelines do not cover and would not be suitable for all disabled users (W3C).

2.1.2 Assistive technology

An assistive technology is considered "any product (including devices, equipment, instruments, and software), especially produced or generally available, used by or for persons with disability" (ISO, 2022). The most popular assistive technology tools for navigating the web include large font, high contrasting background, screen readers that dictates text on screen into speech, for low-vision users (Khasnabis, Mirza & MacLachlan, 2015). Visually impaired users do not need mouse functionality because they rely on keyboard programming and voice over to navigate computer screens (Sloan et al. 2006). Some applicable solutions to designing for accessibility is to think about assistive technology as a third user type such as a screen reader, braille technology, assistive as in the middle between the web page and the physical user (Sloan et al. 2006).

2.2   Web accessibility practices

Despite the effort of global institutions to promote digital inclusion and define standards to incorporate accessibility in the SDP, the level of compliance of many websites around the world remains low. Consequently, our strategy was to probe beyond the boundaries of the technical context into a broader organizational context, understanding that many factors that were identified by the researchers as influential pointed to other aspects external to the SDP.

Figure 1. Preliminary model of categories of practices

To this aim, as a result of a thorough literature review, a conceptual model is presented in Figure 1 that integrates categories of practices from both technical and organizational aspects in a single context. In this model, the practices related with the software development are at the core of the diagram and represent the ownership of the incorporation of accessibility guidelines. This means that web developers, webmasters and in general, the technical team will be responsible to translate the guidelines to the code of the website. The organizational practices surrounding the core represent the organizational support. These practices ensure web accessibility has the right environment to be sustainable and transcend from a one-time effort to a continuous operation. In the following sections, we will explain these two layers further. In Table 2, the preliminary model of practices is presented, including the context, the category to which practices belong and the description of each practice.

Table 2. Preliminary model of practices that support the incorporation of web accessibility

Context	Category	Practices
Organizational	a. Organization structure	Define a role(s) responsible for web accessibility incorporation
		Obtain commitment from leadership
	b. Accessibility awareness	Provide Web accessibility training to technical and non-technical roles
		Setting up a knowledge management process
	c. Technical infrastructure	Define web accessibility guidelines/standards
		Develop or purchase required tools
	d. Quality assurance	Conduct periodic audits
	e. Finance	Funding to support initiatives
SDP	a. Requirements	Define and prioritize accessibility requirements based on users' needs

		Elicit accessibility requirements in early stage of the software development process
b.	Design	Use of design patterns
c.	Implementation	Implementing adaptive user interfaces
d.	Testing	Conduct human intervention tests to complement automatic tools evaluation

2.3   Web accessibility practices in the organizational context

When it comes to organizational context, practices are expected to exist within the organization to ensure the SDP is willing and capable to include accessibility features in the websites.

2.3.1 Organizational structure

This category includes all the aspects related with the definition of a structure in terms of areas, departments, roles, functions, leadership, that researchers recommend organizations should set up when incorporating web accessibility capabilities in their websites and web products.

Define a role(s) responsible for web accessibility incorporation

Organization must ensure that there is a department or a role that is responsible for accessibility in the organization (BSI, 2010). There are great benefits for the organization when setting up an accessible organization instead of managing accessibility as an ad hoc approach. Retrofitting applications and products is expensive due to the effort required to revisit and reengineering the product (Urban & Burks, 2007). If normal roles are modified to include additional responsibilities related with the web accessibility, then those changes must be formally updated. In this way, accessibility will be effectively merged in the role. In consequence processes that use these descriptions will include accessibility as well. That would be the case when hiring new employees (Rowland, Whiting & Smith, 2015). With a survey of 362 participants including different professional roles, Vollenwyder et al. (2019) concluded that Web accessibility is stronger in the organizations if it is merged as part of their roles.

Obtain commitment from leadership

Web accessibility initiatives should be fostered by top managers, not just as approvers but as leaders. In this way, other employees will engage, and it will be given the right priority (Rowland, Whiting & Smith, 2015). Perrenoud and Phan (2012) found from a framework analysis that "establishing solid support, promoting awareness, and raising healthy organizational cultures strengthen the foundations for implementing accessibility in the organization" (Perrenoud & Phan, 2012, p.641). Reviewing successful case studies, Lazar, Goldstein, and Taylor (2015) found that commitment from leadership must be a continuous practice. Implementing web accessibility in a higher education institution, commitment from leadership sets the tone for the entire organization. This allows for planning, implementation and follow through as a unit.

2.3.2 Accessibility awareness

Provide Web accessibility training to technical and non-technical roles

Fostering awareness and knowledge on all organizational levels is therefore an important initial step for organizations wanting to provide accessible solutions. Organizations should invest in raising knowledge and skills of web practitioners regarding accessibility because this enforces the perception as specialists of the individuals which, according to their study, resulted to be an influential factor to incorporate accessibility in the organization (Vollenwyder et al. 2019). Perrenoud and Phan (2012) present organizational training as successful traits to implementing web accessibility. The authors emphasize that 'Training and education can remedy obsolescence and provide effective information on various domains, including web accessibility" (Perrenoud & Phan, 2012, p.634). In order to raise accessibility awareness, different levels of training should be provided depending on the roles of the participants. Not all participants need the same knowledge (Henry, 2007). Training has been usually oriented mainly to Web developers. However, Hong et al. (2015) suggest that these initiatives should also cover management and client organizations. They state that Web accessibility is not an "individual effort" in charge only of the developers. Instead, that should be engaged by all the actors involved in the development process. "People should be empowered with time, tools, knowledge and skills needed to build and maintain accessibility over time" (Rowland, Whiting & Smith, 2015). This statement is applicable to technical and non-technical profiles.

Setting up a knowledge management process

Incorporating Web accessibility within a company is a learning process. In order to take advantage of previous experiences some organizations manage this gained knowledge using tools. This practice bursts the awareness of different stakeholders (Leitner, Strauss & Stummer, 2016). Also, setting up a knowledge base with practices from previous experiences that will serve as a central hub to solve queries of the new solutions will help to improve the awareness of web accessibility (Henry, 2007).

2.3.3 Technical Infrastructure

Define web accessibility guidelines/standards

The standards and guidelines to ensure accessibility on websites are very diverse and can change from country to country and even from region to region, generating multiple possible options in practice (Abuaddous, Jali & Basir, 2016). Having a clear definition of the standard when developing or procuring a web product and the desired level of compliance allows organizations to have a reference for the web accessibility assessment (Rowland, Whiting & Smith, 2015; BSI, 2010).

Develop or purchase required tools

Required tools, systems, tutorials, code samples, among other resources needed for the permanent education or to ensure the compliance monitoring process are a critical factor to

succeed in the sustainability of the incorporation of accessibility in the web sites of the company. (Rowland, Whiting & Smith, 2015)

2.3.4 Quality Assurance

Conduct periodic Web accessibility audits

In order to incorporate web accessibility in a sustainable manner, there needs to be a permanent evaluation of the policies, processes and the outcomes that result from the accessibility initiatives that leads to a continuous improvement (Rowland, Whiting & Smith, 2015). One way to evaluate compliance is the certification process for a website or a skilled professional (Giannoumis, 2015; Henry, 2007). The website evaluation process would be a renewal process where the website shows compliance (Giannoumis, 2015). This compliance evaluation would need consistent practice within the process planning (Henry, 2007; Lazar, Goldstein & Taylor, 2015). This allows the company to be proactive in prevention of accessibility issues (Lazar, Goldstein & Taylor, 2015). The skilled professional would be a revealed process of web accessibility third party training course (Giannoumis, 2015). This individual certification would help optimize the workflow evaluation process of incorporation web accessibility practices, procurement of evaluations tools, and end user support (Kelly et al. 2007).

2.3.5 Funding

Funding to support initiatives

Rowland, Whiting, and Smith (2015) argue that incorporating accessibility requires sustainability planning to ensure standards, guidelines, and policy are met. The authors argue one of the benchmarks of a successful web accessibility implementation is securing a budget. Lazar, Goldstein, and Taylor (2015) echo the authors by further emphasizing that each project of web accessibility needs a specific budget; otherwise, the web accessibility is a temporary project. A budget would include salary, benefits, contracting subject matter experts, equipment procurement, and travel (Rowland, Whiting & Smith, 2015).

2.4   Web accessibility practices in the development process

The purpose of this section is to identify practices that researchers suggest for including web accessibility capabilities in each of the activities of the SDP. Using as reference the recent and extensive literature review conducted by Paiva et al. (2021) to examine the approaches from researchers to include accessibility during the SDP, this research will explore the activities of the SDP with a higher number of papers: Software requirements, design, implementation, and testing. Other activities of the process will be removed from the scope mainly because of time constraints. Figure 2 (taken from Paiva et al. 2021), shows the total distribution of the articles included in their literature review.
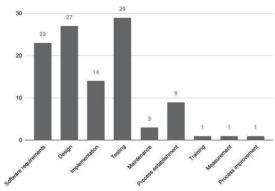
Figure 2. Number of papers per software process phases. Taken from Paiva et al. (2021).

These four mentioned activities: requirements, design, implementation, and testing constitute the categories to identify common and recommended practices in the SDP that are reflected in our preliminary model. The following sections present the synthesis of the most common and recommended practices found in the literature review.

2.4.1 Requirements

In the context of SDP, a requirement is a capability that the application must provide to meet a need defined within the stakeholder's agreement (Baguma et al. 2009). The following are the common practices mentioned by researchers to incorporate web accessibility in the SDP.

Elicit accessibility requirements in early stage of the software development process

Including web accessibility requirements since the beginning of the website development process is a practice that according with different authors is preferable in terms of effort, time, and costs (Pellegrini et al. 2020; Dias, de Mattos Fortes, Masiero, 2012). The incorporation of accessibility capabilities in the early stages of development is generally associated with high costs and long times. However, these costs become dramatically higher when attempting to include accessibility criteria in later stages of development (Sánchez-Gordón & Moreno, 2014; Shirogane, 2014).

Define and prioritize accessibility requirements based on users' needs

Requirements main source are the software users. The same applies for disabled people. Instead of focusing only on the rules of a specific guideline or standard (usually WCAG) it is beneficial to consider disable people's contextual needs, which result in a "contextualized model of accessibility practice" (Kelly et al. 2007). In fact, studies suggest combining the needs of diverse groups including non-disable and disable people (Nganji & Nggada, 2011). Also, assistive technologies represent an important source when gathering requirements (Bouraoui & Gharbi, 2019). However, disabilities are diverse, and requirements should be prioritized considering the target users and their level of disability to reduce the effort and costs related with accessibility compliance (Shirogane, 2014). A good way to recreate the disabled users' needs is to create personas that represent real disable users of the software. In agile, this could be achieved writing user stories for people with disabilities (Pellegrini et al. 2019).

As stated by Baguma et al. (2009) requirements might be classified in Functional Requirements (FR), that are explicitly requested by the client, and the Non-Functional Requirements (NFR) that are "attributes the system should have, rather than what the system will do e.g., security, reliability, usability and accessibility" (Baguma et al. 2009). Although, accessibility is commonly mentioned as a NFR (Shirogane, 2014; Dias, de Mattos Fortes, Masiero, 2012), and the Web accessibility guidelines are sources to define them (Oliveira et al. 2016), there are trends that recommend integrating them with the functional requirements (Baguma et al. 2009; Oliveira et al. 2016). In this sense, Oliveira (2016) states that accessibility requirements will be analysed per each one of the functional requirements establishing a relation between FR and accessibility requirements.

2.4.2 Design

In this phase there are different approaches related with the modelling and design of accessible features of applications concerning architectural aspects.

Use of design patterns

The term design pattern is used to refer to a well-known solution for a repeatable problem. Software architecture, its modules, and interconnections, is the domain of the design patterns (Martin, 2000). Researchers find common problems in the accessibility requirements for the various disabilities. Sanchez-Gordon et al. (2018) suggested four design patterns to improve accessibility for people with visual disabilities when using them in the context of ISO/IEC 29110 standard. These patterns are reusable and are meant to improve the programming practices transferring the design experience (Sanchez-Gordon et al. 2018). Adaptive user interfaces are a promising approach to dynamically personalize user interfaces according to the user profiles, favouring the incorporation of accessibility capabilities. Then accessibility is achieved using design patterns which provide the rules for the interaction of individuals and devices with specific characteristics and environments (Peissner et al. 2012).

Other approaches related with reusable models is to use platform independent models that can be transformed in a further step to a particular language. This is called Model Driven Development (MDD). Following this approach, Bouraoui and Gharbi (2019) propose a framework that includes accessibility features in the user interface, that allows developers to comply with the accessibility guidelines without needing lots of expertise in the matter. Another research conducted by Ordoñez et al. (2020) where they performed a systematic review of the previous work to use model driven development (MDD) to include accessibility guidelines in the development process, confirmed that including Web accessibility guidelines in conceptual models is feasible and its practical to transform this model into code, ensuring that all accessibility requirements are handled in earlier stages of development. However, they also found limitations. Implementing accessible software is complex in terms of time and costs. MDD also faces technical challenges in terms of tools to support modelling, model transformation to code, models should be also accessible, etc.

2.4.3 Implementation

Implementing adaptive user interfaces

In this phase of the SDP, researchers focus on the study of automatic techniques to adapt accessibility features of websites depending on the target users, which is especially useful when considering different types of disabilities. When it comes to adaptive and self-generating user interfaces for accessibility features, there are several initiatives that, based on the requirements of guides such as WCAG, generate the code (Peissner et al. 2012; Raufi et al. 2015; Ferati & Sulejmani, 2016).

2.4.4 Testing

The purpose of this phase, regarding accessibility, is to validate that the websites meet the required level of compliance of the referenced guideline through evaluation methods (Nuñez et al. 2019).

Conduct human intervention tests to complement automatic tools evaluation

In the different studies researchers mention two evaluation methods: Automated tools and manual inspection, that requires human intervention. Automated tools provide a positive or negative result against a guideline. Automated evaluation is the most common technique that companies rely on to validate compliance because it's simpler, faster, and free of charges. However, it is not accurate because many successful criteria depend on human intervention that provides a contextual interpretation (Vigo et al. 2013; Cisneros, Huamán Monzón & Paz, 2021). For instance, the tool can detect if the website has alternative text in an image, however, it cannot tell if the text is meaningful (Acosta-Vargas et al. 2018). So, the testing activity must be considered as a mix of automated tools and human judgment, because when an automated tool claims WCAG or any other standard conformance, it means the website or product passed the automated section (Thatcher, 2006).

3. Methodology

In this section we present the research considerations that were taken into account when defining the approach to conduct our study: Research approach, literature review, data collection, participants selection,

3.1   Research philosophy

This study follows an inductive approach using qualitative research. Philosophy builds the fundamental cohesion of this research, so there needs to be an intentional flow of argumentation. Given the researchers are aiming to explore stakeholder's experiences and beliefs, interpretivism is an appropriate approach (Saunders, Lewis & Thornhill, 2009; Goldkuhl, 2012). Saunders, Lewis, and Thornhill (2009) highlight that interpretivism produces new understandings with contextual information from the environment. This form produces new understanding based on perspectives. Because of the subjective nature of our topic, using an inductive approach we explore practices of individuals that have incorporated accessibility in their organizations. In this sense, we apply interpretivism as the best paradigm (Goldkuhl, 2012). As the purpose is to understand the stakeholder's perspective, interpretivism would give insight into the human experience based on the context.

We conceive reality as socially constructed due to the interaction of individuals with the world through language and culture. Social construct in a mutual shaping process. From this approach, we consider interpretivism leans away from an individualistic social theory but conforms to a multitude of experiences that creates a reality. We understand that interpretivism is based on constructivist ontology, meaning we believe that the reality is different on a case-by-case basis (Goldkuhl, 2012). Exploring the interviewees' experiences follows the epistemology that reality needs to be captured and interpreted to create a richer understanding (Goldkuhl, 2012).

3.2   Research approach

Following an interpretive design, many research approaches can be taken. A qualitative research approach is most appropriate to address the research question as it is explanatory. Likewise, the most appropriate paradigm is interpretivism, precisely because it allows researchers to comprehend the phenomena through their own interpretation of participants' experiences and perceptions depending on their context (Thanh & Thanh, 2015).

The gathered data was focused on values, ethics, and experience of the participants in order to generate rich knowledge (Patton, 2015). We looked for and analysed two participants' profiles: the technical and managerial context. This helps us understand the individual contextual perspective (Schultze & Avital, 2011). From the interaction with the participants, a bottom-up analysis was conducted to identify patterns in regard with common practices. This inductive approach enriched our initial approximation of technical and organizational practices obtained from the literature review. In this sense, we used the literature review to gain knowledge and outline practices to incorporate accessibility in the organization, from the technical and the

managerial perspective; then, we interviewed stakeholders to corroborate and refine the initial approximation of practices. The qualitative analysis for the data brought up findings and insights that generated rich discussion and conclusions that are exposed further in this document.

3.3   Conducting the literature review

The beginning of the research was oriented to understand the most influential factors of adoption of web accessibility in organizations. After exploring literature, we found several valuable researchers that had explored this phenomenon. With a clear perspective about those factors, we concluded that the contribution in this matter was vast. However, we identified that although the factors were clear, most of them were pointing to organizational aspects. Then, our literature review was oriented to explore the existing approaches in terms of organizational strategies, practices, processes, that support the incorporation of web accessibility in the software development process in organizations.

Using the following terms, we searched for articles, most of the peer reviewed, from google scholar and well recognized journals:

Web accessibility practices
Web accessibility processes
Accessibility in the organization
Organizational accessibility
Accessibility and software development process
Web accessibility guidelines

The literature found helped us to visualize some patterns in terms of practice categories that were the basis for our preliminary model. Once categories were identified, the research was conducted in a narrowed manner searching for more specific aspects such as: Accessibility roles in the organizations, Accessibility, and leadership and so on. The practices that were commonly mentioned constitute the lowest level of the preliminary theoretical model.

3.4   Data Collection methods

To gather experiences and opinions from different organization participants, interview is one of the most common techniques when it refers to qualitative data according to Recker (2013). Schultze and Avital (2011) give three interviewing methods that provide rich information. The most appropriate would be an appreciative interviewing that allows for a semi-structured interview process encouraging the interviewees to review and reflect on their experience (Schultze & Avital, 2011). The appreciative interview allows interviewers and participants to co-create insightful findings (Schultze & Avital, 2011). This method permits three characteristics that generate rich data. (1) Grounding the interview in participants' own experiences; as the interview is based on the beliefs and experiences of the stakeholders, it is vital to understand the participants' perspective (Schultze & Avital, 2011). (2) Acknowledging and valuing participants' narrative (re)construction of their experiences; validating the experiences of participants will

encourage them to continue to share and evaluate their own experiences (Schultze & Avital, 2011). (3) Providing an explicit framework for guiding the participants to articulate and interpret their experiences; researchers will provide an outlined initial model (internal and external framework) to guide the interviews to reflect on their experience (Schultze & Avital, 2011). These characteristics of an appreciative interview method are all performed to produce rich data. This aligns with interpretivism as it considers that nothing happens in isolation and as interviewers, in this inquisitive format of data collection, there is a need to realize our participation within the collection.

As explained in the problem, the incorporation of web accessibility is a topic that is present worldwide. Making use of Recker's (2013) assertion that interviews can be conducted face-to-face, by phone, or conference, we opted for a mixed method. The participants who are located in our city were offered the face-to-face option, which was accepted. The rest of the participants were in different countries and time zones. For them, the best approach was the teleconference.

Our interviews followed the semi-structure approach as they were framed according to the preliminary model that was created based on the literature review, meaning that there was a predefined guide (Recker 2013). But also, as the main purpose of the interaction with participants was to obtain their own experiences that are tight with their organizational context, interviews were flexible enough to allow further exploration of participants' answers. In this sense, we were able to establish bidirectional discussions using follow-up questions (Recker 2013).

3.4.1 Participants

Understanding that web accessibility is transversal to industrial sectors and that according to our literature review the low rate of adoption affects different companies located in different regions, the selection of our interviewees was focused only on the role. Independently of the company sector and their location all interviewees have been involved with web accessibility from the managerial or technological perspective.

The preliminary model suggested from the literature review defines two contexts that were susceptible of exploration: The SDP and the organizational context. Aligned to this frame, our strategy to select participants for our interview was to define two possible profiles:

1. Managerial: Includes managerial roles such as leaders and managers with experience incorporating web accessibility practices into their organizations. We define experience and background as a highly relevant aspect for the objective of the study, since the identification of good practices is normally the result of successful and unsuccessful experiences.

2. Web developers: Includes UI/UX designers, software engineers, web developers with knowledge and background deploying websites or web products that incorporate web

accessibility capabilities. Their perspective was relevant to identify the best practices in the technical context, related with the selected phases of the SDP.

We then used contacts and LinkedIn to find people whose profiles matched our search criteria. Thankfully, we found individuals who were willing to contribute and who made room in their schedules for a 30–60-minute interview.

In Table 3, demographics of our interviewees are presented. Aligned with the right of confidentiality, individuals and company names were removed.

Table 3. Demographics of participants

ID	Title	Job description	Time in the role	Company description	Company sector
P1	Business lead	Lead of developer's team, working with digitalization	1.5 years	Supports customers towards digitalization	IT
P2	Frontend developer	Web developer on charge of the front end, meaning user interface	3 years	It's a corporation that owns different communication brands.	Communication
P3	University official	Ensure strategies and infrastructure required for the academic community, including the web as a communication channel.	3.5 years	University	Education
P4	Senior accessibility lead	Ensure digital accessibility in the design	1 year	Provide different health related services such as healthcare, health plans, pharmacy, among others.	Healthcare
P5	Digital accessibility manager	Define strategies and processes to provide accessibility solutions to clients	11 Months	Provide content, data, and media solutions driven by digitalization.	IT
P6	Accessibility Lead	Work with teams to help them create a sort of scalable resolution for accessibility issues and accessibility proactively.	4 years	Leader in customer relationship management, CRM, thanks to the use of technologies such as cloud services, social media, mobile communications, Internet of Things (IoT), artificial intelligence (AI), among others.	IT
P7	Software engineer	Working on design systems and accessibility.	9 months	Provides services to power the interactions with clients using IT platforms.	IT

P8	Accessibility Lead	Running the accessibility program in the company	2 years	Help customers to find best options for traveling, using digital platforms and technologies	Tourism
P9	Interaction designer	Software developer in charge of UX for apps and web	4 years	Provide customers with technological services to support them bringing products to market	Communication, connectivity
P10	Accessibility Consultant	Auditing customers websites about accessibility compliance and provide reports	4 years	Accessibility consulting company that provides auditing services for clients.	Consulting

3.4.2 Interview guide and preparation

The preliminary model created as a result of the literature review served us as the reference to include meaningful questions in the interview guide. As mentioned by Bryman and Bell (2015), we created a guide to ensure that all the practice categories were discussed in the semi-structured interview. This guide was reflected in the semi-structured interviews because as mentioned by Oates (2006) the discussion was not randomly conducted, it has been planned by us, as researchers.

The orientation of the interview was slightly modified according to the profile and the background of the participant. So, for managerial participants the interview tended to explore more the organizational context, whereas for developers most of the time was spent on SDP experiences.

The primary purpose of interviews according to Oates (2006) is "discovery" instead of "checking" and that we were not aimed to generalize our findings to be applicable for the whole population. In this sense, during the interviews and according to the "flow of the conversation" (Oates, 2006), we delved into different aspects that were relevant to the purpose of this study, even though those questions were not predefined in the guide.

We explored participants' public profiles using LinkedIn. From that, we obtained public information about their current roles and background. That helped us to visualize the orientation of each interview.

3.5   Data capture and analysis methods

Table 4 depicts the information of the type of interview conducted with each participant, detailing the media used for that purpose, the date when the interview was conducted and the duration.

Table 4. Interview details

ID	Interview Type	Date	Duration
P1	Microsoft Teams Video Call	2022-04-26	31:58
P2	Zoom Video Call	2022-04-26	53:17
P3	In person	2022-04-27	43:53
P4	Google Meet Video Call	2022-04-27	52:51
P5	Zoom Video Call	2022-04-28	42:13
P6	Zoom Video Call	2022-04-28	46:54
P7	Zoom Video Call	2022-04-28	40:32
P8	Zoom Video Call	2022-05-03	35:57
P9	In person	2022-05-03	40:18
P10	Zoom Video Call	2022-04-28	53:17

The beginning of the interview had two fundamental purposes: first, to give the participant a broader context by informing him about the identity of researchers, the University and the program as an academic context, and the objective of the study. Second, the rights of the participants were explained, among which it was highlighted that participation is voluntary and that they could withdraw their contribution at any time and without explanation, the right to keep all the information about their individual and their company identity confidential (Oates, 2006).

Finally, consent was requested to record the session. We considered audio-recording as the best method to capture the discussion. As mentioned by Walsham (2006) with the recordings researchers will have all the information that will be possible to revisit in case it is required. With this method, interviewers will be free to leverage the time to engage the interviewee and get all the implicit and explicit information (Walsham, 2006).

As expected, a great amount of data was generated from the data collection (Patton, 2015). To prepare the data for analysis we transcribed all the recordings using an AI-based automated tool. Although this tool facilitated the work, sufficient time was spent reviewing the transcripts and correcting mistakes manually to ensure the meaning of the conversation was conserved.

After reviewing manually and checking the automated transcription for consistency, we identified key themes in the data (Oates, 2006). Oates (2006) suggests initiating with three main themes: information that is not related with the research purpose, general information that might be required for contextual description and information that is relevant for the research purpose (Oates, 2006).

Accordingly, we identified the information relevant for the research and classified it according to the practice categories defined in the preliminary model resulting from the literature review. This first level of coding was used to classify the answers in terms of the general categories of

organizational and software development practices. For this aim, as shown in Table 5, we defined a colour and a code per each category of practices.

Table 5. Colour codes for categories identification

Category	Colour	Code
Requirements	Pastel Blue	R
Design	Pastel Purple	D
Implementation	Pastel Yellow	I
Testing	Pastel Red	T
Organizational structure	Orange	O
Accessibility awareness	Green	AA
Technical infrastructure	Yellow	TI
Quality Assurance	Blue	QA
Funding	Pink	F

As depicted on Figure 3 all participants' answers were reviewed, and the relevant information was classified according to the categories of practices identified in the literature review preliminary model. So, the meaningful information was highlighted, and the corresponding code was written.

41	**When you gather requirements, do you usually follow the WCAG 2.1?**	
	Software engineer 23:19	
42	There's some stuff that I know. Or that like I've learned from experience, I usually, most of the time, follow the guidelines. And the ARIA Authoring Practices, or something I reference a lot. I don't know if you've seen that. Those are example components. ARIA Authoring Practices, show you how to build web UIs that are compliant with WCAG. So I use that a lot. There's been a few times where we were building UIs that are completely off the map of what has been done before. That it just was a lot of me prototyping, testing, luckily, there were two blind employees on my team. We would test UIs with them, test as with my other co workers who had years of expertise and so we would trial and error develop our own standards based on what is possible in HTML. So that was cool. Those were fun. It's like a creative process because I don't know if I just kind of made it up.	TI, T

Figure 3. Example of colour and coding of the participant transcribed information

The second step was aimed at exploring common practices within each of these categories. Due to the fact that it was a more detailed level, a deeper analysis and interpretation of the data was

carried out, looking for relevant patterns mentioned by several participants (Patton, 2015). To do this, the response fragments that have been highlighted were consolidated under each category maintaining the participant's information as shown in Figure 4. Finally, all these fragments were converted into practices, that is, specific actions to follow.

Participant	Organizational structure	Accessibility awareness	Technical infrastructure	Quality Assurance	Financial	Requirements	Design
P1		I think that if you do bring up a relatively low effort idea with a company, and that idea is to be more inclusive, or have greater accessibility no one dares say no anymore.	if you have half a brain you buy tools and don't develop it. But these companies that create these add ons, they have collected, sample upon sample to create these products. So,I would purchase them.			So basically, you have to draw the line at some point. Our product is not going to be targeting people with Down syndrome, for example, they're probably going to have a difficult time managing our website. So then, let's just decide that it's, we're not going to target these people, or people with that superpower.	
		I guess that's the good thing about being a millennial is that it's already very incorporated. So, in every step, in every little button, you always question what if you're colorblind? developers do tend to be a little bit like that as well with, oh, have you tried this new technology? And accessibility is the latest trend				you always have a backlog. And, you know, things don't leave the backlog	
P2	So we need to have accessibility on our site as well. And at first, we were trying to do it in house. But that can be quite difficult, because of course, you know, when you have a task managers are not really into this accessibility. So it's been always deprioritized	I guess it always helps if one of the team members have, you know, like a direct member, like a sister or brother or a family member that has some sort of accessibility issue, then, you know, that would be more easily incorporated	we tried to develop something in house. But then, of course, with the maintenance of it, we are a large company. So sharing these components, it was just too big of a complex task, and it doesn't really scale according to our needs.			So we know that when we use these components from this framework that accessibility is there, and it is okay. But before I don't recall that it was ever specified.	we try to have our des material UI and just sl
	but still I feel like when it comes down to it releasing something before the deadline, the accessibility is not the priority	I think we were already taught that back in school. So very basic things.				maybe if something like this happens, it gets highlighted to the designers. So then they can do some adjustments to it, but not really to us developers.	
	material UI, this library of components that was really decided just within our team, just to follow a good practice.	And we have this time within our work days where we can just spend it on exploring. And he was like "Oh, this is cool. Maybe we should use that." And we were all like, "oh, yeah, that's nice. Yeah, let's use that."					
	Most often what I see is that these initiatives come from developers point of view, because we can see that we are missing it. But when we have a deadline to release something, they don't really look into that.	I remember, when I went to the interview for my current job, they asked me, "So what about accessibility? How do you do accessibility?" So it sounded like they found it important. So that's why I also tried to educate myself on how to do it properly.					
P5	I just accidentally found out about accessibility and the possibility of me being able to actually use my QA skills in	I had to kind of use different types of business cases for certain people. But I focused on the people that were having	the main one [guideline], the master one is WCAG 2.1. We keep improving it also based on best industry	I see like, maybe five new projects per week, so it's quite a lot. So it's very difficult to measure success across all our projects. So the way I		So every time I get my eyes on a new project that's coming in, I make sure that I involve someone right at	And then during the d right before it moves i

Figure 4. Consolidation of identified practices mentioned by all participants per category

The described process was conducted twice. In the first round, 35 practices were obtained as the first approach. Then, a second round was conducted per each researcher. After sessions of analysis and discussions of the new practices, many of them were merged because of their granularity and they were understood to pursue the same purpose. Finally, a definitive list of seven categories and fifteen practices was obtained.

3.6   Ethical considerations

Interviews impact interviewees and interviewers as they are a reflective process (Patton, 2015). Although their purpose is to gather data, the people involved in the process will be changing, to a certain extent, the knowledge, or perceptions they had before the interview about the (Patton, 2015). Considering this, interviewees were informed about their rights when accepting to participate in the research. These rights according with Oates (2006) are:

- Right not to participate and to withdraw: Interviewees must be informed that they are not obligated to participate and if they do, they can change their minds at any time
- Right to give informed consent: As mentioned by Patton (2015), this consent is usually provided by the interviewer in advance and must provide information about the purpose and further use of the responses, the questions, risks, and benefits of the participants.
- Right to confidentiality: Participants will have the right that the data you obtain from them is kept confidential. Walshman (2006) highlights the tension of companies when it comes to their external image and reputation, and he suggests a position of "organizational non-disclosure" only if it is necessary and, in these cases, additional

contextual information must be provided. Changing the name of companies and participants using pseudonyms is still a dominant presumption (Patton, 2015)

3.7   Scientific Quality

The research success is heavily dependent on the quality of the interviews and the valuable data obtained from them. In this sense, there is an agreement with Patton (2015) when arguing that the quality of the interviews is dependent on the interviewer´s skills such as being clear, neutral, emphatic, asking clear questions and being prepared (Patton, 2015). A strict and rigorous preparation of the interview included the proper construction of the questions to be asked, the planning of the agenda and the interviewees background and context (Oates, 2002).

During the interview, a critical aspect to improve the quality of the results in terms of honesty responses was to make the interviewee feel comfortable. To this aim, some steps were followed. First, we informed the purpose of the interview in advance so the interviewee could be prepared (Oates 2006; Patton 2015). Second, at the beginning of the interview, we assessed if tension was noticeable, so we took a few minutes for a free talk, understanding this is a recommended tactic (Walshman, 2006).

To ensure the quality of the findings, tests of rigor that apply to qualitative research are suggested: credibility, confirmability, dependability, and transferability (Recker, 2003; Oates, 2006). Credibility will be achieved by providing sufficient evidence to ground the findings and conclusions. To meet this quality criteria, the transcripts and findings were shared with the participants to check the write-up was accurate (Oates, 2006).

Confirmability is guaranteed thanks to an "audit trail" (Oates, 2006), since the raw data, summaries, methods to code responses, among other deliverables are available to allow other researchers or readers to follow every step of the research process.

Dependability, that is the equivalent to reliability in positivism that seeks for the replicability of the findings, should be understood differently when applying to qualitative interpretivism. A reinforced by Oates (2006), interpretivism understands reality as a construction of social interaction. As she suggests: "interpretivism researchers aim for plausibility" (Oates, 2006). For this study, dependability is achieved because all the process that was conducted to obtain the findings is well documented for other researchers to carry-on and track the whole process.

Transferability means that the findings of the research can be applied in other domains, or in other contexts (Recker, 2003). In this regard, understanding that for interpretivism the context really matters, providing a detailed explanation of the contextual circumstances of the research will give the audits, other researchers, and readers enough information for them to assess the applicability and relevance to their own situation (Oates, 2006). For this study, demographics of the participants, including the industry sector, background and context have been provided.

4. Results

The empirical findings presented in this section were categorized according with the preliminary theoretical model that resulted from the literature review. However, as the study adopts an inductive approach, the original model was nurtured with the experiences of the participants, in the category and practice levels. In Table 6, there is a summary of the practices identified from the interviews held with participants.

Table 6. Practices mentioned by each of the participants

Context	Category	Practices	Participants
Organizational	Organizational structure	Define a role(s) responsible for web accessibility incorporation	P4, P5, P7, P8, P10
		Create a network of allies	P1, P5, P6, P7, P8, P10
		Obtain commitment from leadership	P1, P4, P8
		Prioritize accessibility incorporation in projects	P5, P7
	Accessibility awareness	Setting up a knowledge management process	P4, P8
		Promote inclusive culture	P4, P6, P8
		Provide foundational training on web accessibility for all levels	P2, P4, P5, P6, P7, P8, P10
	Technical infrastructure	Define web accessibility guidelines/standards	P5, P7, P8, P10
		Develop or purchase required tools	P1, P2, P8
	Quality assurance	Auditing compliance	P3, P5, P7, P10
SDP	Requirements	Elicit accessibility requirements in early stage of the software development process	P5, P6, P10
		Define and prioritize accessibility requirements based on users' needs	P1, P4, P9
		Use a mechanism to track accessibility requirements that were removed from the scope	P1, P4, P7
	Design and implementation	Use of design patterns Implementing adaptive user interfaces	P1, P2, P6, P4, P7, P10
	Testing	Conduct human intervention tests to complement automatic tools evaluation	P1, P2, P3, P6, P7, P8, P10

4.1 Web accessibility practices in the organizational context

4.1.1 Organizational Structure

This category was a broad and significant topic in most of the interviews including technical and non-technical profiles. The original practices included in the preliminary theoretical model are

combined with the new practices obtained from the participants. This final model will be explicitly detailed in the following descriptions.

Define a role(s) responsible for web accessibility incorporation

Creating a dedicated role with functions and responsibilities oriented to advocate for accessibility requirements to be included in the software development process and to interact with other departments in the proper moment of the process was a common theme mentioned by participants. The aspects of role definition would come from top-down management. Some challenges explained by P2, is developers and designers have no clear understanding of who is to implement accessibility features within the product (P2:46). Managers write out the functions and responsibilities of accessibility roles. Role definition is helpful to implement accessibility incorporation.

In larger companies with accessibility leads there has also been a problem of scale when rules have been defined. Accessibility leads their scope of work to implement accessibility features within the software development process. P4 and P7 who work at the same company, inform us that there is one accessibility representative per 30 projects so there becomes a priority issue that will be discussed in a later section. Both accessibility leads found their work overwhelming and hard to implement accessibility on each project (P7:6). This is also true in another large tech company were P4 explains,

> *P4: "I've seen in the same kind of industry,... [where] an accessibility designer or an accessibility engineer that sits on multiple teams."* (P4:9)

Role definition would be helpful to mitigate these problems. In organizations with no previous accessibility representative, two participants were able create a role for themselves as accessibility representatives.

> P5: "*...and then I created a full time position for myself. I'm the one who kind of created this program across the organization. So I created this new position that was not there before, across multiple offices, and then I started focusing on how we provide accessibility solutions to our clients."* (P5:2)

> P8: "*I went on a secondment as an accessibility champion, to work with our design system team and our mobile web team, to see what we could do there. And then after that, six months, I basically wrote a job description for myself as accessibility.*" (P8:2)

They both shared similar experiences by using practices such as creating a network of allies, entertaining commitment from leadership. Both of these practices will be discussed in further sections.

Obtain commitment from leadership

To ensure the digital accessibility is well received and successfully incorporated in the company processes and normal operation, the commitment from leadership has been mentioned as a critical factor. P5 focuses on people who have medium level influence in the company.

P5: "I had to kind of use different types of business cases for certain people. But I focused on the people that were having a certain influence in the company and cared about it." (P5:4)

P5 and P7 found that the support of allies with high influence in the company makes it much easier to expand the initiative.

P5 mentioned *"...leadership buying is everything. If they don't agree with this or support the teams, it's just not gonna work."* (P5:4)

This is echoed by P3, University Official, who explains that when leadership does not understand accessibility, it is hard to implement on a daily task (P3:4). Also, in other companies where accessibility leaves were present, the commitment from leadership showed through funding for resources and initiatives. For instance, P8 was able to convince the CEO of the company to join Valuable 500, which is an organization that holds 500 companies accountable for committing to accessibility initiatives (Valuable 500, n.d.) (P8.6). According to her view, this level of commitment from the leaders ensures that the rest of the company understands digital accessibility as a serious project.

From a more technical perspective, P4 explained that his role was strongly supported by the leadership of the organization and this was part of their goal towards digital inclusion. P4 highlights the overarching topic of inclusivity, where this type of accessibility initiative comes alongside a company culture of inclusivity (P4:21).

Create a network of allies, even volunteers.

According to the experience of the participants that are leading the initiative of web accessibility, the options to get a team of specialists that support the end to end incorporation of these practices are scarce; then working with volunteers becomes a feasible way to start (P5:6). Starting a network of allies can happen out of interest and personal conviction, supporting the different actions oriented towards digital inclusion (P8:2, P5:2).

P5: "... I just gathered a team of allies from teams that were helping in the production side. So for example design, development, I found some people that were not in executive positions, and they were just maybe seniors or leads, but they were still working on projects and they were passionate about this." (P5:6)

Finding people with a shared passion for inclusion is helpful with this practice. The importance of finding allies that spread the word of digital inclusion and accessibility is a theme expressed by several of the participants. Two of them, P1 and P8, experienced how critical it is to have people who have a genuine interest in promoting these initiatives so that they multiply

knowledge to other employees and areas of the organization. According to these participants, it is a subject of passion that spreads to others (P8:16).

P5 and P8 were able to create their own position by following this practice. They shared a unique perspective because they initialized organizational change by creating their own role. In both cases, they identified groups working with minority groups and advocating for the rights of underrepresented people (P8:18, P5:6). For P8, as a non-technical accessibility lead, utilizing existing company resources groups was critical to the success of creating the position (P8:4). Within this company, P8 was able to curate teaching, online workspaces to converse on this topic and spread awareness (P8:12). This was voluntary but helped reach all departments of the organization from accounting to litigation.

Relationship building within networking is also important. P7 explains that on projects where there was little acceptance for accessibility incorporation, they took different approaches to relationship building so the requirements were met (P7:26). P5, P7, maintain commitment from different teams using regular meetings where different topics are discussed, and people are informed about upcoming activities, progress, and difficulties (P7:14). The practice of having a constant presence in the organization improves the level of commitment, which facilitates the implementation of initiatives that promote web accessibility.

Prioritize accessibility requirements according with the business needs and interests

Participants have mentioned that on numerous occasions functional requirements are placed before accessibility requirements (P2:46, P4:39, P1:22). At larger companies with budgets for accessibility representatives, having one person for multiple teams is overwhelming (P4:9, P7:10). This would create a challenge prioritization for not only developers but accessibility leads (P6:14, P2:10). As a developer, P2 realizes it's hard to prioritize accessibility because of tight deadlines. Incorporating more accessibility would be more time spent on one component and that would cost the company more money (P2:10). P2 understands this as more applicable for a company with very low accessibility incorporation like theirs (P2:54).

Accessibility representatives explain that a fair angle of intervention usually deals with egregious compliance issues that would open up the company to liability If released within the products. Other than that, accessibility advocates like P4 and P7 who are overwhelmed with how to negotiate prioritization of accessibility with team leads, developers and designers; therefore, they focus on high visibility projects and strongly encourage accessibility incorporation in those projects

4.1.2 Accessibility Awareness

 P6: *"At a big company, to make accessibility scalable more people need to be aware (P6:10)."*
From the interviews, participants expressed awareness in the following categories of training, knowledge sharing, provide foundational training on web accessibility for all levels, and promote inclusive culture. Overall, most participants expressed that company culture was a leading factor to awareness throughout the organization.

Provide foundational training on web accessibility for all levels

Participants without much experience in web accessibility were vaguely familiar with WCAG. P1 states that in many cases accessibility awareness comes from personal situations, such as someone in their close circle with any disability (P1:22) confirming that accessibility awareness is not that common.

Although providing training and orientation activities to specific roles seems to be a good practice according to P5 and P8 participants, seven of the participants reiterated more frequently and more emphatically that the best way to start an awareness of web accessibility and digital inclusion is to create content that provides a foundational level that applies to all profiles.

P5: "The way I did it, I focused on doing specific training for people. So, for example, I built a master presentation master document that it was kind of good to know, for everyone for all the departments." (P5:8)

P8: "I've created a uni course. We have a University [in the organization]. And I've created a course that 's called Accessibility and inclusive design. It's module one, so it's just the general, this is what it is, this is who it's for. And this is why we do it." (P8:12)

From the technical perspective, it seems to be very common to have a general introduction to the topic. Developers learn about accessibility briefly in their bachelors if at all (P2:16). P7 recommends asking about accessibility in the hiring process in order to promote more awareness (P7:26). P2 also said in their interview for their position, the hiring managers asked about accessibility; so they studied more about it in preparation for the job (P2:72). P2 confirmed they received basic training in the topic and P4 and P6 argued that in many organizations there is this training to get the basics usually when onboarding. P7 added that accessibility talk was part of a series of mandatory training. P10, an accessibility consultant, has found it helpful to provide different levels of training that include, in general, non-technical and technical training for everyone at the company (P10:10).

Setting up a knowledge management process

When participants were asked about how they document and use the lessons learned from previous experiences, different approaches were discovered. P8 mentioned a confluence page where she consolidates web accessibility related information, such as logs, videos and notes taken from testing sections, links to guidelines, and so on (P8:29). P4 says that the way they incorporate lessons learned is through updating reusable component libraries. When they find a problem, they update the component and document it properly (P4:52). Other participants express that one way to set up the knowledge management process when it comes to accessibility is having a consultant not only do an audit but also sell you tools that already incorporate accessibility. P10 remarks that his services offer an audit of web accessibility components (P10:26). That audit then provides recommendations on how to improve and include accessibility for WCAG AA compliance (P10:20). P5 created an internal audit based on WCAG 2.1 and were able to sustain changes, which created an efficient workflow; this is also helpful to clients with specific accessibility guidelines (P5:18). This makes sure the component is

accessible and for future use will also be accessible. For developers without accessibility leads, they assume accessibility components are built within the library (P2:26).

When the audits review errors, there needs to be a follow-up discussion about and a mindset shift on how developers understand these errors. P6 recommends:

"...not just like that's an issue, but why does it matter? Who does it affect? How am I going to fix it? Having just sort of the repetition and learning from the perspective of what's the least capsule, low hanging fruit can kind of get you in a mindset of how to think about it." (P6:12)

Promote inclusive culture

Moving from a culture of compliance, where the main goal is to complete a checklist to an inclusive culture, where people is able to feel empathy understanding that accessibility affects us all, is a change of mindset that participants mentioned to be crucial for digital inclusion to succeed:

P4 states *"... my personal view, I think, is incorporating more of that humaneness is kind of critical to just make it a personal connection, rather than this is my job."* (P4:31)

P4 goes on to express that most developers they have encountered understand accessibility requirements as an obstacle to design patterns (P4:39). P6 expressed the humaneness teaching method with one-to-one meetings with developers (P6:10). Humaneness teaching incorporates real story into the training. This is to exemplify empathy within the training and put a story to the purpose, like a face to a name. Also, within this awareness category there is a need to understand WCAG in a simplified manner. Although no courses on WCAG specifically were offered, developers felt an overwhelming sense from attempting to implement on their own (P2:22, P9:18).

P8 shares that in their company they conduct empathy labs, where she asked executive teams and other employees to wear artifacts to feel what is it like to have a disability. For example, in the lab it is possible to experience vision impairment by putting on goggles that simulate cataracts, muscular degeneration, tunnel vision, and other impairments that cannot be treated with glasses (P8:31).

P8: *"And we're also running empathy labs that day, where we have where we set up different stations around the room."* (P8:31)

P8 found it helpful that empathy labs are conducted in multiple offices across the company; empathy labs are open to all employees where some volunteers will help guide others in the lab (P8:37). The lab is meant to explore disability empathy by simulating disabilities.

One outcome of the humanistic perspective is a shift of mindset from accessibility as an obstacle but within usability (P4:46). Reframing accessibility features that include a usability framework helps to incorporate accessibility within the project (P4:46). This reframing helps developers see

the importance of accessibility and reflects two approaches to motivate the incorporation of accessibility.

4.1.3 Technical infrastructure

This category includes practices that ensure that all technical infrastructure is set up to allow the incorporation of accessibility in the development process. Defining an accessibility standard and providing technical tools to facilitate developers and other roles to incorporate accessibility in their daily operation are the purposes of this section.

Define web accessibility guidelines/standards

The participants, developers, and managers, who confirmed having defined a reference accessibility standard, have greater experience in incorporating practices aimed at promoting digital inclusion in their organizations. They confirmed that WCAG is the most widely adopted web accessibility standard as it includes best practices and recommendations provided by the W3C (P2:66, P4:31, P5:18, P6:10, P7:10, P8:25, P10:4). On the other side, the participants whose practices and policies in terms of accessibility are more informal and sporadic have a more limited knowledge of existing guidelines (P1:32, P3:24, P9:18).

P5: "the main one [guideline], the master one is WCAG 2.1. We keep improving it also based on best industry standards, so trying to make it our own. And also, best practices recommended by W3C in general." (P5:18)

P8: "We created guidelines for the developers and designers and rates are three different sets based on the Web Content Accessibility Guidelines. So based on WCAG 2.1, we're aiming for level AA." (P8:25)

Guidelines are used with different purposes. The first one is to serve as a reference to measure the level of compliance and the improvement in terms of accessibility (P4:35, P5:18, P6:10, P10:4). Also, these guidelines are followed by developers to create reusable components that will be used in the design and implementation phase of the software development process. In this regard, P7 commented that WCAG and ARIA are reference guidelines for them to create web user interfaces that comply with a specific level, in their case AA (P7:10, P7:42). In addition, these guidelines help developers to align with customer needs in terms of compliance. P10 shared that they are building a website that is following WCAG2.1 because their customer is expected to adopt this new version (P10:4).

On the other hand, participants also argued that web accessibility and digital inclusion is more than following guidelines and filling a checklist. P10, that has a vast technical background, suggested although the WCAG is important, it should not be the main purpose of all this accessibility initiative, implying that at the end, everything is about the final users.

Develop or purchase required of tools

Ensuring that designers and developers have the right tools, through vendor procurement or in-house development, makes it easier to incorporate accessibility capabilities into websites as confirmed by P1 and P8 participants (P1:38, P8:22). Although the use of these tools is not mandatory, their availability encourages other teams, developers, and projects to follow the path.

P8: "So some teams have it on. Some don't, some don't even have Cypress yet as part of this bigger rollout. But it's nice to know that it is incorporated into the testing platform." (P8:22).

Of the tools mentioned by the participants, there are two predominant groups. First, design systems or frameworks that contain reusable component libraries that include accessibility properties in their features. Some participants mentioned internal developments for this category. For example, P5 was in charge of developing components of a design system whose users are designers and developers in his organization (P7:8). P10 also mentioned implementing reusable pattern libraries (P10:26). P2, for his part, commented that his development team tried to create a framework that included different reusable component libraries, but due to the large workload involved in its maintenance and scalability, they preferred to use a third-party tool (P2:12). Second, accessibility testing tools. Although this topic will be detailed later, in the practices section of the SDP, it is worth noting that all the participants who mentioned using automated testing tools in their development processes had third-party options available on the market and that they were quite popular. in the middle. However, none mentioned an internal development for this purpose.

4.1.4 Quality assurance

Conduct periodic Web accessibility audits

For this category, participants were asked about methods they used to ensure that the products and websites comply with web accessibility criteria. In this sense, many of them responded they conduct periodic audits, internal or external. P10, whose company is dedicated to auditing digital accessibility issues, mentioned that there are two ways in which companies approach quality assurance regarding accessibility. Some contract the external audit service, from which they receive a list of improvement opportunities with respect to a standard and a certain level of compliance. Others acquire licenses for technological tools that allow them to carry out the audits with their own resources (P10:8).

However, audits are usually constrained by resource availability. Several participants mentioned that the number of projects assigned to an accessibility representative is typically high, which means that the resources dedicated to accessibility tasks are much less than other roles such as developers and designers.

P7: "*The way my team was funded was that they would hire one accessibility person, per cloud, per product. That could be like 30 Scrum teams to one representative. Executives knew that it was important that they should have one person, but they didn't understand that having one person is nowhere near enough.*" (P7:6)

In this scenario, prioritization comes again as a good strategy to manage the resources limitation. P5 mentioned that measuring criteria success and compliance in all the projects was a real challenge. So, the way she found is to conduct audits to the more impactful and influential projects, improve the process and then apply the new process to all the project (P5:12).

4.2   Web accessibility practices in the development process

4.2.1 Requirements

Elicit accessibility requirements in early stage of the software development process

Participants perceive the incorporation of web accessibility capabilities in the early stages of the development process as a good practice due to the complexity and the high degree of effort and cost involved in modifying a product in its test phase before launch. To achieve this purpose, managerial participants argue that it is very important to achieve the timely involvement and interaction of accessibility specialists in the requirements definition phase.

> P5: "I tried to set up a process with them [account managers] on how they need to get me involved at the right time, so we can embed accessibility into the requirements." (P5:20)

Developers, for their part, also find that engaging with the development team and reporting on accessibility requirements before programming begins, and definitely before auditing, makes it easier to adopt and implement accessibility capabilities in development projects. P7 stated that although they did not have a formal process, she tried to interact with the designers and developers previous the audit, so they did not have huge progress in a non-accessible product (P7:18). P9 and P10 also confirmed that it is significatively better to bring up accessibility before any line of code is written, to discuss and set expectations with the whole team (P10:24, P9:20)

As a relevant point to highlight in this practice, P5 and P6 have taken the accessibility requirements to an even stricter level than the others. P5 confirmed that accessibility requirements are included by default in the statements of work that they share with their clients, which would be removed only at their request (P5:20). P6 even mentions that an app without accessibility is considered broken and having accessibility features should be part of the development cost (P6:10)

Define and prioritize accessibility requirements based on users' needs

Thinking about users implies a real understanding of the target audience of the website or product and understanding user needs is a common and well-known practice when talking about requirements. As mentioned by P1, the target audience is the input to "draw the line", to define requirements and priorities as not all web products are suitable for all communities (P1:22). When it comes to accessibility, the group of disabled users is not easy to identify within the

target audience. Some of the participants reiterated the importance of broadening the conception of the traditional user and considering cases of users with some type of disability.

P9: "*"it's more about getting a good understanding of the end user. I think, to some extent, everyone knows it's important. They might not know, what the what the what I mean, when I say, hey, we need to think about the accessibility issues or how different people are going to use this. Basically, we need to put ourselves in the mind of the end user.*" (P9:20)

P4 also argues that accessibility has to do with humans and there are stories behind it. Every web product or technology that is launched impacts in different ways to final users. To illustrate this, he brought up virtual reality:

P4: "Think of my uncle who has diabetes and has memory loss like, how can we make sure that person is still able to participate in this new technology, without hampering it or diminishing its newness?" (P4:37)

Use a mechanism to track accessibility requirements

Some participants mentioned that due to the business needs accessibility is often removed from the prioritized requirements. Prioritization was a general concern among participants due to high probability for accessibility requirements to be moved out the initial scope. To this respect, P6 and P2 state that if organizations use the traditional criteria to prioritize when there is a high level of pressure and urgency, it will not favour the incorporation of accessibility practices (P6:6, P2:8).

While all participants agreed on the importance of accessibility requirements, it was also clear that prioritizing is the key to progress, even if that means taking some accessibility requirements out of scope:

P5: "the way I realized that is working in our company is trying to be more intentional, making sure I prioritize the things that are actually important within the guidelines, give them resources, but also encourage them to focus on progression and not perfection" (P5:8).

Considering this approach, participants were asked about the mechanisms used to track those requirements that were left out of the release. P1 and P4 confirmed that those requirements were moved to the backlog where they will stay until they are totally built (P4:35, P1:24). P7, on the other hand, did not mention specifically a backlog but mentioned documents where she tracks the requirements that must be added to the future releases per each one of the development teams (P7:28).

4.2.2 Design and Implementation

Design and implementation categories are merged as a result of the interviews because considering that there is a common practice for them that is a growing trend to use frameworks

or design systems that include accessibility in the design components, reducing or almost eliminating the concern of design accessibility as such.

Use frameworks that provide reusable components including accessibility features

This practice was recurrent in our conversations with participants who were experimenting with incorporating accessibility in their organizations. Clearly, the use of frameworks or design systems is a trend in the design and implementation of accessible web sites because these allow to guarantee that all the developed products include components that have been tested and comply with the accessibility levels committed by the organization (P10:28, P7:8, P2:56).

By using the components available in design systems, designers and developers save time and effort in considering compliance criteria, since the components have already passed this process.. Both managers and developers agree that the use of these platforms makes development more efficient and guarantees, to a certain extent, basic levels of compliance.

P2: "there are many benefits to using that framework, because the components are already pre tested. Also, accessibility is implemented. And it is just much faster, when I can just use and expand on something that already exists than me doing everything from scratch."(P2:56)

P4: "From a development process, it's always looking at component based development. Depending on the organization, but if you can build in the accessibility into the component part, and then have that as building blocks throughout the development, it's already kind of baked in."
(P4:33)

4.2.3 Testing

Use of automated tools and manual testing for assessing accessibility compliance

Automatic tools are the easier and faster way to test a basic level of compliance, and according to participants there are lots of available options in the market. Automatic tools are able to provide a report of errors and warnings in reference to a defined standard. Nevertheless, there is also a broad consensus to not rely only on automated tools to validate the accessibility level of compliance.

P7: "For my current job, the testing we do we use AXE, which is the automated sort of testing software that most people use. But that only goes so far, it doesn't really check colour contrast, doesn't check interactions." (P7:48)

P8: "You can't just rely on the compliance side of testing, it has to be that real people can use it." (P8:25)

The need to include manual tests is a well-known practice among participants, since automatic tools are not sufficient to evaluate the characteristics that a user with some impediment requires for the correct use of the website. Most participants argue that there are capabilities that can not be tested by a tool and need human intervention such as using the site without a mouse, listening

to a screen reader, assessing the accuracy of captions, etc. (P5:30, P6:8, P10:28, P3:30). According to them, these activities are performed by testers or even, in a more informal way, by volunteers without any related responsibility.

Manual testing is not only about including human interaction in general. Participants also mentioned that it is crucial to engage disable people to test the products before releasing and obtain valuable feedback. P7 mentions that they would have a disabled colleague sometimes test out the product before launch. When it comes to more formal strategies, P5 and P8 confirmed they have the initiative to engage external entities that could help to find people with disabilities to test their products (P5:32, P8:27). P8 mentioned how they are working with external entities like charities to ask disable users to test the products and get real feedback and recommend these institutions as the best way to start with this initiative.

P8: "We started off by contacting local charities like the RNIB, for blind people and dyslexia, Scotland. And we asked for volunteers. ...if you're just starting out, going into charity is the best way we learned so much from doing that." (P8:27)

5. Discussion

5.1   Implications for research

The objective of this section is to refine the preliminary theoretical model with the empirical findings obtained. The comparison of the literature with respect to the results of the interviews generates a rich model of practices adopted by organizations that have incorporated web accessibility in their software products.

This thesis aims to contribute to understanding practices that organizations should adopt when incorporating web accessibility in their development process. Grouped into categories, this thesis addresses the practices of the software development process and those that support it from an organizational perspective in a single comprehensive model.

This model seeks to complement the existing discussions regarding the incorporation of web accessibility by providing a holistic organizational vision, understanding that both contexts, the SDP and the organizational, must be considered and addressed when seeking real progress in this matter. The consolidation of practices is a major contribution since the comprehensive vision of the proposed model is a compilation of different research proposals complemented by the experiences of people who are facing the problem in question from their organizational roles.

The model implies that accessibility practices adopted and implemented in SDP must be supported by a broader organizational context that provides the pillars for web accessibility initiatives to be sustainable.

Figure 5. Final model of practice categories

The preliminary model of practices included a set of categories to group them according to their organizational purposes. The categories selected for the model were similar after the empirical findings with two main changes. First, the preliminary model includes an organizational category relating to "Funding". This category was removed after discovering that in our findings there were not meaningful insights in terms of practices oriented to funding or budgeting purposes. With this decision, our intention is not to conclude that funding is not a critical factor for accessibility initiatives.

Second, in the SDP context, design and implementation were merged into one category. This decision was made after confirming that one of the predominant practices mentioned by the participants was interchangeably used for design or implementation depending on the role and the moment of the development process when it is performed. The final model of categories of practices is shown in Figure 5.

At the level of practices, it is interesting to find that those that were selected from the literature review are quite aligned with those that were mentioned by the participants as depicted in Table 7. Eleven out of fifteen practices coincide from the theoretical and the empirical research. This means that the literature and researchers suggest practices that are being adopted in organizations.

Table 7. Final model of organizational practices to incorporate web accessibility

Context	Categories	Practices	Literature review
Organization	Organizational structure	Define a role(s) responsible for web accessibility incorporation	Define a role(s) responsible for web accessibility incorporation
		Create a network of allies even volunteers	
		Obtain commitment from leadership	Obtain commitment from leadership
		Prioritize accessibility requirements according with the business needs and interests	
	Accessibility awareness	Provide foundational training on web accessibility for all levels	Provide Web accessibility training to technical and non-technical roles
		Promote inclusive culture	
		Document lessons learned from previous issues to be shared and used in future developments	Setting up a knowledge management process
	Technical infrastructure	Define web accessibility guidelines/standards	Define web accessibility guidelines/standards
		Develop or purchase required tools	Develop or purchase required tools
	Quality Assurance	Conduct periodic audits	Conduct periodic audits
SDP	Requirements	Elicit accessibility requirements in early stage of the software development process	Elicit accessibility requirements in early stage of the software development process
		Define and prioritize accessibility requirements based on users' needs	Define and prioritize accessibility requirements based on users' needs
		Use a mechanism to track accessibility requirements that were removed from the scope	
	Design and implementation	Use design systems that provide libraries with reusable components including	Use of design patterns Implementing adaptive user interfaces

		accessibility	
	Testing	Conduct human intervention tests to complement automatic tools evaluation	Conduct human intervention tests to complement automatic tools evaluation

On the other hand, the participants mentioned four additional practices that were not discovered from the literature review. These practices arise from the experiences lived by the participants, as a result of organizational situations that are common when web accessibility initiatives are incorporated into daily operations.

Another important point to highlight is the level of relevance of the practices according to the participants. Providing basic training to increase accessibility awareness, conducting human intervention testing to complement automated tools, and using design systems with reusable components were the most predominant practices cited by participants. From the literature review, one obvious conclusion was the importance of accessibility awareness as a critical condition for initiatives to succeed. Also, the fact that relying solely on automated tools was not enough to ensure an acceptable level of accessibility compliance. However, the use of reusable accessible component libraries was not a theoretical finding and was an important finding from the empirical study. This will be discussed in detail later in this section.

Also, to emphasise the importance involving disable users in the whole incorporation of accessibility practices, the following practices mandates the interaction with disabled user to add their perspective and enrich the organization accessibility orientation: promoting inclusive culture, create a network of allies even volunteers, define and prioritize accessibility requirements based on users' needs and conduct human intervention tests to complement automatic tools evaluation. All these practices and the way users are meant to be involved are described further.

5.1.1 Organizational Structure

This section will focus on categories of practices from the organizational context. The organization context focuses on definition of roles, creating a network of allies, and commitment from leadership that aligns with the literature review.

Define a role(s) responsible for web accessibility incorporation

Most respondents had aligned organizational practices that fall into the organizational category. The rich data collected from interviews and literature informs the practices and application of incorporating accessibility for the organization. The accessibility leads understood the company policy of accessibility as very important. When the company had outlined the roles of accessibility compliance, it made their job easier; managers would serve requirements to

developers and working alongside them, leads could more easily partner to make accessibility accommodations to the product. This is echoed in the literature that instead of ad-hoc managing of accessibility on the back-end, Henry (2007) recommends incorporating accessibility from the organization approach that is top down. Our findings show that the technical participants agree with the literature. With research for web accessibility, they concluded that Web accessibility is stronger in the organizations if it is merged as part of their roles (Vollenwyder, et. al., 2019). Participants said they encourage dedicating a team or role just for accessibility. This aligns with previous literature.

Obtain commitment from leadership

Commitment from leadership has led to funding accessibility roles, and those roles develop training, curate advocacy networks, and incorporate accessibility in role definition. Reviewing successful case studies, Lazar, Goldstein, and Taylor (2015) found that commitment from leadership was a continuous practice. Implementing web accessibility in a higher education institution, commitment from leadership sets the tone for the entire organization. This allows for planning, implementation and follow through as a unit. From the data collection, participants reflected similar sentiments with engaging leaders in mainstreaming accessibility, making them aware about accessibility and proactively engaging them in initiatives.

Web accessibility initiatives should be fostered by top managers, not for approval but as leaders in guiding the organization (Rowland, Whiting & Smith, 2015). In this way, other employees will engage, and it will be given the appropriate priority (Rowland, Whiting & Smith, 2015). This is echoed by participants as they used diversity, equity, and inclusion existing networks for support around this topic as they are usually supported by leadership. While building from an existing social structure, the company can "[raise] healthy organizational cultures strengthen the foundations for implementing accessibility in the organization" (Perrenoud & Phan, 2012, pg. 641). However, one way to engage leadership is through laws and compliance. Participants pointed out that to prioritize accessibility incorporation at their organization in projects where it has more impact and visibility, compliance with WCAG 2.0 and WCAG 2.1 has been a driving force of engaging leadership. This approach engages leadership to be compliant to laws not to think about accessibility dynamically.

5.1.2 Accessibility Awareness

Setting up a knowledge management process

Some patterns from participants documenting the accessibility incorporation process highlight that the infrastructure for the knowledge management process was minimal. Participants found that creating knowledge management was helpful when incorporating accessibility in projects. This has happened with component libraries, and with their own audit trail documentation. With component libraries, participants have noted that updating the components to integrate accessibility is more efficient to incorporating accessibility and implemented in new versions of

the library. With audit trail in documentation, taking notes of accessibility incorporation in later phases of the project is hopeful of getting accessibility on the radar.

Hong et. al. (2015) states that web accessibility is about multiple stakeholder participation not just individual effort from the developer. Instead, that should be engaged by all the actors involved in the development process. In reality the participants reflected limited awareness of accessibility and weak infrastructure to fully implement this practice, so engagement from all team members in the knowledge management process is underdeveloped.

Provide foundational web accessibility training

Participants voiced that not all participants in the company training need the same knowledge about accessibility, but foundational training for everyone is the most important. From the data collection we can see that consultants and accessibility leads provide foundational training for all employees. With this being their focus, providing training for all departments on accessibility, and more technical portions like HTML workshops is useful. This practice is upheld by the literature that includes the technical profiles but also non-technical for training, such as content providers (Rowland, Whiting & Smith, 2015; Kelly et al. 2007). Also, setting up a knowledge base with practices from previous experiences that will serve as a central hub to solve queries of the new solutions (Henry, 2007; Perrenoud & Phan, 2012). Organizations should invest in raising knowledge and skills of web practitioners in regard to accessibility because this enforces the perception as specialists of the individuals which, according to their study, resulted to be an influential factor to incorporate accessibility in the organization (Vollenwyder et al. 2019).

5.1.3 Technical Infrastructure

Define guidelines and level of compliance

When talking about guidelines, literature and participants have asserted that WCAG prevailed as the international standard widely accepted (Rowland, Whiting & Smith, 2015). Some participants use WCAG as a reference to assess their accessibility compliance level, implement software components, and create their own more accessible guidelines.

There was a common theme that came up very often when talking to participants about the guidelines and that is consistent with the position of the researchers consulted in the literature review: "Accessibility is about human experience" (Rowland, Whiting & Smith, 2015). Participants were aligned with this line of thought, and it was brought up to the conversation when talking about guidelines. Their message was focused on expanding web accessibility compliance beyond a checklist towards human stories.

Develop or purchase required tools

Researchers comment that this practice, although not extremely influential, is beneficial for the incorporation of web accessibility initiatives (Rowland, Whiting & Smith, 2015). Participants use different options of tools for different phases of the software development process. However,

the availability of tools is not perceived as an impediment or a facilitator for the incorporation of accessibility policies in the organization.

5.1.4 Quality assurance

Conduct periodic Web accessibility audits

When exploring this topic with participants, the main purpose was to confirm how audits were conducted and how they influence the improvement of accessibility capabilities in the websites or web products. As the literature has suggested, audits are a common way to assess the level of compliance of web accessibility in the software development process. In the same way, participants mentioned the common practice of conducting periodic audits, some of them generated and performed internally and others, but fewer, hired externally.

Although in relation to this, literature proposes that web accessibility should be part of the improvement cycles for accreditation as an organizational priority (Rowland, Whiting & Smith, 2015), constituting a formal practice with a defined process (Henry, 2007). The information provided by the participants is not conclusive to confirm that the results of the audits carried out are used in a formal process of continuous improvement. This is relevant because it shows that web accessibility incorporation practices have not yet reached a high level of formality and maturity within the organization, with performance indicators and definition of clear improvement actions.

5.1.5 Requirements

Elicit accessibility requirements in early stage of the software development process

There is a clear consensus among researchers on the advantages of adding web accessibility requirements at the beginning of the development (Pelligrini et al. 2020; Dias, de Mattos Fortes, Masiero, 2012; Sánchez-Gordón & Moreno, 2014; Shirogane, 2014). Participants strongly coincide with this approach from two perspectives: leaders and managers make an effort to include the role of accessibility in the early moments of development, seeking the appropriate spaces and interactions. Designers and developers insist that accessibility must be present in projects before the first line of code is written and long before product audits are performed.
On the other hand, when it comes to the requirements definition, studies suggest combining the needs of diverse groups including non-disable and disable people, considering that doing so at a later stage implies a more traumatic modification of the software (Nganji & Nggada, 2011). Also, assistive technologies represent an important source when gathering requirements (Bouraoui & Gharbi, 2019).

Define and prioritize accessibility requirements based on users' needs

The literature and the perception of the participants regarding the importance of understanding the end users and their context to have a detailed and precise description of their requirements

are synchronized. Researchers even suggest adding disable people to non-disable people needs (Nganji & Nggada, 2011).

However, in the information extracted from the interviews there is no evidence of a practice adopted by any of the participants aimed at capturing the requirements of disabled users. Although the willingness of the participants to create spaces for awareness and empathy where knowledge of the challenges of disabled users can be expanded, the strategy followed to define, prioritize, and agree on the requirements for compliance is not clear. In the literature there are strategies such as creating personas to represent disable users (Pellegrini et al, 2019). However, this was never mentioned by participants.

Another aspect some participants brought up is how the accessibility requirements are managed with customers. When participants were asked about how accessibility requirements are classified, functional requirements or non-functional requirements as explained by Shirogane (2014) and Dias, de Mattos Fortes and Masiero (2012), some of them referred to functional requirements. This is coherent with the trends that recommend integrating accessibility requirements in the list of functional requirements (Baguma et al. 2009; Oliveira et al. 2016).

5.1.6 Design and implementation

These two categories were originally separated in the preliminary model which follows the usual phases of the software development process. However, because of the empirical results it was convenient to merge them in a single category considering the practice that was discovered from the interviews.

Use design systems that provide libraries with reusable components including accessibility

Researchers have focused their efforts on the search for models and design patterns that allow the implementation of accessibility capabilities in a more efficient way. This architectural approach allows models and patterns to be reused in other projects or products that face similar challenges in terms of web accessibility (Sanchez-Gordon et al. 2018; Peissner et al. 2012). In addition, as these models include accessibility capabilities developers would comply with the accessibility requirements without coding (Bouraoui & Gharbi, 2019). From the empirical data, it is interesting to discover that the approach of reusable items has been adopted by organizations but in the shape of design components. Design systems that include a library of components are a trend and that was confirmed by most of our participants. However, there is a clear difference as these components only contribute with the graphical user interface or the front-end of the application. The benefit of using design systems is similar to that provided by the use of platform-independent design models or design patterns, as it contains the features that make it compliant with accessibility guidelines allowing developers and designers to disregard these requirements.

5.1.7 Testing

Conduct human intervention tests to complement automatic tools evaluation

Testing web accessibility is a critical activity of the software development process because it provides certainty in terms of compliance of a specific guideline. In agreement with the theory, participants are aware and make use of automatic testing tools, but they are clear that testing cannot rely only on those results. Participants and researchers concur that human intervention is required to provide contextual interpretation of accessibility capabilities that automated tools cannot assess (Vigo et al., 2013; Cisneros, Huamán Monzón & Paz, 2021). The recommended practice recommends using the tools as a complementary assessment that can generate immediate reports of basic accessibility features.

5.1.8 New findings

Create a network of allies

Creating a network of allies, even volunteers had helped participants to create accessibility positions for themselves. This practice was found throughout the participants' experiences. P8 used a network of allies to conduct companywide empathy labs. The volunteers from the empathy were from the network of allies she has gained and maintained for some time. To find allies, it takes someone on one network within the company. And to maintain that network, it is recommended to have a consistent channel engagement like a forum or a monthly meeting. Other participants stressed the importance of allies when it comes to awareness within the company and have also found that allies help in accessibility initiatives at the organization.

The creation of a network of allies was a notable finding because, although many researchers have highlighted the importance of accessibility awareness when seeking to engage people in these initiatives (Henry, 2007; Vollenwyder et al. 2019 ; Perrenoud & Phan, 2012 ; Hong et al, 2015) the volunteers' willingness to participate actively and the impact that these networks have on organizational digital inclusion were not evidenced in the preliminary model. This practice is worthy of being studied because it demonstrates the social importance in the organizational climate of the activities and initiatives associated with inclusion.

Prioritize accessibility in projects

Prioritizing accessibility incorporation in projects was also found as a new practice. When accessibility requirements are included in Phase 1 of product development, then the team is more likely to be incorporated within the project. Participants have said they put WCAG AA compliance as early requirements for the product, and even when the accessibility incorporation gets pushed back to further phases of the project, participants still felt that because it was in the plan that it was still more likely to get executed. Understanding that accessibility is a priority within a product is a great way to incorporate accessibility into the project.

Considering that at initial stages accessibility resources are low in comparison with other roles such as designers and developers. Keeping in mind that digital inclusion is fostered by awareness, participants recommended investing the limited resources in projects with high visibility and influence. Learning from those experiences, the accessibility practices are improved, impacting then all the other projects.

Promote inclusive culture

Through the data collection, promoting inclusive culture was a large theme. That was found to be helpful is an inclusive workspace. If the organization already promotes inclusivity regarding race and gender, then there would be an easier initiative for including disability awareness. In order to promote an inclusive culture, the participants identified practices that helped, (1) promote open door policy on accessibility training, (2) an accessibility awareness week initiative at your company, and (3) used other employee resource groups in order to network.
In addition, this culture strengthen the relation and the importance of disabled users recognizing them as a critical target an a tangible reason to incorporate accessibility initiatives.

Use a mechanism to track accessibility requirements

This practice was not identified in the preliminary model obtained from the literature review. It was discovered in one of the interviews and the question was progressively elaborated and included in the other interviews because its reference was recurrent. The practice is relevant because, as many participants mentioned, web accessibility conflicts with other functional requirements when pressure and urgency take place. In this case, requirements must be prioritized, and this also applies to accessibility features. In this scenario, several participants mentioned how they handled these requirements to prevent them from being omitted in a second version or iteration. Some participants mentioned the use of the backlog, which identifies them as agile practitioners. Another participant mentioned that she was in charge of this responsibility and the management that she carried out in this regard was done with document management.

5.2   Implications for practice

Our main aim in this study was to understand the practices of organizations incorporating accessibility into their software development process. We have refined practices from intense data collection and analysis. This section will provide recommendations in terms of practices that may add relevance to mainstreaming accessibility incorporation within an organization.

For managers and leaders, this study strongly suggests pursuing web accessibility challenges from a holistic perspective, considering technical aspects but also the organizational context to support the software development process. If accessibility is to last, it is recommended to have an organizational structure in place that promotes advocates to implement and maintain digital inclusion.

Once the organization is willing to move towards a Web accessibility compliance status, one way to start is to have an accessibility advocate. This is relevant to managers, and software

developers. Starting with mid-level influence, the managers should take into consideration what you have most access to and have a high-level understanding of company structure.

As the theoretical background and empirical findings explain, social awareness drives Web accessibility initiatives. Therefore, it is recommended to build awareness within the company and create a network of allies. To this aim, starting with foundational training that allows levelling the knowledge of the entire organization brings numerous benefits. One aspect that was noted in conducting this research is that there are people willing to help and spread the word. With a consolidated team, whether they are volunteers or specialists, the other areas of the organization must be permeated, following the categories and practices as a reference.

From a developer level, each role has a different influence over a project and the company. In order to succeed in Web accessibility incorporation, interaction with other non-technical roles and managers is crucial. On the other hand, it is recommended to find mechanisms to improve the efficiency of the Web accessibility incorporation. Reusable components that already incorporate accessibility is a known trend.

5.3   Implication for methods

After understanding the problem and the scope of the study an explanatory question was defined: "How do companies incorporate web accessibility in the software development process?" This question invites to explore contextual experiences of participants to expand the understanding of practices adopted in the organizational context.

In this sense, since this study is based on the assumption that people create their own interpretation according to their interaction with the world and the fundamental objective is to broaden the understanding of a phenomenon considering the context of the participants, it must be classified as an interpretive study (Orlikowski & Baroudi, 1991).

This initial choice leads to the definition of the method: semi-structured interviews. To obtain real benefits from the interaction with the participants, interviews were conducted allowing them to reflect and interpret their own context and reality (Schultze & Avital, 2011). The interviewees had differences of opinion, but most had invested interest in accessibility incorporation. Each participant provided deep insights and reflection on their experience with accessibility incorporation.

To answer the research question obtaining richer data from the interviews, it was compulsory to explore the participants' motivations and intentions, how they took action and practical results in their contexts (Schultze & Avital, 2011). The interview questions provided a basis to discuss the participants' experience. After conducting the interviews, a content analysis was performed and yielded new findings and confirmed findings from the literature review. Two categories were altered, and four practices were added to the model. The participants provided great information about their experience with accessibility in incorporation that helps fill in the knowledge gap.

Getting people to participate in the study was not a problem. It was surprising how people are willing to spread the word when it comes to web accessibility and digital inclusion in general. However, interviews are time consuming because of the data processing even with IT tools that helped to make the transcripts more efficient. The interviews were conducted in English. The questions were designed for English proficient participants. The language proficiency did not provide a hindrance to our data collection and analysis.

6. Conclusion

The success of incorporating web accessibility into the routine operations of an organization depends, to a large extent, on the adoption of practices both in the context of the software product development process and in the organization itself. This last context has been well explored in the literature, even though many of the factors that the researchers conclude influence the low adoption of existing standards point more to organizational than technical deficiencies.

This study balances the importance of the two contexts, SDP and organizational, by providing a model of practices that, when fully incorporated, provide an environment conducive to the sustainable incorporation of web accessibility policies. These practices are grouped into different categories depending on their purpose, which allow the identification of organizational environments conducive to their implementation.

The study aims to be a reference for those people or organizations that seek to consolidate digital inclusion practices in their products or websites. The model of practices and categories will allow them to clarify different aspects to consider and the possible ways to approach their implementation.

7. Limitation and Future work

The main purpose of this study is to explore how companies are incorporating web accessibility and create a general list of practices based on their experience. Although the organizational practices are key for the research, we were not able to interview CEOs, which may have left gaps in information that are put into practice. We interviewed subject matter experts, mid-level managers and mid-career employees to mitigate this issue. If we were to include more energy used in our study this would have led to a push in the deadline to deliver the thesis.

Due to time constraints and scope definition, this study does not provide information on dependencies between practices or any recommended order for their adoption and implementation. Exploring the best flow for incorporating this practice into the organization would provide more practical guidance for organizations and individuals looking to get started with incorporating web accessibility. Future studies may explore the relationships between the suggested practices and provide a method for smoothly introducing the practices. In this same sense, the impact of the implementation of these practices in the existing practices and processes of the organization was not explored either. Studying the possible interfaces to interact with existing processes, the information required for said interaction in terms of inputs and outputs, the definition of responsibilities within the limits of the new proposal would be an important contribution for future research to facilitate the integration of these suggested practices in the organizations.

The model of practices and categories resulting from the academic and empirical exploration has not been subjected to practical testing in organizations due to the aforementioned time constraints. As future work, the total or partial implementation of the practices model is suggested to explore their impact on the incorporation of web accessibility in an organization, in the short and long term.

Future work would include an analysis of WCAG 2.1 and how it meets accessibility needs in the larger society. There needs to be further research on the impact of policy on the commitment and implementation of WCAG 2.1. As there are other standards than WCAG, there is a need to understand why WCAG is being adopted and not the other web accessibility standards.

And finally, try to understand the level of commitment from leadership that leads to funding. With accessibility work, there is need to develop training, need to define roles, and much more. There must be a traceable understanding of leadership commitment to funding for web accessibility incorporation.

8. Appendix

8.1   Interview guide

This section depicts the structure of the interview guide that was planned before contacting the participants.

Interview introduction

1. Researchers' introduction
2. Thesis purpose: We are studying how the company supports web development processes that incorporate web accessibility. From other research, it has been shown to be a global low compliance with international standards. So, we want to explore the practices of companies that integrate accessibility in their websites and products and that seek for compliance of web accessibility standards.
3. Participants rights and verbal consent: Inform participants about their rights and get from participant a verbal consent to participate and recording the session:
    - Note that your participation is voluntary.
    - As an interviewee, you do not have to answer all the questions that are asked.
    - you reserve the right to refuse or cease participation in the interview process without stating your reasons and may request to keep certain information confidential.
    - At any stage of the research, you have the right as a research participant to gain access to your own personal data, request its correction or deletion or limitation to processing of data.
    - We will keep the recordings for future validation and traceability of our research. (Just in case: LU box).
    - We would like to ask for your permission for the content of the interview to be recorded, transcribed, analysed, and published in research outputs for the project.
4. Participant contextual information:
    - Can you introduce yourself for the record?
    - How would you describe your role within the company?
    - How long have you been in this position?
    - Has your company defined a web accessibility standard to follow as a reference?
    - How do you define web accessibility?
5. Interview: using as reference the interview guide shown in Table 8

Table 8. Interview guide

Context	Practice category	Question
Organizational	Organizational structure	**Commitment from leadership** How has leadership been involved in the web accessibility initiatives?
		Define an organizational structure to support accessibility initiatives How was the responsibility for promoting accessibility initiatives assigned within the organization?
	Accessibility Awareness	**Provide different levels of training depending on the roles of the participants.** How do you use the knowledge gained from the training in your implementation process?
		Setting up a knowledge base to share practices How have you used those lessons in new initiatives?
		Engage team member participation and stakeholders How did other departments contribute to the accessibility initiatives, if any?
	Financial	Has the company allocated a budget to include web accessibility?
	Quality assurance	Has your company defined a web accessibility standard to follow as a reference? How do you validate the level of compliance of the websites or web products?
		Continuous improvement How do you use the validation of compliance for improvement purposes?
		Audit web products How was the process of auditing web products in regard to accessibility compliance?
SDP	Requirements	**Include web accessibility as functional requirements** When gathering requirements for websites, how do you manage accessibility requirements?
		Consider Web accessibility requirements from early stages of the development process Is Web accessibility a capability that is included since the beginning of the development process?
	Design	**Use of design patterns or models to include web accessibility capabilities** How was the incorporation of web accessibility requirements when analysing and designing the website?

	Implementation	How was the implementation of accessibility capabilities in your website?
	Testing	How was your testing process to validate the level of compliance regarding web accessibility standards?

8.2   Appendix 2 - Interview transcript participant 1

Interviewee Role: Business developer
Date: April 29 2022
Duration: 31:58
Participant: 1
Researchers: Aitanna Parker and Cecilia Velasco

Item	Transcribed text	Code
	Aitanna Parker 02:19	
1.1	**Awesome. So Business developer, do you mind introducing yourself and talking about your experience a little bit for the record?**	
	Business developer 02:27	
1.2	I am Business developer and I started working in this company one and a half years ago. Previous to that I've been working as a tech recruiter for eight years, I think, or something like that. Previous to that, I've been working for an NGO, and I was a sales manager. Well, I guess you can, that's, that's the title. I worked a lot with the technical technology department. I work with digital digitalization; this is a hard word "digitalization" of the entire sales department. And previous to that I studied Management in finance. And on that journey somewhere, like on the other side of that journey, it is just me learning how to become a developer as a hobby. Basically all people I work with are in tech, and most of them are developers. I have a team of developers as well, who I work with. So it's okay, I'm very connected to that part. And I do spend a lot of time doing stuff like pink programming, if you've heard of it. I'm very active in organizations such as that one. So, yeah, that's me.	
	Cecilia Velasco 04:14	
1.3	**Okay, in your experience, have you been engaged with accessibility? And what has been your background in terms of that?**	
	Business developer 04:26	
1.4	Okay, so I actually have not gotten an introduction to this meeting. And so can you just clarify accessibility because that can mean five different things.	
	Cecilia Velasco 04:38	
1.5	Actually, that's a good question. Because well, we would like to compare your vision with ours. We are talking about web accessibility as specific for the digital environment. And what we think is that web accessibility is created to provide access to all the people, including disabled people, as part of the whole team. And we believe that disability can also be a temporary or situational condition. And it's generated because of the interaction with environments or, with people. And the web for us is an environment right now. Right? So everything that is oriented to facilitate the access of people with any condition is accessibility for us.	
	Business developer 05:51	
1.6	Then for sure, I have been in touch with accessibility. And well, as previously stated, Pink programming is a huge organization in Sweden, and we work with, we work with accessibility, I guess, to some extent, my digitalization journey in an NGO where I worked for three years, that was basically also about accessibility, because I was, well, maybe I shouldn't get deeper into that right now. But yeah, so that's, I guess, I've seen that I do work a lot with different	

	consultants as well on a day to day basis, and they work with, you know, everything from left to right, basically. And, and a lot of those people I meet, they intern with exit work with accessibility. So I actually, just two weeks ago, I was in this super long meeting with a person who spends his life working with products to make them more accessible for, as you mentioned, disabled people. And, yeah, I guess I haven't programmed products to become more accessible than, you know, me trying to, I guess, make them for everyone. But I haven't worked directly well, with the tech side of making things accessible more as I do work on like, the community side with, with young children and stuff like that, as well. So it's, yeah, it's on my NGO side, I guess I work with a lot to just have, like, children who don't have computers at home or, and stuff like that.	
	Cecilia Velasco 07:40	
1.7	**I know what you're saying, in your, in your experience, in your organization's what is your experience in terms of accessibility, being part of our organizational structure? Or how is there a responsibility of accessibility assigned to roles or departments? What was your experience about that?**	
	Business developer 08:10	
1.8	As with everything that is just, you know, not making people a lot of money, this responsibility really shifts a lot. So sometimes it's a company who were like, Yeah, you know, we have a role to play in this community, we need to, like make this more accessible, like, we can change these things. That's on the rare side. We also, I suppose, the most common thing that I can think of is like the NGOs taking the responsibility for it. So like to is, let's say that we have a school outside village anyway, an area outside my Malmo and you, we've noticed that kids emerging from that village, you know, they tend to be less knowledgeable about computers and things like that, then the NGO would take responsibility of that and, and, you know, go in and create a plan for, you know, take days or, you know, things like these smaller events really do to like, sort of even that out a little bit. Mostly, like mostly NGOs companies. I mean, I know very little about them, the governmental part of it. I do know that kids, all of them receive computers now. So I've heard at the age of 11, I think and so I guess that's what they're doing on their side. So yeah, again, with everything that doesn't cost a lot like whatever the thing that does cost a lot of money and has like a very long return on investment the responsibilities tend to shift a lot.	
	Cecilia Velasco 09:55	
1.9	**Okay, I understand, and you know, all these processes that you're mentioning, do you think that the leadership is critical? I mean in order to have these kinds of initiatives?**	
	Business developer 10:19:00 AM	
1.10	That's a leading question. Yeah, of course, yes.	
	Cecilia Velasco 10:24	
1.11	**And have you seen I mean, besides the NGO that you're mentioning, maybe in other companies in businesses or things like that, have you identified this kind of trend in the leadership that maybe they are trying to include accessibility?**	
	Business developer 10:41	
1.12	For sure. I mean, I talk about this a lot, actually, like, you know, the 2022, or	AA

whatever year it is now, you know, and then the, the kind of feeling that this like, sort of age, we're entering have that, you know, accessibility is such an important milestone, you know, like, alongside diversity and inclusion, and, you know, like building sustainable things in terms of financially sustainable, socially sustainable and environmentally sustainable. Like, you can see all of these patterns throughout businesses, that you know, you're going for it, even if it's for PR reasons, first, because you're a good person, you tend to go for these kind of, well, you tend to take on these kinds of responsibilities. The company I'm working for we, we are, we're talking about starting with that kind of event I was talking about with young children and not having, like, they don't know how to code as much as that have children and they might know, might not have access to that kind of tech that our children might have. And so we're actually going to start entering our developers into like, yeah, sign up for a day, and we're gonna have like, smaller events, with the schools and teach children about like robotics and AI and stuff like that. So, yes, for sure, I see a huge trend towards that, which, again, it's on the smaller side, compared to like the NGOs. Have, they have been doing this for decades already. So it's on the smaller side, but I can like for sure, I think that if you do bring up a relatively low effort idea with a company, and that idea is to be more inclusive, or have greater accessibility no one dares say no anymore. You know, because it's such a, if you say, No, you can end up in the newspapers. Yes, I do send it, I do see a lot of trending towards that. Yes, for sure.	
Aitanna Parker 12:38	
1.13	**By the NGOs, are they hired or like requested from these schools or towns or companies to come and do these trainings and workshops where the kids are engaged?**
Business developer 12:50	
1.14	No, it could sometimes happen that way. But then in that case, is very inefficient, you know, like, friends having dinner, and one friend is a teacher complaining about how poorly the things are at their school and the NGO person would go like, okay, then I have an idea. And, like, they do these, especially, I think these organizations because they're, I know more about them, obviously, but also there they are, like, their motto is be local. And NGOs here are going to work with tech and children in school, you know, so, so I guess they have a way of becoming, you know, like, because they are citizens of Malmo already, so then they don't have to, like hire an expert to find out like what we need or anything, they just have to have open eyes and use them. And then, you know, it's more of like: Have you guys noticed how, I don't know, there's no flowers in this part of Alma anymore. And people are like, Yeah, I noticed that too. We should create a product about that, you know, so it's very, like it comes from within the organization.
Cecilia Velasco 14:39	
1.15	Usually the websites of the companies are actually their face on the internet. So you are exploring the programming and the development, have you been engaged in the development of websites or web products?
Business developer 15:11	
1.16	I only program as a hobby. I, and well, I guess it's a hobby that really pays off because I use it all the time in my work as well. But I am a team lead for a team

	of developers who are going to build a product in two months. Two months? Yes. So it's a new team. Yeah.	
	Aitanna Parker 15:37	
1.17	So you direct them on? Like, are you like a project manager? Kind of like, direct manager?	
	Business developer 15:46	
1.18	I'm the architect to some extent,	
	Aitanna Parker 15:49	
1.19	In the project that's going to be deployed in two months, What do you think about web accessibility? Like, the requirements? Stages are like a functional component? Like, what do you think?	
	Business developer 16:02	
1.20	Well, I guess that's the good thing about being a millennial is that it's already very incorporated. So, in every step, in every little button, you always question what if you're colourblind? if this is slightly offensive towards you, you always like to think about these things. And so I would say, every step of the way, because, you know, I'm very involved with organizations who work with these kinds of questions, making things accessible, in a way. And so it's, it's this constant, you know,	AA
	Cecilia Velasco 16:46	
1.21	When you were in the requirements phase of the project, how did you handle the inclusion of the accessibility requirements? When you need to deal also with the functional requirements of the project? and considering that accessibility is huge, do you prioritize?	
	Business developer 17:14	
1.22	I get your question. So basically, you have to draw the line at some point. Our product is not going to be targeting people with Down syndrome, for example, they're probably going to have a difficult time managing our website. So then, let's just decide that it's, we're not going to target these people, or people with that superpower. I guess that happens a lot all the time, as well as prioritization and deciding, Okay, what if you're colourblind? Like, yeah, that's a reasonable one, right? That we can fix that pretty simple. What if you're blind? Okay. More difficult, we can probably manage this one, that's sort of where the line is drawn, because then how do we take it even further? Like, how do we make it accessible for a person who can't see or hear because that's not our target? That's the prioritization that as you like, we, as a team, we started draw the line. I guess it always helps if one of the team members have, you know, like a direct member, like a sister or brother or a family member that has some sort of accessibility issue, then, you know, that would be more easily incorporated. Otherwise, I do like in my network, I feel like I do have people I can just like, talk to you about these things and be like, Okay, so let's say that you're entering this website, how would How would you need like the magnifying, like, when does that become faulty? Or when, you know, things like that. So it's, yeah, I guess, yeah, it's very, it really depends on your target. Our product is more for learning, for the people building to learn. So accessibility could be a great tool to learn. But then again, there's a short, like, short time period, they can do this. And so, you know, what did we prioritize? Yeah, so that's, that's part of the process for sure.	R, AA

	Cecilia Velasco 19:38	
1.23	**I'm thinking that as accessibility is so big, and you need to prioritize, there are going to be some requirements that are going to be out, let's say in the first version, how do you track that those requirements that we're not taking into account in the first version are actually included in the next version? How do you handle that?**	
	Business developer 20:31	
1.24	We don't. I guess that's the short answer. We don't. I mean, you always have a backlog. And, you know, things don't leave the backlog. So there's, you know, they're always there.	R
	Cecilia Velasco 20:48	
1.25	yeah, by backlog is a way, right? Because they are actually included there. And,	
	Business developer 20:55	
1.26	yeah, they're gonna be there as a, if we have time kind of backlog, you know, so I can always go there and take a peek.	
	Cecilia Velasco 21:04	
1.27	**How is their response of leaders when they see that you have lots of accessibility requirements? Are they receptive to those requirements?**	
	Business developer 21:30	
1.28	So we haven't started building our product yet. So I don't know, to be honest. But I mean, I can say, and that's not very fair, for what you're what you're looking for. But for example, if I were to go into the pink programming office tomorrow, and be like, Okay, we need to make it more accessible people would be like Yes!. You know, they wouldn't be so excited to be like: Yes, this is what we need to prioritize. But then again, where are you at that kind of people? It's not a fair assessment. I do believe that it's as if you want me to guess, then I can imagine going into a room of our like, our developers, I think one or two out of seven would be like, why? you know, and probably the rest of them would be fair enough. If this, you know, it's important, then we're going to do it. I'm probably excited about the Tech Challenge.	
	Aitanna Parker 22:30	
1.29	**For quality assurance, how do you measure it? And how do you make sure that you meet your milestones?**	
	Business developer 22:51	
1.30	Again, we don't. I would probably ask a friend to try it out, and test it. Okay. And be like, okay, so it does this work for you?	T
	Aitanna Parker 23:08	
1.31	**Are you following any guidelines? Are you following WCAG? Specifically for like, your requirements and your guidelines of accessibility? Or is it personal knowledge that your team holds?**	
	Business developer 23:25	
1.32	It's personal knowledge. I guess it's not like that widely, you know, properly used yet. And if you have recommendations, I would love to take a look at them. We don't use any guidelines.	
	Cecilia Velasco 24:04	
1.33	Remembering what you said about your team, that there are maybe five out of seven that are willing to follow the guidelines about accessibility, because if	

	they think it's important, they will do it. Do you think if they have knowledge about accessibility, how is the knowledge sharing: is it something that they are influencing the other to do it? Do you feel accessibility is shared on that level, like a culture?	
	Business developer 24:38	
1.34	I mean, it is like a wildfire. Yes, for sure. You know, that 10 years ago, no one talked about changing websites to adapt to people who didn't like having two eyes or two ears, and stuff like that and proper hearing and stuff. It's so it's, and I can say this because like I'm part of that It was, like someone just like, question that once with me, and they're like, oh, but how do you use this? I feel it's like this 2022 kind of era that if someone informs you that you're not being inclusive, then your goal sort of immediately becomes wanting to be inclusive. If someone helps you to point out that you might not be inclusive, then you're probably going to want to change a little bit. In the best of worlds, of course, but and I think it's the same way, developers do tend to be a little bit like that as well with, oh, have you tried this new technology? Or have you tried this thing? Or did you when you wrote this code? Did you try doing this with it? And accessibility is the latest trend, basically. And so, having, you know, they can sort of be a little bit, I guess, it's not very nice. But it's, you know, a little bit like, oh, I can see that you have not made your website accessible. That's, you know, that's your choice. Yeah. So for sure. It's a wildfire and like helping, that really helps. Even though it might not always be positive. So but yeah, that's it's a culture thing for sure.	AA
	Cecilia Velasco 26:20	
1.35	**How are developers getting the knowledge about accessibility? Do you know if it is personal interest? Or do you know if companies are promoting these kinds of training?**	
	Business developer 26:39	
1.36	It just starts with one person within a company. It starts with one person seeing a video on LinkedIn about a person talking about how they can't read a website, and they go, okay, that doesn't make sense. And then they bring that to HR or leadership or management. And that sort of goes that way, I think. But also, you know, the developers in our team, they're very curious people. Like, if I don't think we've even discussed this that much, but like, if I were to call it one of our developers, there is one of them, for example, he would be like: so how is this the app accessible? he really does like to be on the latest trend. There are a lot of new technologies connected to accessibility. And that's what makes it exciting and what makes it so positive in terms of hope that this will actually stick. It'd be a big part of the decision making, in the product requirements state and stuff.	
	Cecilia Velasco 27:59	
1.37	**Sometimes, we have heard that for developers, there are some developers that could reject the idea, because it's a bigger effort, a bigger time that they need to dedicate. Are you aware if the developers that are working with you, that are keen on accessibility, are looking for tools to make accessibility programming more efficient, maybe for testing or implementing?**	
	Business developer 28:31	

1.38	We're very excited about new challenges. Our developers do tend to be kind of intrapreneurial. They can develop something if they want to do it. For sure if there was just like an add on, which is what this guy that I previously told you about. He actually made those add-ons, so that you don't have to create them yourself. And so he's an advisor, first and foremost. He made them himself and so there's a like limitation on what kind of code you can add them on to but he made them and like really popular kinds of code and frameworks, so they can be so easily added on. For example, the magnifying glass he can just add that on to the code. Obviously, if you have half a brain, you buy it and don't develop it. Unless you think it's so much fun to do yourself, but it is for sure the smart option to purchase that service. When you base your decisions on your experiences or like a team's experiences, it's not going to be good enough, because we don't have all the experiences. But these companies that create these add-ons, they have, hopefully, you know, collected, sample upon sample upon sample and created these products. So yes, for sure I would purchase them. And for sure, most developers teams would purchase them.	I, TI
	Business developer 30:57	
1.39	My co-workers calls me a politician, because he's like, you can't just say yes or no, you just talk. So we can make.	
	Cecilia Velasco 31:05	
1.40	No, it's perfect. That is what we were looking for. Yeah. In terms of getting experience is the best way. So, thank you.	
	Aitanna Parker 31:12	
1.41	Yes. Thank you so much for your time, and	
	Business developer 31:15	
1.42	happy to help.	
	Aitanna Parker 31:16	
1.43	Yeah. So, we will be following up with you in the next two weeks with the anonymized transcription and the notes that we've taken in this interview, so that we are interpreting the interview correctly, and the transcription is as accurate and anonymized as possible. And upon your approval, we will then use it in our master thesis. So, within the next two weeks, we will be following up with you. Perfect, I'm sure	
	Business developer 31:41	
1.44	I have nothing to worry about. So don't worry too much about it.	
	Cecilia Velasco 31:47	
1.45	Thank you so much.	
	Business developer 31:48	
1.46	Talk to you later then	

8.3   Appendix 3 - Interview transcript participant 2

Interviewee Role: Accessibility lead consultant
Date: April 26 2022
Duration: 32:36
Participant: 2
Researchers: Aitanna Parker and Cecilia Velasco

Item	Transcribed text	Code
	Aitanna Parker 00:07	
2.1	**Could you please introduce yourself for the record?**	
	Accessibility lead consultant 00:23	
2.2	I work as a web developer at a company, which is a corporation that then owns different communication brands. So, I work under one of those brands. And I've been part of that brand for three years now. And so, I'm a web developer in the section of the site where I focus on that is the help and self-service.	
	Cecilia Velasco 01:34	
2.3	**How do you describe your role in the company?**	
	Accessibility lead consultant 01:43	
2.4	As I mentioned, I'm a web developer, I focus on front end development. And I work with React.	
	Cecilia Velasco 01:59	
2.5	**sorry to interrupt, but when you say front end developer is because you're talking about interfaces that face customers?**	
	Accessibility lead consultant 02:07	
2.6	Yes. So, in the development, usually, there are three parts. The front end that you usually see on some website with some text, and buttons that you can interact with. And then when you click on the button, then we make some API calls. And then there is a back-end structure that communicates with the database, which is the third part. So I'm working in that first layer, the front end.	
	Cecilia Velasco 02:34	
2.7	**So going a little bit deeper, now that we are talking about the interfaces, has your company or your team defined a standard or a guideline for web accessibility?**	
	Accessibility lead consultant 02:57	
2.8	Yeah, we've been trying to do that for a really long time. And even before I've started because we are quite a large company. And since we also own different brands, it's very likely that many people use our services. So we need to have accessibility on our site as well. And at first, we were trying to do it in house. But that can be quite difficult, because of course, you know, when you have a task managers are not really into this accessibility. So it's been always deprioritized. And then we didn't tend to get back to it. So, what our practices are now is that we try to use some frameworks that have the accessibility built into it. So, for example, when we use some components, for example, buttons, they are already optimized with accessibility in mind. So that eases our work.	O, I
	Cecilia Velasco 04:13	
2.9	**Now that you mentioned management, we would like to know, how is the**	

	commitment of leadership in terms of accessibility when some initiative is coming up?	
	Accessibility lead consultant 04:34	
2.10	That is quite difficult to say because I have to admit that we did have workshops on good practices for accessibility. And of course, also now we are moving to the use of this new framework which has built in accessibility to ease the development of accessible interfaces, but still I feel like when it comes down to it releasing something before the deadline, the accessibility is not the priority. The main functionality so that we can support most of the users is the priority. And I know it's terrible. But that's where we are now.	AA, O
	Aitanna Parker 05:19	
2.11	**I wanted to follow up on the framework that you say was built into it. Are they like in-house developed frameworks? Are they from somebody's training? Where did those come from?**	
	Accessibility lead consultant 05:42	
2.12	At first, we tried to develop something in house. But then, of course, with the maintenance of it, we are a large company. So, sharing these components, it was just too big of a complex task, and it doesn't really scale according to our needs. So, what we are using now is called Material UI. And that is the front-end framework for components that we can then just use and styled according to our design system that is provided by the designers.	TI, I
	Aitanna Parker 06:19	
2.13	**That makes a lot of sense. And does that Material UI have a validation process for how accessible things are? Or do you have a standard that you manually check for accessibility?**	
	Accessibility lead consultant 06:34	
2.14	I have to admit that I don't do that myself. The only thing I do is I verified the tabbing navigation. So that is when I try to navigate the page without using the mouse or touchpad. I'm just using the tab and I try to verify if everything works. But then we have testers in each of our teams. And it is also their responsibility to check how we are doing on accessibility. And I know there are some chrome extensions that they use to verify this. But I don't have much experience with that myself.	T
	Cecilia Velasco 07:13	
2.15	When it comes to training, or awareness about accessibility, how did you get this information about what is accessibility and what is it for?	
	Accessibility lead consultant 07:34	
2.16	I think we were already taught that back in school. So very basic things. So, for example, an image tag should have alt tag which describes what that image depicts. So then, when users are using a screen reader, it can be read out loud what the image stands for, for example. Or just using proper HTML tags to structure the page. I think very early on, they try to explain the importance of it.	AA
	Cecilia Velasco 08:17	
2.17	**You mentioned something about the testers and just checking more from the organizational perspective, how do you use the results of those tests? I mean, about the level of compliance? Is there any improvement?**	
	Accessibility lead consultant 08:41	
2.18	Yes, definitely. So, every time we finish a task, we use JIRA for our development	T

	purpose. Every time I finish my task, I move it to the QA plate, and then they test it. And if everything is okay, then we move it to done and we release it. If they find something, then we create another ticket, for example, that we need to fix, the tab navigation doesn't work across the page. So, then we create a ticket for that in that is added to our backlog and it needs to be prioritized and taken to the sprint so we can work on it again.	
	Aitanna Parker 09:27	
2.19	**And are you aware if QA testers have any certifications or specific knowledge for accessibility and how they qualified for that position?**	
	Accessibility lead consultant 09:42	
2.20	I know I'm I don't.,	
	Cecilia Velasco 09:55	
2.21	**We would like to explore a little bit more in the part of the software development process itself. So, in the stage of gathering requirements, how do you identify the accessibility requirements? And when do you think that is done in your process?**	
	Accessibility lead consultant 10:22	
2.22	This is a very good question. And I have to admit that when I read through acceptance criteria from a task, it doesn't state the accessibility. Now, it's much easier that we use this Material UI framework that has the accessibility built into it. So, we know that when we use these components from this framework that accessibility is there, and it is okay. But before I don't recall that it was ever specified.	I, R
	Cecilia Velasco 10:53	
2.23	**I'm a little curious about the framework. What I'm thinking is that something that you use for the implementation part, is going to ensure that you're including at least some of the capabilities that accessibility is asking for, right?**	
	Accessibility lead consultant 11:19	
2.24	Yes, right. Yes.	
	Cecilia Velasco 11:21	
2.25	**It is also a tool for the design, right?**	
	Accessibility lead consultant 11:36	
2.26	That is a very good point that you brought up. Because of these Material UI components, they are already designed in some way. So, we try to have our designers somewhat follow the already existing design from the Material UI and just slightly tweak. So, for example, our colours and our visual elements. So then, as developers, we don't build too much on top of it, or alter it too much. So, then we lose these accessibility capabilities.	D
	Cecilia Velasco 12:13	
2.27	**Are you aware of this framework covering different types of disability? For example, if that framework is covering visual impairment, or hearing cognitive disabilities?**	
	Accessibility lead consultant 12:35	
2.28	When it comes to the visual part, I think that is also dependent on the designers. Because I know for example, there needs to be a certain level of contrast, in order for people to see it correctly. You're asking what types of disabilities this framework caters to?	

	Cecilia Velasco 13:11	
2.29	**Yes, if you're aware. I'm assuming that there are some tools that are more oriented to the visual, as you said right, to cover all the visual disabilities. But it could be all of them. I mean, there are different types of disabilities. So I was just wondering if you're aware, what kind of disability that framework is including?**	
	Accessibility lead consultant 13:43	
2.30	What I'm aware of, is this screen reader. So, when you're someone that gets these not so good visually, then this text can be read for them. For example, each image is required to have a description and things like that. I don't know about what type of disability that is. But when you just use the tab navigation, that's another one. Yeah, I don't know. Sorry.	
	Cecilia Velasco 14:33	
2.31	**Are you aware of this framework capable of creating code directly?**	
	Accessibility lead consultant 14:47	
2.32	Yes, this framework includes components that we can then use in the code.	I
	Aitanna Parker 14:59	
2.33	Can you give us an example of how that would be implemented?	
	Accessibility lead consultant 15:07	
2.34	Okay, so let's say I would need the input box. So, I would go on the material UI side, and I would search for an input box. It would give me some code that I could use for an input box, and how I should use it and the different types of input boxes and what functionality they support there. Then I can copy the code snippet from there, and then just customize it.	
	Cecilia Velasco 15:41	
2.35	**When testing your websites or web products, do you use automatic tools, such as the Google extensions that you were mentioning?**	
	Accessibility lead consultant 16:35	
2.36	I think that is very specific to that particular task. Just trying to think of a scenario. So let's say we've implemented an article page, and that has some header text images, and maybe some buttons to go to some other pages. So, then the tester would go through the page with this accessibility tool, Chrome extension, and I know it gives some rating. So for example, there has to be some area label for certain sections, and he tracks if that is there, or if, as I mentioned, the images have the alt text, or if the links are proper links, and things like that. So, I believe there is the least and also a percentage, how much do we fulfil of that.	T
	Cecilia Velasco 17:52	
2.37	**Are you aware if the testers include a human in their interaction with a web page?**	
	Accessibility lead consultant 18:20	
2.38	I don't know. Actually, I would say that it is rather rare, or when something is pointed out to them, or when we release a larger feature.	
	Aitanna Parker 18:35	
2.39	**In your scope of work, when you think about navigation specifically, are you thinking about different technical issues as well, when you're trying to design for navigation, not just accessibility. So, if somebody's keyboard was broken, do you**	

	think about how they would navigate without a keyboard but not necessarily a disability [related assistive technology]?	
	Accessibility lead consultant 19:01	
2.40	This comes down to the use of the tab navigation. And that is something that I try to do quite regularly because that has been pointed out to us quite a couple of times. So, this is the thing that we tend to do. And then, of course, I try to see if the page works on desktop, if it works on mobile and tablet, and then I tried this tap navigation. That's about it.	
	Aitanna Parker 19:31	
2.41	**Do you consider low internet speed as well?**	
	Accessibility lead consultant 19:38	
2.42	That's a really good point. Yes. Especially when we have some animations on the page or something that takes a longer to load. I try to customize the throttling in the developer tools and see how the page loads and optimize that as well.	
	Aitanna Parker 20:34	
2.43	**So just to be clear, your company has specific roles that test the accessibility standards of the website. Do you know if they follow any specific guidelines or criteria or standards?**	
	Accessibility lead consultant 20:55	
2.44	I don't think they do. I think it is just the things that get pointed out often, and also the things that are mentioned in these accessibility extensions that they use. But other than that, I don't think there is.	
	Cecilia Velasco 21:12	
2.45	**Do you receive comments about accessibility from your users, and is it an input for you to fix or include some capability?**	
	Accessibility lead consultant 21:16	
2.46	I would say is very rare, I've experienced it, because we had back in the day, some testing with the real users, we have this quite a cool room where they can perform a user experience this, and then we see like, behind the mirror and can watch them and we had some encounters that they didn't understand. For example, how to expand an accordion. And then based on that, we went indeed in action and altered the accordion. But it's not a regular practice. And we don't interact that much with our users with our current company set up. So now, maybe if something like this happens, it gets highlighted to the designers. So then they can do some adjustments to it, but not really to us developers.	T, R
	Aitanna Parker 22:39	
2.47	**And do you know, because you have specific testers and developers who are trained in accessibility to really think about these things. Do you know what push it was to have those people in those roles or have those skills required? Do you know if it was a governmental policy, a company leadership or genuine interest?**	
	Accessibility lead consultant 23:10	
2.48	Well, for example, the switch to Material UI, this library of components that was really decided just within our team, just to follow a good practice. I don't really know.	O
	Aitanna Parker 23:30	

2.49	**So the team members did this on their own, it was their own initiative. Was it a specific manager?**	
	Accessibility lead consultant 23:38	
2.50	It was my teammate, in the same position as me. And we have this time within our work days where we can just spend it on exploring. And he was like "Oh, this is cool. Maybe we should use that." And we were all like, "oh, yeah, that's nice. Yeah, let's use that."	AA
	Aitanna Parker 23:57	
2.51	**So you were a part of this internal framework development, then?**	
	Accessibility lead consultant 24:02	
2.52	It's not internal framework is already a framework on the internet, because we tried to have our own internal framework that also included accessibility. And it was very similar to this material UI, but on a smaller scale, and we developed everything in house, but it was really difficult to manage it. And yeah, the scalability of it wasn't very feasible.	
	Cecilia Velasco 24:34	
2.53	**Do you think that in the other departments of the company, people are aware about accessibility? And do you see other departments interacting with these kinds of initiatives like the internal framework that you were trying to build or is just like a technical aspect?**	
	Accessibility lead consultant 25:05	
2.54	Most often what I see is that these [accessibility] initiatives come from developers point of view, because we can see that we are missing it. And it is a good practice. But if we are to do it ourselves, and as we were trying to have that in house framework, it takes quite a long time to develop it. And the managers accept that we should follow these principles, and our pages should be accessible. But when we have a deadline to release something, they don't really look into that. So, it is mainly a developer's initiative. But I have to say that it's different from team to team. For example, when I started, I was in a team where we solely focused on help. And there the attention to accessibility was a little bit higher than for example, in another team where we focused on billing, for example.	O, AA.
	Aitanna Parker 26:17	
2.55	**Do you think [that] when you use this framework, do you think it impacts your work or the quality of your work at all? Or does it limit you into what you're able to do for navigational purposes?**	
	Accessibility lead consultant 26:38	
2.56	I think there are many benefits to using that framework because the components are already pretested. Also, accessibility is implemented. And it is just much faster, when I can just use and expand on something that already exists than me doing everything from scratch. And then also, oftentimes in the development is that we make something, and we show it to the designers. And they're like, oh, this is not quite right. So, here's the new design, and then we have to redo it again. So, if we have to do it from scratch all the time, it just takes way more time than when we are able to just use this framework.	I
	Aitanna Parker 27:17	
2.57	**Do you ever feel limited in the components? Or like you adding some different accessible components within this framework? Do you ever feel limited on how**	

	you can design things or how you can tweak from a designer's perspective?	
	Accessibility lead consultant 27:35	
2.58	Well, there's always these discussions between developers and designers like we try to make it less work for us, they try to make it look pretty. So, but I will say that in spite of the processing, we see it goes by and we have these communications there over the table. Yeah, I don't really see any difficulties in that.	
	Cecilia Velasco 28:06	
2.59	**This is a third party framework, right? And all the developers need to have some training about the framework?**	
	Accessibility lead consultant 28:22	
2.60	Yes. But it wasn't like a training that we would receive is really learning by doing I would say,	
	Cecilia Velasco 28:30	
2.61	And of course, everything that you do on the framework, I mean, the components are reusable, right?	
	Accessibility lead consultant 28:40	
2.62	Yes.	
	Aitanna Parker 28:51	
2.63	**When you design, do you use design patterns or any other architectural approach to include web accessibility capabilities in your development? So is there anything not included in the framework that you do on your own that you think would also fall under accepted accessibility?**	
	Accessibility lead consultant 29:12	
2.64	Unfortunately, no.	
	Aitanna Parker 29:19	
2.65	**What do you define as web accessibility?**	
	Accessibility lead consultant 29:29	
2.66	What I define by that is that there are these conventions. I forgot the name but, like I know it will be on the record. So, following these conventions	
	Aitanna Parker 29:57	
2.67	like the international standards the WCAG.	
	Accessibility lead consultant 30:19	
2.68	W3C	
	Aitanna Parker 30:23	
2.69	**And they help guide what you as an individual think about when you think about web accessibility?**	
	Accessibility lead consultant 30:29	
2.70	Yes, yes, this is exactly that. And I believe they also have some type of checker as well, that we used to use back in school. And when I think of accessibility, this is what I pictured in my head.	
	Aitanna Parker 30:42	
2.71	**Do the things in the training that you learned in school really impact your work today? Do you think it's helpful?**	
	Accessibility lead consultant 30:59	
2.72	Well, definitely, but in school, I think I've only got like an introduction to it. And	AA

	then also, I remember, when I went to the interview for my current job, they asked me, "So what about accessibility? How do you do accessibility?" So it sounded like they found it important. So that's why I also tried to educate myself on how to do it properly.	
	Aitanna Parker 31:44	
2.73	Thank you so much.	
	Cecilia Velasco 31:47	
2.74	Thank you so much for your willingness to contribute with our Master thesis.	
	Aitanna Parker 31:57	
2.75	Do you think there's anything we left out, anything you want to add in regards to web accessibility, your job, your role, your company's efforts, anything?	
	Accessibility lead consultant 32:10	
2.76	No, I think we covered it already. Great job with the questions.	
	Aitanna Parker 32:15	
2.77	Thank you so much. Thank you.	

8.4   Appendix 4 - Interview transcript participant 3

Interviewee Role: University official
Date: April 27
Duration: 43:53
Participant: 3
Researchers: Aitanna Parker and Cecilia Velasco

Row	Transcribed text	Code
	Cecilia Velasco 00:09	
3.1	We would like for the record, if you can introduce yourself and explain a little bit about your role in your company, your functions in general.	
	University official 00:24	
3.2	I work with recruiting our international students. And as a part of that, I help a little bit with our kind of web content. To be honest, most of my role isn't based on the web. But I have come into contact with web accessibility through some parts of my role, because I work with a third party, which is an online platform that allows prospective students to chat with current students, and our virtual tour, which is Project Manager of which also, obviously, it's on the web, and has a lot of different tech details and things. We actually have a colleague in our office who is our web, I don't know what she's called Web Developer editor, person to like, actually puts everything on the web, but I kind of worked with her a lot. And like, kind of details of things like that. And then I do a lot of other work that's probably not too relevant to like webinars and recruitment events and things like that.	
	Cecilia Velasco 01:26	
3.3	**Perfect. When you listen about web accessibility, how do you feel the commitment of the leaderships of the organization, when there are these kind of initiatives?**	
	University official 01:53	
3.4	I feel it's something that is kind of treated as a yes, we have to do this, because it's the law, but none of us really know exactly how we have to do it. Just make sure you're doing it. But I think the leadership doesn't really know what that means. Then it becomes kind of down to, like individual people who work with the web to like, figure out what that means. And if we're in compliance and what goes into that, in a way, I think, actually this University, in my work, at least is one of the first universities it seems that is like trying to get in line, but it's taking years to try and get in compliance with like, especially the new, again, I don't know the specific terms, but I'm sure you guys do but it was like a year or two ago, there was like a new WCAG, or like some walls that was passed. And purely just because of the work I do with visited the third party, who also worked with a lot of other European clients, we seem to be the first people that are going to them saying like, by the way, this needs to be in compliance with the new laws, because we're trying to be in compliance with the new laws. And they're like, what there is new laws? I'm like how have no other university come to you about this yet. I think it's one of those things that like, in my organization, at least it learned people are trying to pay attention to web accessibility and being compliance quite a lot in recent years. But there's like a very small amount of people who actually know what that means, which is the difficulty the leadership doesn't necessarily know what that means, other than make sure that we're doing it.	AA
	Cecilia Velasco 03:25	

3.5	**When you talk about a platform that is a third party platform, how does it work? Accessibility is like a requirement for them. Like you need to have it so we can work together?**	
3.6	They kind of have had their own accessibility in the beginning, which to be honest, when we bought it, we didn't look into that much. We just trusted like, yes, you have this, right. And we actually had the communications team, which so we're international marketing, recruitment is kind of like a small hub of communication. But the university also has a central communications office who's responsible for like, all of the larger like branding image and like any big communication that goes out like from the rector, and their office actually paid to have a consulting company come in and like do a full evaluation of the website and tell us like what needs to be changed, which is when the third party was first flagged as not actually being in compliance with the new laws. So sorry, this maybe that was like beyond your question. But so basically, it came down to, especially with in terms of screen readers that anything related to the third party didn't have a descriptive enough title. So we had, at the time, a lot of bonus integrations, because The third party as you know, is a sort of widget that's built into the website. And that was sort of okay, but they have all these side integrations like pop ups where, if you go to a certain web page, this thing will come out that has a random ambassador that says like, Hi, do you want to talk to a student click here, kind of thing. Or buddy cards, which will be like a little image of a student's profile. And we would put those, for example, on the program pages. Somebody who goes to the program can immediately see the ambassador and click over things like that. And all of those, basically, none of them had a descriptive thing that basically like at the screen readers would read it and just say, The third party pop up, and anyone who doesn't know what the third party is, don't know what that means, for us to be able to know. And then the law is, of course, that anyone using a screen reader should be able to understand and interact with anything that's on the website. We approached somebody about this, and they changed it because it should supposedly, again, I'm not super tech knowledgeable. I had to be the middleman basically, between the third party and our web team. But they changed whatever was in the code, which is apparently a very simple change to make the description for the popups, but then didn't change anything else. Because what he said, we need to do a full evaluation ourselves of the accessibility and blah, blah, blah. And that has taken them like a year to do. We haven't been able to use anything else on the web until now like, until very recently, really. Because of this like, which I kept kind of messaging them every month and being like, it should be just a very quick fix, like if you do the same thing that you did for the first one, but the other ones, that's all we need to use this. And they still were like, Oh, our tech team is still looking into it. They're still evaluating to have it's like, pretty hard to get a response.	QA
	Cecilia Velasco 03:25	
3.7	**Just listening what you're saying, we could say like, the responsibility of a web accessibility is more like, depending on the people, right is not like, an organizational policy.**	
	University official 06:54	
3.8	It's very decentralized, I would say and in general, and is very decentralized, in terms of like, I mean, if LUSEM buy something, LUSEM also has a The third party platform, for example, and I've no idea, I think they're using some of the things even though they're not web accessible, because we're not really connected to them. There's no oversight over any individual group, basically, to some extent. It's very much up to like when we	O

	realize, oh, we need to do this to be accessible, we do it. But that doesn't mean that everybody else at the university does. And they could be doing things that were not that are more accessible.	
	Cecilia Velasco 10:59	
3.9	**Okay. Following that part as well, how did you know or how the team came to know about the laws? It's something that is coming also from the management ?**	
	University official 11:17	
3.10	That's a good question. Because honestly, since I am not the, I just remember our web, person in our team. And like the one other lady who kind of used to do the web basically talking about that, oh, this new law has come up. I don't know if it's something that like within their job, they scan for that to be honest. Or if it was something that the management like down said, I just remember it kind of quietly becoming this thing that became talked about, I actually think probably most of it came from that central communications team, I imagine they do kind of keep track of these things. ==And then since they did that audit of the whole web accessibility, that's what really pushed our team to be like, Okay, now, these things have been flagged, so we have to work to change them.==	AA
	Cecilia Velasco 12:05	
3.11	**About the general knowledge in your team or maybe other teams. At this point, I think we already know that it's not a homogeneous, but do you know how people is getting that knowledge, and maybe it's a personal interest in some something in?**	
	University official 12:28	
3.12	I think it's really just kind of word of mouth between people who have to deal with it, like the first person who makes a video and someone tells them Oh, remember, you, like, whoever they send it to, to upload says, You have to caption this, and then that person hears somebody else's making a video, and they're like, make sure you have to caption this, and it kind of spreads. And I think now it's to the point where like, most everyone, and everyone in my team, like is aware that this is, but it's kind of, and this is a bit sad, but it's kind of treated as more of oh we have to make this accessible, rather than Yay, we're accessible. Because of the amount of time it takes for what, I guess I can't speak for my team, but for what I view as a very, very small potentially group of people that are using this for example compared to like, I mean, coming on 20-30 hours a week, like our time, just captioning during the heavy periods of time. I think it's one of those things that is somewhat being embraced, because we have to, but everyone would much rather not, which is a shame, because of course, it is something that should be a good service for other people who need it. But I think the amount of time and the amount of kind of disparate information about it that there is no guideline of like, this is exactly what you have to do and how you have to do it makes people kind of, you know, like I said, my colleague, the other office was like, we just don't record anything anymore, because we don't want to have to, you know, which also makes it much less accessible to anyone who would watch this video. Things like the general information session during orientation, that was something that normally would be videotaped, and put online. If you miss that session, you could watch it, which of course, every admitted student, not just people who need accessibility measures for different disabilities or purposes, everyone needs that information. But now, no one gets that because we don't want to have to deal with the time it takes to do this so there's this. Yeah. Sort of, not super pleased attitude. ==So no overarching guidelines==	O
	Cecilia Velasco 14:25	

3.13	It is not clear what is the impact.	
	University official 14:28	
3.14	The reason we ended up realizing about oh, maybe we could kind of get away with not doing grammatically correct and just kind of, you know, making sure it's accurate in the wording and taking out those gnomes and everything is we've had a video that we realized was on YouTube from like, a year and a half ago that didn't have any like it just had the YouTube auto caption and it's like, Well, nobody's complained about that in two years. Is there really someone out there who's like, upset that we're not doing this accurately? You know, and it makes this thing of like, okay, well, we'll keep doing it because we need to, you know, be in compliance, just in case but at the same time, like, I feel like it kind of became a we can defend ourselves, if someone complains by it is accurate as to what's been said, Do you really need a capital letter in a period? You know, and a comma? And yeah, kind of thing? And when, and I think we actually had someone on our team, like, Googled what is the rule, and it was like, a bit vague to that like it. We kind of interpreted it our own way. But again, we're, to my knowledge, the only team that's really like, gone that path right now. And everybody else is either doing it completely accurately, or not uploading videos at all because of this, or keeping it unlisted. That it's like they can send it to only who they need to, and hope that nobody complains, basically.	QA
	Aitanna Parker 16:06	
3.15	**Can I ask about your feedback portion? What type of feedback have you gotten that has changed, like some accessibility measures that you've implemented?**	
	University official 16:14	
3.16	Nothing. That's the thing we haven't or Well, the feedback has all been from, like, because of that audit, or because the communication team or someone says, this is the law, so we have to do it. But to my knowledge, we've never actually had a student or user say, Hey, you're not accurately, you know, capturing this, or I can't understand this on the website. It could be that has been a complaint that's gone to the communication team, but to our team, at least, we've never had someone say, like, I'm watching this webinar, but it's not accurately captioned or something like, yeah, so it's one of those things that we always, of course, someone could at any time, so we, you know, continue to try to be compliant with it, but which also, again, increases the feeling of like, who are we doing this? It's taking so much of our time. And I compare it personally a little bit a lot to like we work with, we work with the whole globe, but we have particular countries that we work kind of specifically with, because we have a lot of students that come from those countries. And then we have other countries where it's like, maybe we get one, two students a year. So we don't do anything like particular for them. And of course, if they send us an email or whatever, they come to our webinars, that's fine. And to me, this group of people who are using the web accessibility is probably the equivalent to like the students we get from Costa Rica, like went three this year. Okay, great, we're happy to help those three. But now, it's like, we're taking half my workweek to help these three students with that, I also have no actual idea what the number is of people who are using the, like screen reading and captions and things. So I could be also completely under estimating, and there could be a huge amount of people who are using it, but in my mind, I can't imagine that it's like the same as the number of students that come from the US, for example, like, so it feels, to me a little bit of like a discrepancy between the amount of time we spend on it versus, we could be helping students who also need help in a different kind of way. But with something that is still important in our work.	QA

	Cecilia Velasco 18:05	
3.17	**I'm going to talk a little bit about the requirements, let's say, in two aspects, if these requirements that you have from closed captions, or how did you get this information that these are requirement to be accessible? How do you know what the requirements are to be accessible?**	
	University official 18:30	
3.18	Again, just purely like word of mouth, like when I started the team the first time I made a video, someone's like, oh, by the way, we have to someone who had been in the team longer had was like, Oh, wait, make sure we have to caption everything. It's one of those things that like, I don't really know who it started with. It's just that we've all kind of been told, at some point, whenever we eventually have to run into working with this. Make sure you know, this has to be captioned, or has to be this way	AA
	Cecilia Velasco 18:54	
3.19	**from the third-party. Do you know if they have a way to understand what those requirements are?**	
	University official 19:07	
3.20	No, no, I remember at one point I actually had when it came out in the audit that because the third party was one of the things that they flagged specifically, we asked the company that audited to tell us like exactly what to do they need to do to change this so that we're in compliance and they sent us this, you know, technical summary. And essentially, I ended up sending that to our customer service manager who had to send it to their tech team. And then they also provided us with like, here's a bunch of websites where you can read the law change. Oh, which you know, I like opened it was like, oh not that at all, but I sent that over and was like "by the way these are these are what we mean." Because when I first brought up like we have to be in compliance with the new law change so we're like what you're what new law change. I was like, at the time and the third party is a UK company. It was before Brexit so it was also like, you should be aware of this. Yeah, but yeah, but and it really it has been a very big shock to me actually, because they have six or seven other Swedish clients at this point and dozens and dozens of European clients and hundreds of UK clients. And it was like, we were the first piece of people who had brought up to them that like, there's these laws and like you aren't following them. And we, as a university work with you, and we have to follow them. You need to follow them, or we can't use your product kind of thing. And they were like, oh, and again, it took like a year for them to process. I don't know what happened after that, you know, if they ever used those websites that we sent and look through it, or, you know what, clearly, it's taken a long time. Maybe, really looking at it.	QA, TI
	Cecilia Velasco 20:37	
3.21	**Let's say like, you get the results from the audit, and you send all the feedback to the third party is there an improvement, did they take actions actively?**	
	University official 20:55	
3.22	No, exactly. And as I said, there was like, they immediately as soon as we brought it up, fixed the pop card, but then wouldn't fix anything else. And it did it they have finally now I think it was like two or three months ago, they fixed the buddy cards, which it took a year for them to do that, which that's why we were able to start doing the testimonials and actually having them on program pages because we couldn't for the longest time. And that's something that, like every program at the University has asked me like, why can't you say on the website for our program, that we have an ambassador and put them there so that people can talk and I'm like, we're gonna have to use this	

	thing. And I asked them, I think, at least once a month for that year, sometimes twice a month, every time I had a meeting definitely with my customer service manager about an update on this. And it was sort of like they never really had an update beyond, they're still looking into it, and will let you know, when they've looked into it. Because you know, they're a private company, like I don't really know what went on behind their doors as far as doing that. But my impression is that it definitely took a back burner to the fact that when Corona hit the third party, sort of like most competent tech companies like saw that as like, Oh, we're going to jump into the market of like providing all these other services because it used to just be the platform to talk with students. But then they launched a live event platform. And then they launched something we don't even use, but enterprise, which is like this huge, like you can hold a conference inside this platform kind of thing. And so everything became about optimizing those services, and anything else took the back burner. It's the same with like the blogs, I've been pushing them for like a year to make their blogs editable. And it's only now five, no, two years. Now they finally said, Okay, next quarter, we're gonna look at the blogs. But it's sort of become one of those things that they've actually even told me unless we have a lot of customers who complain about something we don't really have time, like, we don't prioritize, it is something to look into. So they were like, your best bet is to have as many like universities, say this to us, and then we'll prioritize it as something to look into. Which also makes me think that we're as much as to me, it feels like we're definitely not fully 100% with the accessibility, we're still doing, apparently more than most other universities in Europe, because nobody else has brought this up to them, apparently. Which is problematic, of course.	
	Cecilia Velasco 23:05	
3.23	**When you received these audit results, and do you know if they were trying to comply with WCAG?**	
	University official 23:14	
3.24	I think so that rings a bell. It was around a year ago, I think the audit. So whatever was in place a year ago would have been what they were looking at, but my understanding and again, because I like and kind of in conjunction with this, but not working with the web daily. And I have no like tech knowledge at all. The like it was always just talked about that, like the new laws, the new laws. <mark>And so WCAG rings a bill. That's like, something that was talked about, but I can't say 100% like exactly what it is, I thought came out recently than Yes</mark>.	AA
	Cecilia Velasco 23:55	
3.25	This audit was something that third party did. They came to evaluate everything.	
	University official 24:03	
3.26	Because we were also switching web platforms, I think around that time. So I think they also wanted to evaluate this now I can't remember if I imagined it was just after we switched web platforms to what we use now. They basically evaluated everything after it got integrated to also see how it matched up with accessibility after the switch.	
	Aitanna Parker 24:27	
3.27	**For your recruitment events, like what type of things do you implement for web accessibility? Or are they just mostly webinars because of its dynamic, right?**	
	Communications manager 24:34	
3.28	Pretty much all webinars because the pandemic webinars and I mean, virtual affairs, which is that it's always we're kind of at the mercy of whoever is hosting the virtual fair	

	because they pay for the platform and when I use it. As far as webinars, we have talked about maybe someday doing like, where it live streams itself to YouTube or like that there's some function where you can like try and have it auto like transcribe as you talk basically as a caption, but we have basically not even touched that yet out of fear that it's not super accurate. And like we, in most of our webinars we want people to be really focusing on like the information and if the Auto Translate is because it's also something that we found it's like, varying depending on your accent, and we have a lot of different people from different countries that work in our office. I think we have a little bit of the fear that if it's not, like transcribing it properly, then we have people who are confused. And then we also have people who maybe don't need the caption, which is like actually, like, I watch everything with captions. I obviously don't need it for a disability purpose, but I just like reading captions. So I would turn it on and just be like, reading along, and then not really paying attention to what the person saying and we offer a lot of webinars like, especially regarding how to apply and like right now with the admitted students next steps applying for a residence permit, it's like really important information that if you get this wrong, it's gonna mess you up a lot. We've, we've kind of talked about it as like, maybe in the future, and maybe if we talk to someone else at another university, who maybe says that they use it, that's something we'd probably like, be like, Oh, how's it going for you, and you know, if it's working for them, maybe we'd look into it a little more. But for right now, we have just a, I haven't had the time and B haven't seen the importance of it enough. Because again, we've never had someone complained to us that like in this webinar, it's, it's not acceptable for me, or they have a problem viewing in some way. They always get recorded, and now at least lightly captioned. I guess we also kind of assume that anyone who isn't able to see or hear or understand in the live event would get the recording afterwards. And hopefully, that will be better if they can see the captions or, or whatever is needed.	
	Cecilia Velasco 26:40	
3.29	**For testing those captions, of course, there is human intervention, right? I mean, you're reading everything that is happening, you don't use automatic tools to evaluate anything about accessibility, everything is like checking?**	
	University official 26:56	
3.30	It's a human [evaluation], like, we watched the video and read the transcript and fix it. We go. Yeah, I didn't know there was tools. But I think if there are tools, we probably also would be a little sceptical as to how much they work. Because in some way, we're using the auto caption as the tool anyway, to start it off with. And, we found kind of little tricks that make it a little bit faster for us, because like, in the beginning, we literally like went through, stopped every 10 seconds, fix every single little thing. Go again. And then now we've kind of realized, Oh, we could search in a Word document, words that are like common and just like delete all kind of thing. And that makes it much faster to go through. And then you can kind of get to the point where you delete the things that, you fix you spellcheck the things that it didn't understand. And then you really only have to like, listen through once to fix the things that are left. But again, that's still if you're not doing like capitalization and grammar and everything. But that's all been like us, figuring that out the course of like the last six months when we've been doing all these extra webinars and everything.	T
	Aitanna Parker 27:57	
3.31	**By hand, I ask about do you feel that there is like a budget for getting different technologies to help assist with that? Or like having consultants and things like**	

	that? Do you know how often that happens?	
	University official 28:10	
3.32	Honestly, probably just whenever someone feels they need it and asks for it. I don't know if there's a specific budget related to that. It's more, there's the general budget for everything we do. And you kind of just asked anytime you need to spend money to justify it, and our boss does that. So as far as I don't know, if I can speak to the communication team, they might have a specific budget for that. But at least in our team, it's more like we've everyone said, I'll talk about like, Should we have a consultant for something and we kind of just discuss what would we use them for? And what do we need it and then asking. Specific, yeah, like consultancy budget. But I think for web accessibility, it would probably, and again, this is a little bit like my guess but because we haven't specifically asked our boss if we could do something like that, but I think he would probably see it as that's more the communication team's job to do that, since they did it originally. And they're also the ones who would do it because we only own very specific websites on the on the English webpage, you don't touch anything on the Swedish and we only touch basically the admissions related websites and communication. It's everything else. So anytime that we want to put something or change something on like a student life page, or before you go or anything like that, we have to talk to them for them to do it. I think it would be seen as like if we're going to bring a consultant and they should be the ones to do it. They can look at the whole webpage rather than just ours. Because then maybe it doesn't, maybe it would need to be helped on other pages, but that kind of thing.	
	Cecilia Velasco 29:35	
3.33	That makes sense. Okay, Aitanna anything else?	
	Aitanna Parker 29:42	
3.34	**What type of things do you know how like sometimes like when you enter your university, you have to like know English for sure. What other things are you assuming that students or people who are reading the webpage would know? That is that like what you can build off of like accessibility or web content?**	
	University official 30:02	
3.35	A lot of information that we could put on the web that would maybe be interesting and useful, but because of this whole, you know, and it's the kind of thing that we said something to the third party at the time, and they were- and it's like, on the backburner, because, again, apparently, we're the only people who've ever brought this up, and nobody else minds, taking them to these other websites so are things like they did show us, I think, something that we could delete from the code to fix one issue that they had for the web accessibility. But then to do that, it basically, again, made people go to this blank website that just said, the third party, at the top and had the blog, and wasn't anything else didn't have you learned branding or anything. And they were like, That's too weird and outside our page, at least. We also do a lot of discussion about, like, the different kinds of users on the website, because of course, from our perspective, we're mostly concerned about prospective international students, but you also have prospective employees and current employees and students and visiting researchers and everyone who could be accessing, so for example, with the virtual tour, when we built it, pretty much every one university in the world uses this virtual tour, it has a button at the top that says, contact us or visit us or something. And it was basically decided we can't have that, because we want to make sure that anyone who goes into the virtual tour is able to find the correct place that they should be contacting someone, because again, it's so	

	decentralized. So we have basically a like, Learn More button, that goes to a website that we had to build for the virtual tour that only is like you only find it if you go through the tour, that basically then says, find out more about, like, what you're looking for. And then it's like, English degree programs, Swedish degree programs, exchange studies, employment, you know, and they like, click on whatever category they're in. Because they're sort of this, I think it's a very Swedish mindset to this, like, Latino, maybe 3% of the people looking at the Tour prospective employees, so they're gonna be so confused, if they click into a, like, contact us about degree studies button, you know, whereas I think most universities would see it as like, of course, the number one people were looking for prospective students. We're gonna build it for that, and people should understand. But not us.
	Aitanna Parker 37:22
3.36	**So interesting. And then really interesting. Yeah, when I asked, this one's maybe a little bit more controversial, because about your scope of work. So I want to know, where you think your scope of work as far as accessibility ends, because I hear you talking about, the platform, and then Instagram, and then like, how much of accessibility requirements should be on those platforms, and within built in to those different systems, rather than like you're having to, like transcribe every time?**
	University official 37:47
3.37	I think it really depends on the platform. Just to some extent, anytime we're working with, a platform that's not our So Instagram, university, anything, I think we kind of see it as our responsibility is to inform you that this needs to be in compliance, or else we can't use it, and obviously not use it, if it's not in compliance, but then it's their problem to fix it, we can't go in obviously, and change Instagram, like algorithms or, you know, so it's seen as, like, I think, I consider it as, as long as we've informed the company that like, this is why we're not using this or can't use this, or you need to fix this before we can and kind of continue to hold that complaint with them a little bit and hold, to some extent over their head that you could lose our business with you don't fix this. That's kind of where, at least my responsibility with it kind of ends, because there's not much more I can do to it. And then as far as captioning, I mean, that is something that we can do. That's something that is our responsibility to do. But I think it's really just trying to interpret with each platform, how much is actually within our control to change this, versus just communicating to them that this needs to be changed. And hoping they do it, basically.
	Aitanna Parker 38:54
3.38	**And then do you know if there's any initiative to get web accessibility certified within your small team?**
	University official 39:02
3.39	Not to my knowledge.
	Aitanna Parker 39:06
3.40	Okay, but yeah, no problem.
	University official 39:08
3.41	Again, I think that would come as like something that the central communications team has to do for like the whole website, rather than just like, because then again, we would be certifying, like these 10 web pages, but nothing else on the website.
	Aitanna Parker 39:20
3.42	**individual personal training?**

	University official 39:23	
3.43	that has never been discussed or never got it	
	Aitanna Parker 39:25	
3.44	no problem.	
	Cecilia Velasco 39:26	
3.45	**When you mentioned about the different users that you have for your websites, have you ever heard about disabled people as a target user group?**	
	University official 39:41	
3.46	Kind of in the sense that obviously, we are all sort of aware that the reason we're doing all these things are to make sure that they're not left out as a user group. But I wouldn't say it's something we talk about, like in our day to day work, you know, that like, oh, you know, but I think it's something that we're all aware or like, in the beginning, when accessibility sort of became this thing that we were all talking about because of, you know, direction from the comms team or whoever that like, the reason why we're doing this is for disabled students as a user group, or disabled users of the website in general, not just students. But I don't think in any other aspect of our work, is it something that we really work with like, except for very small extents, like right now, we're starting to have campus tours for the first time in two years because of the pandemic. And so it's something that I'm training our tour guides next week. So I have like a small bit of the training where I basically talk about, like, if you notice that you have someone who's in a wheelchair, or crutches or something, you need to keep in mind, a kind of warning them that it's a long way to go around campus and a lot of hills. But also keep that in mind, you know, so that you don't, you can go ramps and things like that, but so it's something that's kind of tucked in the back of our mind. But I don't think honestly, we have such a high amount of students that are disabled that like we are in touch about that, you know, that it's something that we're getting those complaints are getting something that we really have to talk about it all the time. And, and it's also something I think in the context of our other work, like if we have someone, I would say more often we have people who contact us and say, like I have this disability, what will happen to be able to offer me if I apply those cases, I mean, we have kind of a standard response, and mostly refer them to the disability services office, because it's also something that like, we kind of know vaguely what services are offered, but we can't really promise anything on behalf of their office and used to be them who kind of evaluate each individual need and decide what could be done or with housing they have to talk to you accommodation, and know what kind of housing would be available for you depending on what you need. So there's also a lot of again, just by the nature of it being so decentralized, and also so much information, like it's not really possible for us to know everything about everything. So we kind of have to do a lot of like, talk to Disability Services, talk to your competition about this, you know, those kinds of things. And, promise that we will, give students the time of day and try and do what we can but it's not that we can promise the moon but we do what we can with our resources, basically. Yeah.	
	Aitanna Parker 42:08	
3.47	That was fascinating. Yes. Fascinating. So much to think about.	
	University official 42:13	
3.48	Yeah. But now it's gone. I'll see if I think of it.	
	Aitanna Parker 42:31	
3.49	Or start analysing, we're gonna send you the transcripts, and hopefully everything will be	

	good. And our notes as well.	
	Cecilia Velasco 43:14	
3.40	the idea is that we are going to be in contact with you not just for the transcripts, but also for the interpretation of everything, because we want to be sure that you are comfortable with information we are including in our thesis. So you can be really, I mean, don't worry, we will be careful. And we I mean, this was basically our questions. Thank you so much for your contribution. And your willingness to participate is really important for us. Yeah. Sorry, I'm going to stop the recording, right now.	

8.5   Appendix 5 - Interview transcript participant 4

Interviewee Role: Senior accessibility lead
Date: April 27 2022
Duration: 52:51
Participant: 4
Researcher: Aitanna Parker and Cecilia Velasco

Item	Transcribed text	Code
	Aitanna Parker 04:41	
4.1	Can I ask you to introduce yourself for the record?	
	Senior accessibility lead 04:46	
4.2	I am senior manager at a large healthcare company. Been there, -focuses on design accessibility. Roughly there a year, most of my other background is in academia and civic tech. From California universities, is working in an accessibility lab and also as a UX designer. On the civic tech side with code for San Francisco, which is a brigade of Code for America as a subject matter expert on accessibility for that brigade.	
	Cecilia Velasco 05:28	
4.3	Wow. What an amazing background.	
	Aitanna Parker 05:33	
4.4	Yeah, really super excited to have you. And then can I also start off with What does web accessibility mean to you? What's your definition?	
	Senior accessibility lead 05:45	
4.5	It is a subset of kind of inclusion, making all digital products inclusive of everyone. So no matter where you're coming from, how you're approaching it, where you are on any digital device, your digital platform should be accessible to you. I see accessibility as kind of breaking a barrier and just making life more enjoyable for everyone.	
	Cecilia Velasco 06:20	
4.6	That's a very nice definition.	
	Aitanna Parker 06:23	
4.7	Yes, thank you.	
	Cecilia Velasco 06:27	
4.8	Currently you're working in the health sector and could you describe or do you have a team? Do you work with a team that is in charge of all the design, I guess, of the website, or all the interfaces with final customers in terms of digital interfaces?	
	Senior accessibility lead 06:53	
4.9	The way we're structured, and this is kind of, in general, patterns that I've seen in the same kind of industry, is this kind of embedded spokes model where there is an accessibility designer or an accessibility engineer that sits on multiple teams. And usually there's a ratio of how that goes anywhere from one, accessibility person for every two teams, every four teams, every five teams. That helps organize. In my role I have roughly five accessible designers who report to me and they're embedded within teams within an organization.	O
	Cecilia Velasco 07:44	
4.10	**So, we can say that in terms of responsibility of I mean- there are roles that are in charge of accessibility as one of their main functions, is that correct?**	
	Senior accessibility lead 06 07:57	

4.11	Yes	
	Cecilia Velasco 07:57	
4.12	Perfect. How do you feel about the commitment of the leadership? How have they supported or the idea about including accessibility as part of the communication of the company.	
	Senior accessibility lead 08:17	
4.13	My current role has been very supportive from the leadership from the top and it is one of the goals of being inclusive, and also having an eye towards social justice within the work that we do to make sure that everything we put out is accessible. That is my interpretation. One thing I want to [clarify] is that I am speaking for myself and not for the organization. What I see as the organization is that it takes a very strong commitment to accessibility, making sure that it is supported around the organization. And that has been almost in every organization that I joined, is having that commitment, and I know am I still connected?	O
	Cecilia Velasco 09:08	
4.14	Yes, yes.	
	Senior accessibility lead 09:10	
4.15	Okay, because I'm getting network error Okay, so you may have left my video but it seems to be reconnecting but as long as you can hear my audio that's fine.	
	Aitanna Parker 09:33	
4.16	No, he is going to come back to you.	
	Senior accessibility lead 09:45	
4.17	Okay. Did that answer the question? I think I did cut off-	
	Cecilia Velasco 09:58	
4.18	Yeah, you were mentioning that this is something that is common in most of the organizations that you have been working with.	
	Senior accessibility lead 10:08	
4.19	My bias might be is I will only join an organization where I feel the commitment is there. Okay. That may skew kind of your results, like I have never, well, rarely worked for an organization where that commitment wasn't there. There has been a start-up that I worked for last year. I mentioned that there is a place that the initial commitment wasn't there, just because the awareness wasn't there. But joining the team there, we kind of brought it on board and the commitment slowly started coming on board, but I have a bias to not join an organization or company that doesn't have it as a commitment.	
	Cecilia Velasco 10:54	
4.20	Actually, now that you're talking about awareness I would like to know, when, when you join at the company that has these kind of initiatives, how is their awareness spread around the team? How is this process of knowledge about accessibility, of course.	
	Senior accessibility lead 11:22	
4.21	There's two prongs. One, I wish that more universities incorporated into the curriculum. And I know some computer science programs and other kinds of boot camps are looking at adding that to their training curriculum as they build up. The awareness is multipronged. So, in any organization, you'll have a training component- just to get the basics. And then another aspect is also looking how to create, this is probably not the right word, but kind of have a culture of inclusivity and accessibility,	AA

	and that is multi prong. So, it depends on the organization, the initiatives they take, most of the time, there are very passionate people within the organization. And they'll lead a kind of initiative that will kind of create a culture kind of bringing that in and humanizing the experience of accessibility, that is not just compliance. And so there are many companies that take this kind of realm is looking at how to go ahead and process them.	
	Cecilia Velasco 12:52	
4.22	**How do you perceive the awareness from different teams that are not technical? Do you think they are also in the culture of accessibility and that you need that support from all their departments in the company?**	
	Senior accessibility lead 13:18	
4.23	So there are different assets of any organization that will look at how much is it contributing to a particular metric, or particular goal of a company and sometimes, there are folks who don't always agree with that. And so I can see, like, one good example at this one company that I worked at, is their goal was mainly conversion. And so anything that interfered with that goal, and this could be	
	Aitanna Parker 14:10	
	[technical difficulties]	
	Senior accessibility lead 14:16	
4.24	Or there might be some conflict, people not necessarily buying into accessibility, or just a snippet of accessibility. And did I cut off or?	
	Cecilia Velasco 14:43	
	[technical difficulties]	
	Senior accessibility lead 15:38	
4.25	If you can repeat the question one more time, we'll give it a try. So now the caveat being in this room is that you may hear my dogs bark.	
	Aitanna Parker 16:06	
4.26	Um, just to remind us, we were talking about awareness from non technical teams or departments.	
	Senior accessibility lead 16:14	
4.27	Yep. And like in any organization, I know. One example I can bring is usually in the marketing and sales team. I know that there was a company where that didn't always come across. And they were more looking for metric for success and meeting their goals. And they always didn't have that clarity of that goal and how accessibility kind of contributes to that. For this, we always bring up the like "1 billion people in the world". And that by making these changes, you could push your metrics and close your goals, your sales goals, to kind of do that, and it will bring more people on board. So that's usually how that conversation goes in that world. It's usually the business, the site, which is always an interesting group to kind of have conversations about accessibility and how that can grow. But I think they're catching on. And it is depending on the industry, I think almost any industry gets critical that it starts to be communicated out.	AA
	Cecilia Velasco 17:28	
4.28	And to align all the, the main target of all the teams with the same strategy, right?	
	Senior accessibility lead	
4.29	Rather having a complex culture of inclusiveness. That is a one goal, that when you	O

	have a culture of compliance, it is just checking off the box and moving on. But once you humanize it, and have the whole cult, the whole culture of the company, because it's very much tied in almost every company that I've been associated with the mission of the organization. There's always that alignment so that's where that's critical, creating that culture and moving away from compliance is critical. And it's a metric and makes things legal. But it doesn't tell a good story. And so the one thing, telling a good story is humanizing it. And knowing that accessibility is going to affect us all, one way or another, even situational, temporary, and permanent copies.	
	Aitanna Parker 18:44	
4.30	**I wanted to ask you about the culture of a company and how that's relayed through the trainings. In regards to web accessibility. You really bring up humanizing a lot. And I want to know what, maybe not specifically, well, what type of content are you, is the company allowing in their trainings, that really humanizes this as a problem.**	
	Senior accessibility lead 19:08	
4.31	One thing I can't talk about the direct content, that because it's proprietary, all this other legal, blah, blah, blah, will come down. But in general, in designing any kind of training, the hard part within development is that the main focus is compliance and efficiency. And within that, it's hard to tell kind of human stories right on the design side, it's much easier to talk the human story; however, in humanizing it within dev is relating it to people. One good example might be is think about the dad coming home from war and they are now wanting to participate in society, they may have had a disability during their tour, which is terrible. But now that they've come back, they want to participate. And how can our product and our platform bring them on board. It now ties it to the fact that the work that you're doing as a developer is helping to contribute to humans. WCAG is critical. It's a checklist, it's compliance. But it never gives a full reason why we're doing this. In the training, we try to pepper in human life stories at humanizing stuff. That is a goal of like, how can that be done? And doesn't mean every organization adopts that? But my personal view, I think, is incorporating more of that humaneness is kind of critical to just make it a personal connection, rather than this is my job. And it's another requirement that someone from above is asking me	AA
	Cecilia Velasco 21:07	
4.32	**Humanizing is a perfect word. And I think I would like to explore it a little bit more. We are familiar with WCAG. We understand it. Also as Aitanna mentioned, we do feel like this is not the only problem. I mean, the guidelines are fine, it's a good tool, but there should be more. When you are launching a product or a website, how do you evaluate this, that is human that is actually accessible more than the compliance?**	
	Senior accessibility lead 21:56	
4.33	From a development process, it's always looking at component based development. Depending on the organization, but if you can build in the accessibility into the component part, and then have that as building blocks throughout the development, it's already kind of baked in. Those little kinds of compliance issues will be built into the kind of component and making sure that components are accessible and inclusive. And then that gets incorporated to the whole larger where if people question why this button has a certain contrast of x, right? Or meets contrast 4.5? Then there's like, it's for access to inclusion. Right? And so having a language of inclusion, makes it easier for people to kind of buy into it. And I don't think I've answered your question, but I'll get to it. So	I, AA

	feel free to prong me here additional stuff, because yeah, I think I lost the track a little bit.	
	Cecilia Velasco 23:09	
4.34	**I am going to help you to go to my point, because it was a general question. What I want to understand, how do you use, let's say, the evaluation of your products in terms of accessibility for further improvement? Right, like, it's something that you reuse, like, we didn't get this compliance, so we are going to get better. Is that a process? Is it something that is set up in the company like this improvement.**	
	Senior accessibility lead 23:45	
4.35	Normally, there are different facets. I can talk about a project for a community college in Los Angeles, and there was a specific deadline that needed to be met. And so the organization was thinking, not everything we put there will have the best experience for people with disability, it will be compliant as much as possible. And then we will add to our backlog, things that we will improve and commit to. That's the happy path, right? Then the reality is, depending on the organization, you never get to the backlog item because now you move forward, right and you release something in a great company, you iterate and you start to correct. The one thing is never introduced barriers as you're going forward and releasing something. Now, what I say is that you have met most of like A and AA for WCAG as you're putting something out there, and then you kind of revaluate. We may fast follow in releasing something that is not great. It's not a barrier. And we will quickly come back and follow through with it. So the issue is, once you put something out in the world or launch it, like let's say a website, or any kind of platform, things will start to come up, and items will be pushed back. So the one thing is having also an accessibility person there to advocate "No, no, you cannot let this slide." And that's one role that I had been in organizations have committed to this. I am like, it may not be in the second release. Or maybe the third release is what can we commit to that. But these two things need to go quickly. Because we did let it slide. And we're not creating a barrier, but it's crappy for people that say, who are visually impaired, or cognitive overload. And so the one thing is, let's kind of manage and release things as quickly as possible, because there's a business need, but making the commitment that we iterate on top of that, and so that commitment is becomes a struggle once it's live, as I was saying, but having that accessory person there to advocate for those things to be keep coming up, and not let them fall to the wayside. Because they will. Depending on the organization, and how quickly, they want to move, that's usually what creates some issues.	R, O
	Cecilia Velasco 26:31	
4.36	**When you are starting this kind of projects, and you are in this phase of gathering requirements. How do you handle accessibility as a requirement is a how do you is it like a functional requirement? Or is non-functional requirement? And maybe you can keep it for later? How is that process?**	
	Senior accessibility lead 27:03	
4.37	The assumption, let's say, at a forward thinking company, you have a design system built in, and that design system has those components that are accessible, and that are baked in. That's where you want to be on that so that you can talk about experiences of combining these components, and seeing how they go. So normally, when some new project comes or initiative is being at the table, and just being mindful, when you start hearing, what I look for is we're going to stick to the design system that we've implemented. Let's say design system X, then we know that, like, let's take Microsoft,	D, O

right, they have a well defined design system with components that are embedded. Let's stick to that. And there comes a project where- it's not in design system. So, okay, those items where we need to start looking at and how do we incorporate and have the accessibility built in baked in at the beginning. So one thing that many people are looking at is, virtual reality there's a meetup group in, actually, I think they're in Japan, but they meet everywhere, but the one thing is, how to be on the forefront, start identifying things that we need to be mindful, just because it's virtual reality, but how it's impacting accessibility. And it's, it's new, it's maturing, and being there at the beginning, is having the conversations and having talked about accessibility in that process, so that it's like, we did this for the web, we've done this for native. We should not forget that this is difficult. It's new, the lessons we've learned. And so and that's where I get back to that culture, where once you have a human story behind it, it's like, "Hey, I can't forget that, " will stick more with people traditionally. Then kind of checklists, right, so that when they're talking about virtual reality. Think of my uncle who has diabetes and has memory loss like, how can we make sure that person is still able to participate in this new technology, without hampering it or diminishing its newness?	
Cecilia Velasco 29:27	
4.38	**For that point that you mentioned, and it's a great example, a virtual reality with breakthrough technology. In these kinds of scenarios, do you use WCAG as a source of requirements or maybe disabled people directly or how do you gather those requirements that are not in the tools as like the normal?**	
Senior accessibility lead 29:59	
4.39	One is if it's a new thing is thinking of the experience. And then I think of it more as the person is going to be using it. What is that going to look like? And I usually don't start off with WCAG. That's my process is not to start with WCAG, that's like, the low bar. But thinking of an actual person using it. So what would a blind person experience virtual reality? The one thing is, I'm not visually impaired, but who can we include in this conversation; bring into kind of like, understanding their experience. And like all people, there are those folks who will hate it. And those people who are excited to explore, knowing it's not perfect. And that's where they'll be kind of like "Oh, you have a problem here, or you have a concern here." The one issue is not- the developer not seeing a stifle that this is an added feature that we should consider. And like one thing of design, and even in development, I've seen a lot of great engineers and developers who see it more as a challenge, and an obstacle. Those folks who see it as an obstacle, I have a concern and that's where we have a kind of coaching and kind of like, this is an opportunity this is where you can shine and exceed, and challenge yourself. Rather than thinking as an obstacle of like, why do we have to do this for like a small set of the population? And that's not where and hopefully that answers your question.	R, I
Cecilia Velasco 31:46	
4.40	Yes, definitely interested,	
Aitanna Parker 31:49	
4.41	**I'm interested in how you deal with feedback. If you ever, like things have already gone, they launched, they're out there to the public, and then public has some different responses. How does that then change or how do you adapt to those changes?**	
Senior accessibility lead 32:08	

4.42	It will depend more on the product side of the house, and they make a determination of the necessity of what based on feedback, how they rank it. One thing that they will bring people in, is they're getting feedback from people with disabilities, that are having a hard time accessing a particular feature. That's where they will kind of bring in an accessibility person kind of like "Hey, can we understand this, what's going on here," and then we try to map it to an issue that may be in the backlog already. Or something we have a bigger conversation like this might be a concern going forward, that we may have to fast follow and correct it. I know, like even at *…*, we would do this is. We were launching something. And being mindful that we kind of got feedback. But also push whenever we were releasing something, mainly to students is also encouraged students with disability tests this out, try it and give some feedback. So we were active in kind of recruiting people to kind of like, be vocal give us that feedback, mainly in certain communities, that we wanted their voice to be amplified. Because then that'll come in as feedback. One thing we never want to do in any organization is just having to make sure the voice of the User, voice of the Customer, voice of the Member, come through the feedback that's authentic. And so we can use that to kind of also push the needle within the organization.	R
	Cecilia Velasco 34:00	
4.43	**I'm going to use that for the testing phase. When the products are launch or before that, how is the testing of accessibility capabilities?**	
	Senior accessibility lead 34:15	
4.44	This is a difficult part. There are very few companies out there that recruit people with disabilities. And as an any organization going out there and looking at increasing and leaning on these organizations to incorporate people with disability as part of the population that is part of [testing]. There's a major company, that is actively trying to do that. The difficult part is the identification [of disabled testers]. And so one thing we have is one, not necessarily pigeonholing people. And knowing that, you know, we will, like I would say, in this company of like, we want a population that represents the US or represents whatever market we're calling it, right, or any kind of group that we're kind of catering to. Give us that demographic, and we propose that information. And they try to source that; however, they find it a little difficult. So, what we don't want to do is constantly going to a population that we know and trust- which we do internally, there will be folks that we kind of know: You've been a screen reader, you're blind? Can you just kick this around and see what that is? That does help. But well, we want more of a general population across the US. So the one thing we try to be mindful of, and even like one thing within California, there's, you know, the mixture of Northern and Southern California, and making sure we have kind of that cross section. And even knowing that people aren't the same in general, but also getting that kind of cross around the US. made the experience of someone who's deaf in the south is very different from someone who's deaf in North Dakota. And so are we being mindful of that? Are we understanding that, and so let's increase the population, and go for that. The one thing that we've heard from some folks who will fill out a questionnaire, they don't want the [disabled] label associated to because they feel like if I say, I'm blind, and that's going to limit what I can test. [Recruiters] are going to be like "we don't need a blind person for that." We would do that with that ethnic group, either, but well, maybe we do. But it would be kind of like, nobody wants to be pigeonholed. And so, one thing we've been looking at in identifying is just telling us a little bit about their technology. And so, one question might be is, we don't know, it depends on the person	

	how you're approaching it. We were never explicit, like, ask, Are you blind? Are there other tools that you use to access the web? " I use a screen reader." And they can self disclose without putting a label onto themselves. And so let's move away from the person, but let's look at the technology that they're using to access the web, the internet. That whatever platform mobile app and stuff like that, that's where we're looking at trying to push some of these companies to incorporate those folks into their kind of pool of applicants or of candidates for testing. The hard part is going to the same well all the time. And you're kind of like I know what this person is going to do. Because you've been working with them for a couple of years. And it's time for a bigger pool of folks.	
	Aitanna Parker 38:24	
4.45	**I want to know if you've gotten pushback from some developers, because we've heard this conversation in the literature, usability versus accessibility. Has that been some of your experience and what is your response?**	
	Senior accessibility lead 38:41	
4.46	From developers, the pushback has always been, I actually have a person in mind, as I'm thinking about this, this is a standard within the industry. Certain search engines or fruit companies have been doing this, then we should be doing the standard, and you're just deviating to create more work. This really isn't going to prove this for anyone if you're actually making it harder for those people can see. I've gotten that pushback. One conversation we have is just because large companies are doing it doesn't mean we have to quickly follow their example. This is an opportunity for us to look at carving out something new, and then reaching out to the deaf community and saying, Hey, we see this pattern and most of the time, we will kind of have people who are supporting it. Like I know within The Bay Area. And I know it's a bubble. But in the San Francisco Bay Area like one Facebook, there's a great accessibility community within the development there. Were publicly, they don't publicly indicate the accessibility issues that they're addressing. But they're addressing the kind of backlog items within Facebook that they're trying to correct. And so if you ping a developer and I, this is usually what I've said to this person, as first paying a developer within Angular or something and saying, Hey, I'm getting this request, have you seen something similar to this? And they're like, yeah, we've seen it. And we're kind of trying to address it. But it's been low priority, do you want to take it on, and kind of open source it? And so that's where we have seen most of the kind of buy-on is in the open-source area where you can have some people take it on, and have been helpful. The main goal is taking that push back and saying, we're not necessarily deviating, we're just trying to augment or improve what other companies are doing. Just because they're not doing it doesn't mean we can or should. And so that's usually the push that we kind of look at, going forward, but there has been a lot of push back. <u>And on the question about usability and accessibility, I would say usability will trump accessible, because if your product is usable, and if you mean usable by everyone, then you're right. We really don't need accessibility because you've solved it within the usability of your product.</u> So	
	Aitanna Parker 41:47	
4.47	people, we love to eat quite questions. You see the other question because I have one last question.	
	Cecilia Velasco 41:53	
4.48	And I have so many questions. We don't have the time. I believe, I could stay the whole day. But I know your time is limited. So I will pass. If you have another	

	question? Do you have?	
	Aitanna Parker 42:09	
4.49	Um, no, I forgot it. To be quite honest. And I didn't write it down. I don't know what oh, sorry. Yes. He says one last question. Um, regarding the push and the culture of inclusivity. We also found in the literature that there needs to be obviously a budget, but specifically, what should that in your experience that budget be allocated towards in order to maintain the web accessibility?	
	Senior accessibility lead 42:41	
4.50	So there's a happy path, and this is the reality, right? So in any organization that I've seen almost everyone is the budget has always been dictated by the stick versus the carrot. The stick is avoiding litigation. And kind of like compliancy kind of issues have always been tied to kind of budget. And so that from education to the public sector, is one thing is, where can we allocate money to avoid? And this is not every organization, but in general, what I've seen is to avoid litigation, from kind of the business side of house, because they're the ones who kind of control the money. So they will be kind of like, yes, they're the metrics that we want, improve people's lives and want to have a great experience and stuff like that. But part of that budget, part of the consideration of that budget always comes to compliance. And so that has always been my favourite. And it's the difficult because we should not that should not be our kind of goal, but as I've known people who I've kind of hang out with and have conversations kind of in the same industry is P4, if that's what's going to take to get funds allocated. Why not? And that's one process where the way you get funding is compliance, and avoiding litigation. Yeah, not my happiest, but it'd be interesting as you guys interview folks. That response to that because I'm always interested and every organization how they allocate funds. There have been In things that I've seen is, sometimes that allocation comes from a very passionate person within the organization. And that usually is tied because a family member, or someone close to them. And it may not be disclosed publicly, but their child, their partner has disability. And they are like, this is important to me. And I want us to put resources. And that is more of the character, and kind of, but it's also coming from down from above down, and which is amazing, because, but it shouldn't be just because your, your relationship to a person, however, that has another aspect that I've seen where that commitment has been strong. However, it's also transitory when that person moves on. And new person comes in, it doesn't always guarantee a kind of stable funding source furnish?	
	Cecilia Velasco 46:02	
4.51	**Yes, of course. And last question, I promised. There was a moment where you were talking about lessons learned, I assume there are lots of lessons in the projects, including web accessibility, how is that knowledge and those lessons managed, in your experience.**	
	Senior accessibility lead 46:30	
4.52	So, from a development side is to document them. And to make sure that we don't repeat them in any way. So if we, let's say, had issue with a chatbot. And there was an accessibility issue with it, if we start building out that component, and we realize, oh, we ran into this issue that we didn't catch until it was in the wild, right, public loves seeing it and interacting with it, then we can bring it back in to the definition of the component, and specify it in the documentation. So that starts to feed. It's very much that kind of system thinking of like, Let's build it into the system documented into the system. And once we've kind of done it once, then we don't have to repeat the same	AA

	error. You have to have that strong commitment to design system and a style guide. In development, I find most developers appreciating that because they want the efficiency, and they don't want the rework. I call of how quickly can they move in their development, knowing it's documented there, creates that aspect on the front end design is also documenting it. It doesn't feel so abstract. Arbitrary. Like we did it over here, we did it that this is a pattern. And this is a component that we want to kind of keep moving forward. So having it be documented once and moving on.
	Cecilia Velasco 48:08
4.53	**Just as a follow up of this question. When you mentioned patterns, I was thinking and that can be also translated into the implementation or the design, let's say have you used design patterns that are reusable? I'm thinking that maybe if you identify a disability that you didn't consider before you can create a component and that component can be reused for further projects. Is that the way?**
	Senior accessibility lead 48:46
4.54	correct, so any kind of pattern or component, it's built for reuse, and that's where the efficiency comes in. By having a documented in this one, then that's one goal. What sometimes happens is, if, let's say we have a stable chatbot kind of component, and the patterns around that shot button, how it's implemented. And then we look at, oh, we're going to upgrade and do something different is sometimes the disconnect of bringing the knowledge back in, if what we want to make sure that happens in the new one. So what we, if a new product comes in, do we have parity in the definition of the pattern and the components so and again, think of them but like colour, contrast, the voice and how other aspects and the speed of the language comes through the reading level of the language that we're using. Well we have that parity in the new system going through because we have it already documented here. Happy path, that's the way it should be. Sometimes people will want to move quickly. And they're kind of like, let's move this way. Sometimes you have some control and voice into that. The one thing by having that culture within the developers, they're like, I want efficiency, I don't want to rework. In the old one, this is what we did. I know this is going to come back, and I cuss a lot. So I'm trying not to cuss here, but it's not gonna bite. Right. And so they will learn and that culture of like, hey, it's inclusive. I know, we've dealt with this in the past, this is something new, make sure that parity is there with the old system, or the new system that has built a lot of great features in it. So that's a test. Perfect, but
	Aitanna Parker 50:53
4.55	thank you, thank you so much. That'll be the end of our interview. You're amazing. We will send you the transcript, of course. And we will also use aliasing pseudonyms, and any other identifiers, we will send it to you and ask for your approval to use. CC any last comments, thoughts?
	Cecilia Velasco51:12
4.56	No, we are really happy. That's all I can say. We have learned a lot from this interview, thank you, because your experience is extremely valuable for us. And I think for all the people that can read our master thesis, I must point out that I forgot to mention in the consent that we are going to use pseudo names. And of course, we are not going to reveal your identity or companies or anything like that. We are looking for experiences and to contribute a little bit with this field that is so amazing. So thank you so much.
	Senior accessibility lead 51:48
4.57	Thank you for letting me know when you'll be publishing.

The "I" appears in the rightmost column aligned with row 4.54.

	Cecilia Velasco 51:53	
4.58	Well, we need to complete our work in June, one way or another.	
	Aitanna Parker 51:59	
4.59	We will also get a copy of our thesis as well. We don't know if we're going to publish it for the world. But of course, of course, because	
	Senior accessibility lead 52:08	
4.60	it's always good. From our end to have that research. Because we do a lot of research internally, as you were talking about like testing and all that other stuff. And always have been research and literature out there that also some changes that we're making. Any changes to our culture is really important. So that's why if you share it and even put it out to the world. All right.	
	Aitanna Parker 52:38	
4.61	Much so great to know. Yes.	
	Cecilia Velasco 52:40	
4.62	Have a great day. Thank you.	

8.6   Appendix 6 - Interview practice participant 5

Interviewee Role: Digital accessibility manager
Date: April 28, 2022
Duration: 42:13
Participant 5
Researchers: Aitanna Parker and Cecilia Velasco

Item	Transcribed text	Code
	Cecilia Velasco 00:14	
5.1	**So in order to have some context about you, your role in your organization, could you please introduce yourself for the record and let us know, what do you do in your organization in terms of accessibility?**	
	Digital accessibility manager 00:34	
5.2	I'm a digital accessibility manager. I've been with the company for four years. Although I started as a QA tester, and then I became a QA lead, and then I transitioned into digital into web accessibility, and a full-time position. That was quite organic. And I don't think everyone gets the opportunity to kind of transition from different disciplines to another within an organization. But for me, it was quite a unique opportunity that I just took. And the way I started with accessibility, basically being a QA, I was always looking to grow into my role trying to find new ways to add more skills to my job box. And I just accidentally found out about accessibility and the possibility of me being able to actually use my QA skills in accessibility. And I felt like, once you start learning about it, and what you can do, you can't just unsee that. So that's what I've said it was quite organic. And I just started learning more. And then I created a full time position for myself. What I'm doing right now, I'm not hands on working on projects, as I did before, because I'm the one who kind of created this program across the organization. So I created this new position that was not there before, across multiple offices, and then I started focusing on how we provide accessibility solutions to our clients. And then kind of focused on accessibility processes, basically, how do we collaborate with UX, with design, web development. So I was no longer hands on specific projects, but more like top level overview. And, of course, this being like a new service for the company, it was important to have, like an idea on how do we scope this? How do we provide the services? How do we integrate them? And also something that's very important for every business. How do we recreate like a new stream of revenue, because we want to provide the services, we also want to make sure that our people know what they're doing. But we also want to team with a small, small team of specialists. So yeah, this is basically what I've been focusing on for the past year. And yeah, I think, let me know if you have any questions. But the bottom line, it became like a passion project, then it became my job.	O
	Cecilia Velasco 03:47	
5.3	**But it's a great experience. And so how, how was the commitment of leadership when you were creating this new position, and this new way of seeing the things within your company?**	
	Digital accessibility manager 4:03	
5.4	So I wouldn't say it was easy. I feel like every time you have to kind of convince someone of accessibility in it, Claire Cartwright, right? And this is something that I learned. For some people, it's as easy as just knowing about it. And being like, okay,	AA, O

	yeah, of course, that's just the right thing to do. But for some people, it's about the fear of our clients not being involved in a lawsuit. And for some people, their readership is all about revenue. Can we create money from this? Yeah, sometimes it's not pleasant to do that. But for me, it was, okay I need to just think of the bigger goal here. So it was challenging overall. And I had to kind of use different types of business cases for certain people. But I focused on the people that were having a certain influence in the company and cared about it. So I didn't waste my energy with people that didn't really want to get involved or help support because leadership buying is everything. If they don't agree with this or support the teams, it's just not gonna work.	
	Cecilia Velasco 05:32	
5.5	**When you say you identify like key actors in your organization that could help you to promote this idea, were they in different departments? How do you understand the collaboration between different departments to promote accessibility?**	
	Digital accessibility manager 5:55	
5.6	I started very small. So first, I just gathered a team of allies from teams that were helping in the production side. So for example design, development, I found some people that were not in executive positions, and they were just maybe seniors or leads, but they were still working on projects and they were passionate about this. So I found these people first, and then I just connected with them. And then we start exchanging ideas. Because obviously, me being from a certain discipline, I can't really think as a designer or as a developer. So their input, first of all, was super useful. Obviously, that was also volunteer work. So it is very difficult to find allies if they don't have time. But yeah, I was quite lucky for a while. So I did have a team of volunteers that helped me. And then I kind of built from there. I went to operations, the like the person who is leading operations, who were like, a level up, then what we, our job levels were so yeah, just from there trying to kind of mingle across the company, and try to find people and pitch them the idea. It's not easy, obviously, when you also work remotely. But sometimes, yeah, people just spread the word. And you will find someone, after all, who could be interested in helping with this	AA,O
	Cecilia Velasco 07:38	
5.7	**About this knowledge, it's really important something that you said. Once you start to know about accessibility, you cannot just lay it aside, you keep thinking about that in every situation. How was the process to spread this awareness in the different levels and different roles of your company?**	
	Digital accessibility manager 8:11	
5.8	Yes, that's a very good question. I feel like it's still a process. The way I did it, I focused on doing specific training for people. So for example, I built a master presentation master document that it was kind of good to know, for everyone for all the departments. But then every time I would get, for example, I would set up a workshop or a training with the design team, I would kind of tailor made the presentation to kind of be specific for them. So try to be a bit more intentional, because it's a lot like first time when you start with accessibility, you'll see like, a lot of guidelines, so many things that you have to consider. So what I noticed is that people get easily overwhelmed, and they say, Oh, this is too much, we can't do this. So the way I realized that is working in our company is trying to be more	AA

	intentional, making sure I prioritize the things that are actually important within the guidelines, give them resources, but also encourage them to focus on progression and not perfection. Because yeah, this is what I feel like for me, small incremental steps are all that helpful than trying to do everything at once. And it's actually not possible to be perfect in accessibility. Unless you have like, a team of specialists or	
	Cecilia Velasco 09:53	
5.9	resources, right,	
	Digital accessibility manager 09:55	
5.10	exactly.	
	Cecilia Velasco 09:56	
5.11	**So with all these, it is really interesting that you said it is like an ongoing improvement process. Have you set up this kind of improvement process within your organization? Or how did you evaluate and improve the products or the websites?**	
	Digital accessibility manager 10:24	
5.12	Yeah, I mean, it's a bit chaotic, to be honest, because of our type of company. It provides services to clients. So we don't have our own product to say that we sell to customers. So it's a bit different, I think. You will see, for example, when the company has a product that sells to customers, you can engage with the customer, there is another process you can do to improve accessibility, whereas I see like, maybe five new projects per week, so it's quite a lot. So it's very difficult to measure success across all our projects. So the way I found it useful to do is try to, for example, bigger client, or multiple clients that I know for a fact that all their projects need to be accessible, and then try to improve that process. And then take those learnings and then apply them to other clients. But I don't have a perfect answer for this, to be honest, I'm still trying to figure it out, for now, and just try to improve processes for a client and then try to scale up as much as possible. But like I said, it's quite different, depending on the company and the services that they provide.	QA
	Cecilia Velasco 11:45	
5.13	**When you talk about reusing those lessons to learn, how do you do that? Do you have any specific strategy for knowledge management?**	
	Digital accessibility manager 12:09	
5.14	Yeah, so I think, to kind of give you a bit more overview, I have more overview on not what the designers or developers are doing. But because I lead a small team of specialists, we make sure that we're involved at the right time of the process. So for example, we get the project, I make sure that someone in my team is involved at the beginning of the project. And sometimes we might have a very creative project. And we might need to just jump in right at the beginning when they create the concept and say, Oh, this is not gonna work. So every time I get my eyes on a new project that's coming in, I make sure that I involve someone right at the beginning in the discovery phase. And then during the design phase, making sure that we do the design reviews, right before it moves into development. And also right before we do a client review. So for example, if we have, the design team has a meeting with the client, and they have feedback, we want to make sure they know we have addressed accessibility issues for us because it's going to be a bit of a mess. So there's this kind of small thing. And then during the development, we have a full audit that we perform sometimes on the page sometimes on specific components. And yeah, at	O,R,T, QA

	the end of a project, it depends if it continues, or it's the end a bit we create a report. We have specific audits, that we kind of reuse across all the projects that we created internally, so we don't use an external service. And yeah, I'm not sure if this answers your question, specifically, but to kind of give you an overview on how what I have my eyes on more in terms of how we measure progress, and also how we, like you said, how we take the lessons learned? Because also using the audits, obviously, the guidelines are very much the same for every project, but sometimes it's quite different. But we noticed that because we keep a specific framework of components and UX or design and if we in our accessibility audits determine that we find the same issues, then we can escalate that with the design team. And if we find the same issues on multiple projects that are accessibility related they can make some changes, if that makes sense?	
	Aitanna Parker 15:18	
5.15	**Where was the company with web accessibility before you created your position?**	
	Digital accessibility manager 15:30	
5.16	The company was not doing well with accessibility before.So I would say that we are still quite young, in the industry. And yeah, that's it. That is what you said, very minimal.	
	Cecilia Velasco 15:51	
5.17	**Are these audits, that you were mentioning, based on a specific standard?**	
	Digital accessibility manager 16:08	
5.18	We created it based on WCAG, 2.1. And then sometimes we modify them because our clients have their specific accessibility guidelines. And then if we have specific requirements, for example, oh, we need to also take a look at the specific standard in that country, for example, so we double check to see if there's something missing or something needs to be updated. But yeah, the main one, the master one is WCAG 2.1. We keep improving it also based on best industry standards, so trying to make it our own. And also best practices recommended by W3C in general. So across we've been building and improving on this audit for a couple of years now. And it's, it's looking very extensive right now. And yeah, I'm very proud of my team for doing that.	T, TI, QA
	Cecilia Velasco 17:13	
5.19	**Of course, a huge amount of work. When it comes to the requirements phase, usually accessibility is considered a non-functional requirement. Like it's not something that usually customers request. But how do you include all these accessibility features in the normal requirements of the customer?**	
	Digital accessibility manager 17:53	
5.20	Yeah, again, this is also very different based on the company. Like I said, I'm involved in, I work with account managers, and people that are focused on growth. And they are in direct contact with clients. So for example, I had a couple of workshops with them, presentations and meetings, and I tried to set up a process with them on how they need to get me involved at the right time, so we can embed accessibility into the requirements. And the way I did it is we select these clients that are either from a specific part of the world, or they work in a specific industry, because we work with so many clients it is very difficult for me. So, I take it progressively. So we selected a group of clients that work in a specific industry, or in a certain part of the world, such as the US or Canada, where accessibility	R,O

	requirements are more and more recognized by law. So this is what we prioritized, but also Europe. And then, yeah, we started adding accessibility requirements by default for those clients. So every time we get any sort of website, or web based product, it is already in the statement of work that we will implement accessibility. And that gives the client the opportunity to say, Oh, we don't want that. And then we remove it if the client says that they don't want it, but it's there by default. And that has been a process on its own. But for now, this is how it's working. And it's been, it's been going more okay than before because it's very, it's up. So I don't know if you're familiar with the way that some agency agencies work, but they have to kind of go through the whole process of pitching and proposals. And usually they have maybe an hour or two to meet with the clients and talk to them about our entire list of services and try to make sure that they are impressed and make sure that all the information is in a presentation of 100 slides. So usually, what I noticed is, oh, I am if I'm getting involved in that, and I add some slides of my own for accessibility, they usually get cut off, because that's not important. So yeah, I discussed it with them, I said, let's add this by default, and give the option and plant opportunity to opt out if they want to. I feel like it's not fair that you always cut off my slides because it comes as a low priority when compared with our other services.	
	Cecilia Velasco 21:01	
5.21	**Yeah, it's hard. You need to convince everyone. This is something that is a priority and needs to be there.**	
	Digital accessibility manager 21:11	
5.22	Yeah, it's, it's difficult sometimes. Because, yeah, my bet when you add something new, which is actually not that it's accessibility has been around for a very long time, but new in, in the work environment that I work in. When people are under pressure, they need to prioritize certain things that are important for a client. I often see that accessibility comes quite at the bottom of it. And yeah, I need to step in. And sometimes you need to fight some battles.	O
	Cecilia Velasco 21:50	
5.23	**Yeah, I was actually going to ask you about that. There must be situations where you need to say, okay, we can keep it like for a second version or keep it in the backlog. How do you usually manage these kinds of situations to avoid accessibility to leave totally out of the scope?**	
	Digital accessibility manager 22:15	
5.24	Yeah, I try to get involved with as many people as possible. From the project or the client as well. I don't like to be the only person who makes the decision. Because sometimes they think in some teams, they will think that, oh, we have union, the project. So yeah, the project is going to be accessible, which is natural. If you have someone in a company or company with accessibility in that title, that doesn't mean that your products are accessible. You need to really collaborate with all the departments. It is everyone's role to implement accessibility. I'm just there to consult, optimize, measure progress, and help prioritize work. So yeah, I tried to include everyone and tell them the facts. This is what happened, what's happening, this is how much time we have. This is my suggestion. So I present that to them and try to get more people involved in the decision. Another thing is I help them prioritize. I feel like, okay, let's solve these two issues that are very important for accessibility, I have a higher priority. And for example, if we have an issue that	O, AA

	happens on main user flows, or it blocks on an activity or a task, then I will prioritize that and then say, yeah, we can resolve other issues in other iterations or tell the client that this couldn't be covered in that iteration. So prioritization and collaboration.	
	Cecilia Velasco 24:12	
5.25	**When you're working in the design phase, we know that there are some challenges with designers because maybe there are some features of the products or websites that are nice, are beautiful, but maybe they are not accessible. Have you found these kinds of situations and how do you handle them?**	
	Digital accessibility manager 24:58	
5.26	I think for me, it also depends on the client, and the type of industry that they are in. So for example, if it's someone in the medical industry, it doesn't really matter if it's beautiful, it needs to be accessible no matter why they have such a wide range of customers. And there is no discussion with a designer, especially if it's in if it's required, if it's in a statement of work, it should be pretty straightforward. If we have a more creative project, and yet the client really wants it to be accessible and we have, for example, like we do in our company a lot of immersive web we call it and that means you're going to an experience, and it's like an immersive environment, you click it, its web based, it's like a game within a web platform. So those kinds of things usually have lots of accessibility issues, yet some of our clients do want those experiences to be accessible. And one way I found that works well, for those types of projects, specifically, is to provide accessibility features, which takes in a bit from the gaming industry. So for example, you have an immersive experience, you can have the ability to turn off animations, for example, or move to a more linear experience, or change the theme and the colours of the experience to make it a bit more visible for you. And those are not specifically WCAG recommendations. So I wouldn't say that a type of project is compliant. But it's more accessible if that makes sense. Yes.	D
	Cecilia Velasco 26:53	
5.27	**And it is, I'm just thinking that what you're mentioning is an adaptive interface to have dynamic ways of showing depending on the user. Correct?**	
	Digital accessibility manager 27:10	
5.28	Exactly. Yeah. Trying to also kind of compromise and keep the creative part of it, but also giving the user more control over the experience.	
	Cecilia Velasco 27:26	
5.29	**When it comes to the testing of products with accessibility features, how do you test the compliance in the result? And how often do you test?**	
	Digital accessibility manager 27:58	
5.30	Yeah, so like I said, we do have an audit that we follow. And a good number of tools that we follow as well. Also, including automated tools. And then we do some end user simulation, which means testing with the keyboard testing with a touch device testing with screen readers. And then quite a couple of manual tests, obviously, it's, it's part of it. Following the guidelines, we have a team of specialists who focus on that. But we've been looking into trying to involve an external service that includes people with actual disabilities testing our products. So the difference would be that, yeah, we take a look at the guidelines and try to make sure that all are implemented with our team of specialists. But then we also want to test the	QA, T

	usability because it's very difficult for us to actually simulate someone else's experience. And obviously just testing with maybe a small group of people doesn't mean that everyone will access the product in the same way, but kind of gives us a bit of yeah, just overview on what they are experiencing because I saw people using screen readers and we as we are not able to use screen readers at the same weight and volume as someone who used it for their entire life. So yeah, quite different.	
	Cecilia Velasco 29:45	
5.31	**Have you thought about including disabled people in testing?**	
	Digital accessibility manager 30:07	
5.32	Yeah, so we are actually in talks with an external therapist who provides these kinds of people to them. This is something that they do on a regular basis. So it's more like, if you know about user testing, they don't follow accessibility guidelines, they may be aware of it. But they will just test a certain flow in your product, for example, and then tell you their feedback.	T
	Aitanna Parker 31:03	
5.33	**You basically created your own position, and I'm hearing so many different resources and things that you've implemented, and it just keeps growing and growing to be inclusive with accessibility. And I want to know what you think has been the driving factor of your company, giving you the leeway to accumulate resources in order to keep growing like you have a team, you have tools, you have an internal audit system, these are all amazing things. Hey, what do you think allows that to happen to come to fruition?**	
	Digital accessibility manager 31:39	
5.34	That's a very good question. Honestly, from my side, it's a lot of hard work and dedication. From the company, it was the flexibility and trust in what I'm doing. Now also very transparent. So I create business cases. I create annual reports, I give them numbers, I share any sort of good feedback from the clients. And obviously, from leadership, when they see these kinds of things from a new service that we have, for them it's a no brainer.	O, AA
	Aitanna Parker 32:25	
5.35	**What type of things to be on your team? What type of things do you look for, whatever do the certifications do look for? Projects that they've included in a web accessibility? What do you look for?**	
	Digital accessibility manager 32:39	
5.36	My team was actually created from internal people. Because obviously, this being the new service that I created, it was very difficult to get approval for new hires. So I identified two people internally who started as allies, and I started training them myself, and then provided them with some courses and resources that were relevant for what they were doing. And I think what was very, very important for me, and for them to kind of succeed in this was a lot of productivity and taking initiatives. And also kind of be a little bit like me, in terms of at least, this is what I told them that sometimes you have to have uncomfortable conversations and telling people that telling people no! telling people that this is not accessible. So yeah, it was not easy. Yeah, my team is quite small. We are four people, but very valuable. And they worked a lot. So	AA, O
	Cecilia Velasco 34:02	
5.37	And you already have a presence in the organization. This is a great achievement. because, if there is no one responsible maybe the initiative is just not taken	

	seriously. But right now you are there, like in presence is your function and your responsibility. So it's a great achievement.	
	Digital accessibility manager 34:31:00	
5.38	Thank you. Um, I appreciate that. And yeah, I agree. I think that, for the longest time, it was a passion project. And man, it's a passion project. It's like, oh, it's there, but we don't take it seriously when you actually have someone working full time. Yeah, it's taken a bit more seriously. And I feel like this is also what I see because I follow a lot of people in the accessibility community. ==I see a lot of people that, again, they are front end developers, but they are kind of working on accessibility, but they don't have that in their title. And for me, it was very important to do that because my team is looked at and taken more seriously when they have this in their job title==. Definitely.	O
	Cecilia Velasco 35:21	
5.39	**What are the main lessons learned in the whole project of incorporating these roles, this new structure in your organization?**	
	Digital accessibility manager 35:37	
5.40	Oh, yeah. Well, first of all, I think it's more like a personal one. And it is, even though you do something that you're very passionate about, that doesn't mean you have infinite energy to do it. Because, yeah, I had to take care of myself sometimes. So that anyone who wants to do that, to take it easy, because there's always more work to do, even though you are so passionate about it, and feeling so strongly about equity. But yeah, I think there are big lessons learned. ==Finding either allies in general is very, very important==. So, for example, ==I had a small team of allies. At first, some of them left, some of them lost interest, but I continued on finding new people. And the people who were really interested became specialists.== So trying to find their people inside, because that will help a lot, like quite a lot. And everyone who is passionate about it, well, now, maybe something else that you don't know, and together to be able to kind of build a program within your organization. And also very important, and I didn't mention before, is to ==try and partner with culture and HR teams, we have across the company, Employee Resource Groups. I'm not sure if you're familiar with them. But they're basically groups of people across an organization that are either underrepresented or like a minority group. These kind of groups really are supported by leadership and executives, but really help amplify their voices, and also advocate for new policies and things like this.== ==So what I did together with two other people was creating the Employee Resource Group for neurodiversity, and disability inclusion.== And first of all, you realize how few people we have not identified themselves as maybe disabled or neurodiverse, across the organization. But then the second one is to kind of actually work with, with people and hear their stories and their experience. So I realized that this is not very accessibility related, because we have one thing that's with clients and projects and guidelines, but then looking inside your culture and seeing what kind of people are working with it was very, very important for me. And also because, oh, we're going to our clients and say, we give you these great accessibility services, but we don't work with any people with disabilities or people that are neurodiverse. And yeah, it's, it's, I feel like it might be a bit of a side thing, but it really helps to kind of bring everything together. I hope that makes sense.	O, AA
	Aitanna Parker 39:20	
5.41	**That makes a lot of sense. And then can I ask, what's your next milestone in**	

	implementing the company wide accessibility? Would you go more for culture? Would you go more for interdepartmental? Communications? what's your what's your thoughts	
	Digital accessibility manager 39:32	
5.42	So I think this is quite personal for everyone, for me, I would like to help us learn about culture in general. But also, I'm very passionate about doing training and bringing departments together to work on accessibility solutions. So yeah, this is what I also have been focusing on in the past few months. So, yeah, this is my answer.	
	Cecilia Velasco 40:09	
5.43	Thank you, I think we have learned a lot from your experience. And I think it's a unique experience. You have done a great, great job. And you have a very good achievement. So I'm really, really happy that I was able to find you on the network and to have this interview. And as I mentioned, we will be sending the transcription of this interview, you can mean, whatever you want. We want to be sure that we are actually capturing everything that you are sharing with us. I would like to stay talking with you forever. But I know that you have limited time. Thank you, we really appreciate your contribution.	
	Digital accessibility manager 41:08	
5.44	Thank you so much for the invite, and also for your work. I don't know if I will be able to see your thesis, but if I am, please send it my way. Because yeah, I'm also interested in this topic as well. Obviously, it's very important. And yeah, I'm happy that I get to help.	
	Aitanna Parker 41:28	
5.45	Yes, thank you again, so much. You're amazing. We will be following up and when we finish with our masters or thesis, whatever that is, hopefully in June, we will definitely send it over.	
	Digital accessibility manager 41:40	
5.46	Thank you and good luck. Thank you.	

8.7   Appendix 7 - Interview practice participant 6

Interviewee Role: Accessibility lead
Date: April 28, 2022
Duration: 46:54
Participant: 6
Researchers: Aitanna Parker and Cecilia Velasco

Item	Transcribed text	Code
	Aitanna Parker 01:01	
6.1	**Do you mind introducing yourself? Your long experience, introduce yourself and your role?**	
	Accessibility lead 01:16	
6.2	Can I start now? I wasn't sure if you're recording it?	
	Aitanna Parker 01:20	
6.3	Yes, we are recording. Okay,	
	Accessibility lead 01:22	
6.4	I'm based out of New York and accessibility full time for about four years. Before that, I had a lot of issues with content design systems in their companies, sort of crossfade from design systems to accessibility where I work right now with [company 1]. Prior to that, I was doing this similar role at [company 2]. I was first exposed to doing accessibility work professionally in the context of working for [company 3] many, many years ago, 10 years ago, eight years ago, where my first experience whether it was just something that would block a release or something we're trying to do. I kind of over time came to first appreciate it as interesting ether experience opportunity. Then later on something else I became very passionate about as a good at work, my daily work, and I work with people from all disciplines in our company, UX, project management and product management, product management, engineering to deliver accessibility to our products. That takes a lot of different shapes depending on where we are in the process. Some of it is working with people proactively to review certain forthcoming designs, some of it is remedial in the sense that maybe we discovered an issue through our auditing or customer reports an issue of accessibility. And so my job is to work with teams to help them understand how to create a sort of scalable resolution for accessibility issue and hopefully accessibility proactively.	
	Cecilia Velasco 03:44	
6.5	**You have a great experience in accessibility and in all these years how have been the commitment from the leadership in the company that you have been working on in terms of accessibility?**	
	Accessibility lead 04:00	
6.6	it really varies. Some industries are more highly regulated or have more of a kind of risk adverse nature. At [Company 3], like it was privacy or security or any other sort of compliance thing, perhaps, argue over index on compliance rather than actual like logistics of using the product, which is kind of a tension that we find a lot because accessibility work, sort of like letter of the law compliance versus actual usability. I've also worked at places where it was not particularly well understood, or one thing that happens in people, the traditional means by which you generally prioritize work doesn't really work for accessibility. So if you ask the PM, how to	AA, U, O

	prioritize something, there'll be something about ROI, or what customers are asking for it, or what, what's going to drive metric wise, accessibility, isn't particularly well suited for that for a variety of reasons. One, it's while people do try to sort of create the sort of idea that it at least some more ROI, or the spoken of a lot, which is sort of the notion that it makes the product better for everybody, the truth is, you need to do it just because it's the right thing to do. There's also laws behind it, but it's sometimes challenging the accessibility priority to get, say, the new feature or something like that. And a lot of it has to do with people not really, really understanding, not just the sort of technical aspect of accessibility, but what the lived experience of dealing with an accessible product is, there's a lot of ableism built into, are at least American corporate culture, where people will say things all the time that they would never say out loud about any other group of human beings, probably, at least, not publicly, they would. And we're still kind of working through that so you get a lot of can person with this disability, whatever it may be, even do this job, or, like conversations like that are pretty rough. And accessibility, something that happens in our field a lot as challenging as we get hired to convince somebody to do something. Because the person who hired us couldn't tell the person to do that. But there's sometimes its idea that, like, we're just going to hire accessibility, people in this share, act of hiring accessibility, internationalist fix the problem, but in less than half down, serve mandate that we do this work, people aren't going to do it. And that's because if they do the accessibility work, they won't be doing something else that's in their mandate. that's been a struggle, on and off in different places I've worked within a given company, that can be a really wide variety of prioritization, depending on the nature of the product, what kind of industry is it in. So even within my current company, there's, there's a wide variety of accessibility prioritization, kind of based on the sort of maturity of that particular product or wasn't originally an acquisition that came from outside that maybe was built without accessibility in mind, or is it something that's been around for a while that's been building on top of other Accessibility work. You sometimes you see a lot of with this acquisitions, start-ups don't think about accessibility very much at all. And then by the time they're getting bought by a larger company, they suddenly realize have to completely replatform to do the accessibility work, and it's hard to justify. So yeah, it's all over the place. Like, I've seen places that are really bought into it. I have seen places that aren't and it's, it tends to stick the lines are we in are selling to the United States, things that are federal funds, and that would be the whole second pile of ways to go like academia, health, finance. But more and more, you two are probably well aware, there have been more case law, particularly in the states around the digital accessibility being ADA concern. So we had the Domino's Pizza lawsuit a while back, which kind of codified that. So it's changing a little bit, but I still think just as an industry is pretty early in its journey for accessibility.	
	Cecilia Velasco 09:35	
6.7	**We have read and we have heard a lot about accessibility is that awareness is something that is critical for people to understand and maybe align with the initiatives. In your experience, how have been the trainings or the knowledge transfer to people, technical and non-technical roles within the organization, and what do you think is the best way to do it?**	
	Accessibility lead 10:09	
6.8	I think we tend to slightly over index on the education side of things I've found, at	AA,I,

least and I've only really worked at sort of large tech companies. It may be different in other places, but the expensive in this conception by leadership that whole we just need to tell people about this, we need to do like an empathy workshop or any to like do some excessively one on one training. What I find is a lot of people that end up working at a big like enterprise software company like my company, or like [Company 2], where it was before. Like, already familiar with it. It's really usually more of the prioritization that's, that's the problem. So for example people, if you tell a software engineer that they need to make an audit accessible, you don't need to then explain to them that there's automated testing available and things like that, the first thing they're going to ask is there automated testing that I can do. So I tend to think of my role as helping people do what they already know how to do to help them understand how to apply the skills they have already. The hardest part about fixing accessibility bug is going JavaScript or whatever programming language you're using, right? It's a bit the actual accessibility part of it, it isn't really that complicated. Buying lottery tickets are complex, things that you deal with all the time, but the vast majority of production at a given company, are machine knowable the colour contrast, you don't really, you don't need education to do that, if you already know how to do the work, and I guess, security or anything like that companies have specialists that work. But every person that touches something around privacy, or security, or privacy or security expertise, need to know how to follow a certain set of standards. And requirements need to be written in a way that is meaningful. There is a lot of knowledge to find. But I also find it really sort of kind of other authorized within companies to, it tends to be not part of the regular flow, you kind of have this like accessibility phase, and you build the thing, like now let's go with this thing, we just go up and figure out if it's accessible or not, which is really expensive way to do accessibility, but unfortunately, kind of how a lot of companies do that right now. So education wise, I try to do that. For example, if I'm working with a designer, I try to help them understand what information choices they're making with their design, like designers do a lot of work that there's some conscious in terms of or automatic, I should say in terms of the information it's providing. We use these principles that we're learning find school around Gestalt principles, like grouping or like what things bigger, like what things darker what all these sort of things that we take for granted all carry meaning. So what I try to do is I work with designers to help them kind of see through the design. So if they will, what was the intention of putting a box around that? Is that a meaningful group? Or why is this that colour respect, colour wise, is bigger all this sort of stuff that's encoded in visual choices. Try to help them figure out how can we deliver that? Rather than focusing on like, strictly technical what are your property should you use this thing or whatever. And with engineers, I kind of try to focus on the sort of product quality aspect of the whole thing, just like accessibility is just another standard. we use the standards. Here's your toolbox. Do this stuff, use this automated testing, try to do it without a mouse, some basic things that they're doing already QA and coding and things like that we just a little bit of an accessibility aspect to it. The trickiest group that work was is our PMs who again there unless they're explicitly told and they will be sort of rewarded for doing this work they'll be tend to be resistance to doing it, because they have other priorities that they need to work on that sort of reward and clear. Your firmness thing is a kind of vague threat of a future lawsuit or a future customer being upset but PMs are usually thinking about like the next two weeks not like what might happen then a year or two from

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now just generally their job. So just like it tends to fit less well with the mindset of him. But yeah, what I've found over time is, again, we need to have a variety of offerings available to people. We have these sort of accessibility101 things that we basically put everybody through at some point in their onboarding or early on, but then allow space to add more advanced topics. So if someone gets really interested in it, make sure that they have the things available for them. One thing about accessibility I also found is, there's a sort of middle area you could express to somebody, it's enough can be dangerous or what have you. That's very true in accessibility, it's very easy to make things worse, by using ARIA in particular like and the way we annotate code, the wrong way, there's a certain expression, there's a couple of rules of ARIA The first rule is like don't use ARIA, basically, like if, unless you have to do the second rule: bad ARIA is worse than no ARIA. You can get to a thing where people tend to kind of overdo it a little bit, and sometimes degrade the platform. We need to identify people that are enthusiastic about the work, you try to guide them towards for advanced topics and work with them a little bit more, at less than you want, if somebody's like kind of running off making experience really noisy or through a lack of understanding of how like showing my use of this technology, like a screen reader that they might like over engineer something or make it work contrary to how the platform works. So that's a bit of a ramble.

	Cecilia Velasco 17:05	
6.9	**From your role and everything that you're commenting about, what I'm getting is that there is something that is really critical. And I am going to talk a little bit from the requirements phase, because you will need to have a balance between what are actually the requirements and what is not, and the priority of those requirements. So how do you usually manage the conflicts with the functional requirements and how to include accessibility, and all the situation that you just mentioned, about overloading too much.**	
	Accessibility lead 17:45	
6.10	Well, by large, the ratio of accessibility specialists and people that are doing something around accessibility has been pretty low, right? There's my company, there's 10 people maybe that to do accessibility work full time and 1000s of people. And a lot of it is about finding ways to scale process. And that ends up being a lot of music stained doing it for them in favour of doing it with them, and then showing them how to do it and then checking out the results of it later on and following up and everything. Because the only way you can scale accessibility at a company the size of where I work, is to make sure people know what questions to ask, they don't need to know necessarily how to do it, or have the full solution for everything. But if you they need to know, for example, oh, I'm creating a new data visualization, data visualizations tend to be complicated from an accessibility perspective, it's time to talk to the accessibility folks versus if they're building something from our existing design toolbox or design system, we've already baked that in for the most part, minutes choices community still, but like, you can wait until the end to check in with me. And if you use the existing design library, it's probably gonna be fine. It's gonna like add like a label for this or tweak this, but you're not gonna have to complete the building again. It's about creating a shared awareness that one might have accessibility challenges with certain types of things, and letting them know what their resources are when checking in with us. Try to be proactive about when I	AA, TI, O

see certain new pots coming down the pike, trying to reach when they get in touch with the people running, say like, Hey, like, what's your timeframe when you want to talk about accessibility features? I think the biggest challenge with a lot of this stuff is, if you don't get it done early on, people tend not to want to touch code unless there's some kind of what they consider it to be a new, like feature enhancement or like an actual bug. So you need to, hopefully create a culture where people see a lack of compliance, or a contradiction of WCAG, for example, as a bug, not a feature request. And that's a huge challenge. And everywhere I've ever worked, it's a natural tendency to think of it easy to change the thinking of accessibility as a feature request versus like this is broken. I tried to help people understand that, like the state, without being too negative, to see your product, and right now is broken. Like it's not, it doesn't work, it's not done, we need to go fix it not like in the future, it'd be nice, if relies on assistive technology, can't use this, like it's unacceptable state to not be not able to use the product. And the way I try to communicate that, especially in the enterprise software space is to focus on certain impact on that, say, a lack of engineering or design diligence, to help anyone look for employment, or like the ability to work or the COVID. We don't want to be creating the barriers. And to be thoughtful of even what you prioritize in terms of the work itself, like sometimes there's a tendency, again, from the traditional PM model to say, well, maybe this admin interface would give us a lot less of a lower priority than this other thing that kind of happens if suddenly someone can't be an admin, which tends to be a higher paying job. We tried to think about the overall with [my company], like what is sort of overall lifecycle of somebody being a [my company] consultant, or expert, like what are they trying to do? They've gotten to the [my company] training, they've taken this extension course and testing of certified all sorts of like, what are they trying to do next? And how do we make sure that happens and luckily, like [my company] is very customer centric organization, so speaking, in those terms, can help. But again, you kind of have to, like fight this sort of perception of the people saying, well, this is an email blast tool do blind people even making these weird people say stuff like that all the time. But you can understand, what their cultural context. But one thing I've been sort of trying to focus on and other [designers] have is to just, like, better educate about or like ableist, preconceptions, so that we don't have this, like, you know, ignorance is an excuse for, for doing this thing. And there's a lot of sort of like ableism fragility, so to speak, in the space where you have to be like, really gentle, and like you get served. You can't you send the person like what they just said, and like reflected back to them, like, it'd be a tense conversation. So you have to, like, take a breath and like, not be mad. I know you're saying like coming from a good place, but like, just so like, that's not like language we use or you're basically assuming that someone can't do something and the only reason we can't do it is because we didn't build something right. It's a challenging space. I think education in terms of sort of like this sort of disability awareness is as important as the technical side of things. And honestly in my career, and that's something I've had to like really focus on personally like better know the space and better. Even if one has a disability, which you probably all will be at some point out lives, it doesn't mean you entertain everybody disability. It's really important in this space not to make to make preconceptions about how people might use and products, to try to rely on that sort of share based on the community, we can argue for, it's like, it's not perfect. But it's a bunch of people who really care about this stuff getting together. And, trying to

	come up with a solution that's going to work with people with a learning disability, a cognitive disability, visual, you name it. It's impossible to guess every persona. And like, that's the thing that I think we have to kind of get past. Get past the sort of like, well, I don't really think Shawn would use it this way. Or like, why would that matter? I think the biggest impediment to that is that we're not teaching a design school, we're not teaching an engineering school, we're not doing a lot of user research with people with disabilities. There's just like a gap of information. And I think it's our job in the industry to help people understand that it's important to from the get go. And a big part of that is telegraphing that is important part interviewing. For example, itself for Google before, worked really hard on trying to get accessibility questions into the interviewing process, right? Because once people, people say, like, how was your interview with Google? It's going great. So they asked me, how to make a mobile accessible, and that that type of thing gets around, right? People know what you're going to be expected when you can embed it in the job description. Asking questions about it early on, you start telegraphing that this is important skill, which hopefully turns into your sort of like universities or technical training programs. Prioritizing that.	
	Aitanna Parker 27:16	
6.11	**What resources were made available to you when you started this role that really made your life a lot easier? And in the short term, and the long term, if I can repeat some of the things that you said, I think you said that, like some people, maybe younger developers were kind of building the components for the developers, and in the short term that was helpful, but in the long term that might have not been so helpful. So like, what resources in the short term and in the long term, like have definitely helped you?**	
	Accessibility lead 27:58	
6.12	One thing that I found helpful early on, and I still often sort of recommend to folks is just the very act of running automated testing usually comes with a sort of educational component. So if you run like, for example, AXE, which is like the most probably popular test automation framework, when it surfaces an issue and also tells you not just like that's an issue, but why does it matter? Who does it affect? How am I going to fix it? Having just sort of the repetition and learning from the perspective of what's the least capsule, low hanging fruit can kind of get you in a mindset of how to think about it. And I think this is my background is in engineering, so I'm just thinking about it like, no more engineering oriented but like you the way you learn engineers, you live you make mistakes, right? You do things the next time you go do artificially, etc. The way you learn engineering is learning from the collective wisdom of other people's mistakes. Computer science school, I would assume I didn't go to it, but is about learning patterns that have developed, developed over time, and simply with its ability to get a lot of repetition. I will say that having people in house that sort of understand the human side of accessibility is really important. Like that's when it really started killing me. That's when people 30 explained to me like, the reason this matters is like not a cat, or like, not set by the way, or whatever it is like the human being able to do this. XYZ. Getting past the sort of just compliance and letter to lots of into human experience is really important. The most helpful thing in my opinion, it would be if the second, she did a better job of hiring people with disabilities, there's a real sort of, like, sort of vicious negative cycle there, where it's like, the tools we build tend not to be very accessible	T, AA

	unless people have impediments of getting work. I've worked places where I started working on and realize that, like, the form that people use to request accommodations in the, an the process itself its inaccessible, for example. Or, maybe don't have a great interview process. You rely on making inferences about people's abilities coming in for just a physical space, or the, how are you going to do with code tests? Or how are you going to do whiteboarding for design review, or whatever it is, you need to make sure that companies have, hopefully containing many employees with disabilities who are working in everyday jobs, and there's also this like, tendency to say, okay, like, personal disability, you clearly want to work in accessibility, right. And there's not assuming that you're blind human being who wants to test everything that you build, on top of their own job, to work in accessibility. It's a lot of better awareness of disability culture, and what it means to work in the full scope of habitability and helping people understand that is a big deal. In terms of resources there's, there's people that write about it, there's podcasts I listen to there's accessibility Slack is good. The community is very, by large, very supportive of each other. You see a lot of same people a lot of places, or you end up with the same person in different places. It's a real, like, tight knit community, I wish it was much bigger than me that it is. But a lot of it's just relying on the experience of others and sharing ideas. Reading, reading books, like also usual stuff that you do. I just try to, I try to immerse myself as much as I can. And I think the biggest thing is, like getting past the thing, I think, what some people so dangerously work, they think, oh, I need to, like, memorize WCAG, and all that sort of stuff. And I don't have like, I see something that seems I'll know, like, intrinsically, it's like, probably not accessible, but will take me a second to figure out like, which tag principle applies to it. But familiarizing yourself with the structure, I get, like, the basic, like, how to read it what it means and what's normative and what's not normative and all that kind of stuff. That's important, but like having knowing, what [WCAG] is, is not as important, but people tend to get hung up into this sort of like trivia, like, flashcard perspective of the whole thing. I don't think that's important. It's the same way that like a, an engineer doesn't have like every aspect of the programming language they're working in, memorized; they just know enough to like, know what the question is, and click on Stack Overflow or what have you.	
	Cecilia Velasco 33:39	
6.13	**And from the role of a PMs, there are always these constraints between the scope or the cost, where it's going to be the for that you need to include. For accessibility is a little bit hard, because usually is not something that our customer is willing to pay for. But you're going to spend more time maybe including the accessibility aspects. And of course, there's going to be more effort for more cost. So, when you have this scenario, what is your strategy to handle that and to give priority to accessibility in the same terms that the rest?**	
	Accessibility lead 34:29	
6.14	Well, I do try to encourage people to think about it, it's the cost, it's part of the cost of doing business, it's just, it's everything separately as a feature or anything like that. It's gonna be hard to sort of justify the traditional sort of structures of prioritization. But if you just start from the assumption that we have to do this, and we have to make it and it becomes a lot cheaper to do. If you do early and often to speak so I kind of focus on the cost of remediation, when we wait too long. Luckily	QA, U, R

for us we have large customers that are in spaces that really care about accessibility. So we get signal from our customers, which is good for the people that sort of hold the money to hear that customer X has filed kind of facility issues during the month, or, you know, their care manage person is asking about our latest, like, that signal is important. Ideally, you would want most companies at a size have some kind of what we value pay some value saying, which inevitably, they all kind of sound the same, but all of them, like on paper, usually, like accessibility should fit right into that, right. But in reality, often, it's not that. And it tends to be like a sort of multi prong assault, like we, we talked about our product values, as a company talked about the ethical ramifications of it, in fact, in the game at [my company]. But then we also talk about the financial impact, we keep handy lists of like which feed logos have asked about accessibility recently. So we can put our slide deck and like scare, scare PMs, like it's a little bit of a carrot and stick thing, honestly. I do tend I say that piano, a lot like you should be doing as far as you're already being sued. Because what happens is, if you don't get to [the accessibility issues], you don't have very much time to fix it. And we've had many customers, I can't really go into specifics. But we've had customers who are getting sued for accessibility because of something that we provide to them. And suddenly they're in a consent decree. Like settlement, you need to look at 2.0, double A by June or something kind of arrangement. And it's hard to do accessibility work very quickly. Especially if you're in a thing where you're kind of like it it's kind of like rebuilding the foundation of your house from under the house, right? It's like you belong to a house. I guess it's like, it's a mix of scare tactics, and appealing to people's better nature, appealing to people's sense of pride. Appealing to their desire to make things usable, like whatever it is that makes a person, you just have to like, it's honestly not my favourite part of genre, like, I prefer to never be kind of convincing someone to make something accessible and happy to have because it's about the degree to which it should be accessible, or what we should do, like, what's the best way to do it. But I don't really want to spend any time having a conversation about like, whether or not someone that assistive technology should be able to use a product. But the trick is, people aren't really seeing it, I see it that way, when someone says I can easily accessible migraine, I can think of a person that can do something or a barrier, all this sort of stuff. Whereas people who are not familiar with this will think of it more like well, we often don't support Internet Explorer nine. Sure, like, people use it, or what people tend to get like, think of it as a the feature requests, like I say, like, it's just it's you have to train people to get away from the numbers in favour of, you know, the risk to the company in terms of perception. Like something that Google did in their onboarding that I thought was really great. Is they had this like fly during like desert inclusive design and accessibility. Like we had the side that was all these headlines of horrible things that in the verge or whatever about Google because of some just conflict failure of process, right? Our cameras don't detect dark skin tones. That's all white people see it? Because the techniques used to my ear, like putting those in front of people and these are people and those are people who were really stoked to be working globally proud about it. And I used to run that training occasionally. And I was saying to them, like, it's happened to me that like, I've been on my way to work, looking at the phone on the subway and see like, a headline about the company I work for and it makes me really sad. It makes me feel like I've let down my co-workers if I'm involved in it, or they probably feel that way. This helped people understand like, accessibility isn't, isn't going away.

	Humans are always going to have a wide range of ability. And we're always been a long time for it. It can be a wonderful, like, stimulating process to compute that. But you can't just like bear head in the sand and wait to get sued or something like that, because like this is gonna fail everybody, and then you're going to be back to square one, and you're going to have to fix it really quickly. But there's no silver bullet for me, I wish I knew how to magically convince everybody need accessibility work. Honestly, I have just like a, sort of a catalogue of arguments. I just try to sass out like the person I'm talking to, like, what's motivating them, and then moment, you know, what degree of characteristic to be to wield to get this, or in many cases is just like this person I'm talking to, I just need to talk to the person that's setting their priorities, because like, they're doing the right thing and a sense of like, pushing back priorities. It's not their fault that they haven't been told this is important. Unless you have that baked into your top down or organizational KPIs or OKRs, or you want to call them if people aren't gonna do it. So a lot of it is and of course, that's a conversation, like, I can't like call up our CEO. I kind of chat with them about this, like, it's so becomes like advocating upwards and upwards. I work with RSVP, like, and the next time you have like five minutes with Mark, can you bring this kind of thing. A lot of it just comes from having a top down culture of accessibility and making sure that people know that like, not only will they be allowed to do this work, they will be rewarded for it. And if they fail to do it, it'll, it'll have consequences for limits.	
	Aitanna Parker 42:45	
6.15	**And on that note, I want to ask, how do you maintain quality assurance throughout a project with the team that you're working with?**	
	Accessibility lead 42:57	
6.16	So depends on the particular product. But the goal is to tell people how to do testing and how to think about it through the whole process. We have a lot of these, like: how to think about accessibility to design training, how to do manual testing training, how to do automated testing. Sometimes need that with Scrum teams. Their product is about to go through like a big phase of accessibility remediation, which happens occasionally, we'll do an audit of the product and 100 bugs will come back and we know the next release next three months, is going to be fixing accessibility bugs. So we'll start parachuted in that team and kind of work with them, trying to sort of gradually back out because they get comfortable with it. I think the most important thing, as far as like QA, explicitly is to make it a natural part of the regular QA process, companies you do need specialized QA is going to be using a screen reader with various tasks, right. So the certain degree, you need to have those people that really know how it works. But what you must need is to have accessibility to like a first class QA heuristic, along with performance and security, everything else. Once you do that, people just don't have a sense of why you do the job will do it. So just about demystifying it and helping people understand how to measure it, help them understand how it's relatively easy to catch 70% of the issues between you know, automated testing and simple manual testing and you know, the rest of it Yeah, Mike might slip through the cracks, but like, that's always gonna happen. There's always gonna be bugs and we'll fix that but just with a little bit of due diligence, you know, honestly, most of these issues can never make it to production happy.	QA
	Cecilia Velasco 44:59	

6.17	Awesome. Yeah. I was thinking something that you said previously, is that accessibility should be part of the cost. Is it something that should be there and it is something additional that you can just go to remove. as security, for example, that right now. So it's really important. It's a really critical message right? For, for developers and for the organization itself.	
	Accessibility lead 45:33	
6.18	For sure.	
	Cecilia Velasco 45:37	
6.19	I don't have more questions. Right now,	
	Aitanna Parker 45:41	
6.20	I don't either. I feel you've touched on all of our categories and subcategories. So I think this was a very rich interview. So thank you so much. I know we could talk all day, but you have limited time so we want to respect that as well.	
	Accessibility lead 45:58	
6.21	Well, thank you for setting this. I'm excited to see what manifests from this work. And it's a pleasure talking to you both. You have my [company] email. And as it turns out, I am leaving [my company] next week. I'll send you a message after this and sending my personal email for the question.	
	Cecilia Velasco 46:25	
6.22	Yeah, because we are going to be in touch maybe a couple of weeks.	
	Aitanna Parker 46:30	
6.23	Well, with the transcripts and the notes that we have, we'll make sure that's accurate and everything. Yeah, that'd be great. I'm also available on LinkedIn as well to send it over whenever is best.	
	Accessibility lead 46:41	
6.24	Okay, I will do that. Right. Okay.	
	Cecilia Velasco 46:44	
6.25	Thank you so much for your contribution. It's a valuable experience. We are really happy to have you.	
	Accessibility lead 46:52	
6.26	My pleasure. Good luck with your project	
	Aitanna Parker 46:54	
6.27	and let me know. Thank you have a good one. Stop the recording.	

8.8 Appendix 8 - Interview transcript participant 7

Interviewee Role: Software engineer
Date: April 28, 2022
Duration: 40:32
Participant: 7
Researchers: Aitanna and Cecilia

Item	Transcribed text	Code
7.1	**In order to have some context, would you mind introducing yourself, your role and your experience in terms of accessibility?**	
	Software engineer 00:30	
7.2	I am a software engineer. I started my career, I got into accessibility through an internship. I was hired as an intern on an accessibility team. And I didn't know anything about accessibility before that. Then through that internship, I got a full-time position on the same accessibility team at another company. I worked on that team for two years and got burnt out. I quit. I decided to focus more on software and being an actual programmer. I work on design systems now. So incorporating my accessibility knowledge into creating a design system for my current company, kind of because of how it was being an accessibility specialist at a large company.	
	Cecilia Velasco 01:36	
7.3	**From your perspective- now that you're mentioning that there, you have been in a team, actually, in charge of accessibility, how important it is to have the commitment of leadership in terms of incorporating accessibility in the websites or products?**	
	Software engineer 02:00	
7.4	It's important. Obviously, my team got funding because of executive interest. But it's pretty easy for executives to stay "accessibility is a first class citizen or whatever," which I also think is like a really problematic phrase for a lot of reasons. Executives didn't say they cared, and they did fund a team. But it's hard to translate executive interest into actual action on other teams.	F, O
	Cecilia Velasco 02:37	
7.5	**How do you evaluate the knowledge that there is about accessibility in different levels?**	
	Software engineer 02:49	
7.6	Well, so the way my team was structured was like, my previous company has a bunch of products that they call clouds. The way my team was funded was that they would hire one accessibility person, per cloud, per product. That could be like 30 Scrum teams to one representative. It's kind of a thing of like, executives knew that it was important that they should have one person, but they didn't understand that having one person is nowhere near enough. And then, as deadlines or other conflicting things is, a middle executive or like a VP, or I don't really know the levels, but like, as someone decided that something was more important to them, it was very hard to then get an executive to be like, "hey, actually, yeah, you need to think about accessibility."	O
	Cecilia Velasco 04:01	
7.7	**In your current role, that you are now working as a designer, is there also a structure just for accessibility or accessibility is a part of the roles? And how**	

	do you handle these conflicts that you're mentioning in your current position?	
	Software engineer 04:24	
7.8	I'm not a designer, I work on a design system. I program components that other teams and my company can use. At my previous role, I wasn't allowed to actually touch code myself, I had to like advise on how to code. I can provide prototypes, or like written documentation or whatever, I couldn't actually access code. And that led to a lot of frustration because as an accessibility professional I could just fix it but I couldn't. And after being frustrated with that, now I can actually program the component correctly. So hopefully product teams don't have to write their own front end as much. They can rely on the menus and the combo boxes and the inputs and stuff that we build for them. And so that's why I decided to make that switch. Instead of trying to get people to do stuff, I just build it myself. And then we give it to them and say, like, hey, use this instead.	I
	Cecilia Velasco 05:38	
7.9	**If I'm understanding correctly, the components that you are able to build right now. Are they already incorporating accessibility features?**	
	Software engineer 05:50	
7.10	Yes. We build these components to WCAG 2.1, AA [compliance]. We have colours included, and we check all the colour contrast, we check the ARIA attributes we have robust testing. These are like very thoroughly vetted. Actually, it's public. You can look at the website. Because we control these components, we make them like, as up to date with accessibility standards. It just makes it a lot easier to give them the accessible version. Here you go.	TI, I
	Cecilia Velasco 06:37	
7.11	**Is this actually a policy that, I'm gonna say a policy, but it could be a practice, a process that is established in your company, right? Or is it something that you think is coming from you because you have the experience, because you have a background. So where is this interest of accessibility coming from?**	
	Software engineer 07:06	
7.12	I would say design systems in general are kind of a trendy thing in the tech world right now. The interest came first and the design system, and the idea of oh, we can unify our products and make them all look the same. Then the leader of the design system, who hired me, he was also formerly an accessibility professional. So like, because he's in charge of it, he was like, oh, this is the way it's going to be. The interest mostly came from them hiring him as the Design System Manager.	D, AA
	Cecilia Velasco 07:44	
7.13	**The accessibility has to do, according to what we have read- has a lot to do with awareness. It is a little bit complicated to spread this knowledge, convince the people to engage in accessibility, how do you handle the training and knowledge in your experience, in your roles?**	
	Software engineer 08:15	
7.14	When I was working as an accessibility specialist, I had office hours multiple times a week where teams working on stuff would come to me and just be: I don't know what is going on. And I would like to explain their UIs from an accessibility perspective. And then also, we did a series of talks, there was a mandatory week of training that you have to go through. One of the talks in that training was like a very high level intro to accessibility thing that we would give. We had quarterly	AA

	talks that would just kind of have a rotation of topics. So we had designing for accessibility, engineering, testing, content design, just like whatever kind of seemed interesting to people that quarter, we would do a talk about it. Like a lot of documentation, we would stock other teams as meetings, just show up and be Hey, have you guys thought about this? Why are you here?	
	Cecilia Velasco 09:25	
7.15	**But it was a constant presence, right?**	
	Software engineer 09:29	
7.16	We tried, obviously, there are some teams that we just had to deprioritize. When I was one person for like 20 I because I was more junior I only had like 20 Scrum teams. And you can only interact with so many people in a day. Some teams, I had no idea what they were doing. Probably we're releasing horrible stuff. But then you're trying to weigh the importance of oh, this team is making something entirely new. And it's very funded and people are very excited about it. So we should focus on that. So it's kind of like a balancing act of the teams that were most important. It was a constant presence of talking to them, at least weekly, and checking in.	O
	Cecilia Velasco 10:32	
7.17	**When you work with those teams, and those products that are important, I am assuming you do a kind of evaluation or audit about their development. Correct?**	
	Software engineer 10:47	
7.18	I wouldn't do a super formal audit. As the designer was working on it, I would walk through the designs with them, like call out problems, and suggest fixes. And then as engineering was building, I would test it myself, audit it a little bit that way, or, walk through if they had a question on how to build something into a prototype. Just really try to support them, the whole process, so that it wasn't-. The audit usually comes at the end. And it's like a more formal thing. Usually, I tried to interact with them before that, so that they didn't get too far down a path that wouldn't be accessible.	QA
	Cecilia Velasco 11:35	
7.19	**The results of the audit were considered for further improvement, or a constant process of improvement?**	
	Software engineer 11:51	
7.20	We had a product manager on my team, who kept track of formal VPAT*audits. And so they would basically like to hire, they would basically, run an audit, at least once a year on the major products. Then file tickets based on those audits on the teams. So that kind of formalized the process around full VPAT situations.	QA
	Cecilia Velasco 12:25	
7.21	**How was the response of the developers after the audit was delivered?**	
	Software engineer 12:35	
7.22	Mixed. A lot of it would get deprioritized. If there were bugs that were blocking a user's ability to do the flow. If there's something really egregious, we would have them fix it. And it usually took repeated reminders, but if something was like completely stopping a user's ability to do something they would really, really try to make them fix it.	O
	Aitanna Parker 13:09	

7.23	**How has the culture of your company impacted web accessibility?**	
	Software engineer 13:20	
7.24	They like to do a lot of forward facing-. We have like a Chief Accessibility, or <mark>my previous company has a Chief Accessibility Officer now</mark> and stuff. It looks good to have that stuff. I think it's improving like they fund some things. I wouldn't say that the product is perfect or at all. They like to say they'd like to talk about it. In like an Office of Accessibility to their heads-. I'm not really sure that came after I left. It's good that company cares a lot or tries to care a lot.	O
	Cecilia Velasco 14:00	
7.25	**When it comes to the requirements phase for different products. How is accessibility included in those requirements? Is it really a non-functional requirement or is it actually treated as functional requirements that have to be there? How is that handled?**	
	Software engineer 14:23	
7. 26	<mark>[It] depended a lot on the team. And that's where the soft skills were really important. Because like relationship building with the teams- the better relationship you had with the people on the team, more likely it would be included as a functional requirement</mark>. There were some teams at the beginning of my time there the two years they were very hostile to the idea. But then over time, they're "Okay, it is a functional requirement." It just really depended on how the team was doing or like how busy they were, how much they liked me as a person?	O
	Cecilia Velasco 15:10	
7.27	**When those conflicts are coming up, how do you track the accessibility requirements that are not included in the first version? How did you keep them in some place so they don't get lost in the way?**	
	Software engineer 15:29	
7.28	Ultimately, I had to keep track of that. I had just a bunch of - I had like a document. <mark>I had a ton of documents, but I would have documents for each team. Say, this is where they are in this release. This is what they're pushing.</mark> I had personal notes for myself of I have a spreadsheet of all my teams being they need to do and this is what they're not doing. And then I have, like a team facing document where I'll be okay, Team XYZ, here's all the things you should do. Here's the minimum requirement, kind of really making it clear, but ultimately, <mark>I was the one keeping track of that.</mark> And like reminding them about it. So I'd come back like a few months later be hey, remember this document I sent you? it so important.	R
	Cecilia Velasco 16:20	
7.29	**So basically, it's a constant negotiation with them. I'm assuming you also need to talk with them about deadlines, be really in the middle of the projects and understand workloads and everything, to negotiate?**	
	Software engineer 16:46	
7.30	I learned a lot of soft skills, communication, documentation, and how to escalate problems. There's a lot of that kind of stuff, which is challenging. For me. I chose I like a programmer to do that.	
	Cecilia Velasco 17:09	
7.31	**Now, let's move a little bit to the design phase. Now that you're designing and thinking about those components, do you think there are options in terms of**	

	design patterns, or some architectural strategies that can use developers to reuse components and be more effective when incorporating accessibility?	
	Software engineer 17:40	
7.32	I mean, so the components that I built, I sent the link, they're meant to be as generic as possible, so that they can be used in as many places as possible. Because that's the most important thing. And then, hopefully, there's enough small components that you could if you want to build something that knew you could build it out of the smaller requisite parts that we've provided. Because I think that's the only way it can scale. Because it just seems like fighting every day on a very individual basis is really hard. It has small gains over a long time. That's why I decided because the components are reusable and are accessible out of the box. And it kind of limited my scope of concerns. I think that the components, it's exactly that it's just like reusable. We have guidelines on the website of Oh, here's if you want to use some of these components together, here's how we recommend doing it, just making it as easy as possible.	I, D
	Cecilia Velasco 19:02	
7.33	**Are the developers aligned with the use of those components. Is this a policy of the company or something that they are understanding is required to avoid rework?**	
	Software engineer 19:19	
7.34	It's a bit of both. I think that the design system at this company has been around for two years. So there's some legacy products that don't use it, but most of the new products have to use it. As teams move from legacy systems to the new one, they have to migrate to paste the design system. That helps a lot. Because their old components are terrible. It's so bad. The fact that they have to migrate through, when they like if they're gonna migrate to any of the new systems they have to make paste helps.	I
	Cecilia Velasco 20:02	
7.35	**How do you get the information that you need a new component, for example?**	
	Software engineer 20:10	
7.36	The designers or engineers bring it up to us. We also have a public GitHub that people post like discussions on and say Hey, people asked for a certain button a lot. So we're gonna build that soon, or Hey, I'm building this thing. And we don't have this component equivalent and paste like. We usually go through a series of design iterations to figure out the best way to show and style this component. And then we go through the engineering process, and then we release it formally. Most of it is like stuff that people ask from us.	D,I
	Cecilia Velasco 20:49	
7.37	The users of your product are asking for something. Like: I need a bottom, I don't know something. And then you got those requirements. And once that you're developing the component, you take the chance to put all the accessibility issues there. So the component is ready with everything that you need.	
	Software engineer 21:17	
7.38	Yeah, exactly. When we do formal reviews, we'll review it with designers of the company, and then choose the company be like, Hey, there's this like, look and behave the way you need it, too. And they're like, yes, no, here's the gaps. And	D

	we'll just iterate on that and be able to release like a really polished, accessible tested component.	
	Cecilia Velasco 21:46	
7.39	**I'm assuming you have two moments of testing: one is for the component that is new. And when the product that uses the components is ready, how is the testing in terms of accessibility?**	
	Software engineer 22:04	
7.40	This company is pretty new to accessibility in general. So, I actually don't really do audits at all. The head of the design system has been lobbying for a couple years trying to get a budget to run audits, because I think we're also starting to get government customers and once the government starts buying your product you have it's much more like they have to do it. So I think it'll happen soon. But there's no company culture for accessibility yet.	QA
	Aitanna Parker 23:07	
7.41	**When you gather requirements, do you usually follow the WCAG 2.1?**	
	Software engineer 23:19	
7.42	There's some stuff that I know. Or that like I've learned from experience, I usually, most of the time, follow the guidelines. And the ARIA Authoring Practices, or something I reference a lot. I don't know if you've seen that. Those are example components. ARIA Authoring Practices, show you how to build web UIs that are compliant with WCAG. So I use that a lot. There's been a few times where we were building UIs that are completely off the map of what has been done before. That it just was a lot of me prototyping, testing, luckily, there were two blind employees on my team. We would test UIs with them, test as with my other co workers who had years of expertise and so we would trial and error develop our own standards based on what is possible in HTML. So that was cool. Those were fun. It's like a creative process because I don't know if I just kind of made it up.	TI, T
	Cecilia Velasco 24:50	
7.43	**Your colleagues that are blind, is their function to test the components?**	
	Software engineer 25:01	
7.44	Their jobs were the same as mine. So they were in charge of each, they each had their own product. So one was in charge of all mobile, and the other one was in charge of a different product. I would just like they would sit in my row, and I would just ask them to test things for me. Nice enough to oblige.	
	Aitanna Parker 25:20	
7.45	**Do you know if they are heavily relied on for testing?**	
	Software engineer 25:29	
7.46	Um, no, I mean, we try not to, because it's not their job. But we would all, like as a team, get excited about new UIs that are challenging. Everyone was down to help and collaborate on the best solution.	
	Cecilia Velasco 25:48	
7.47	**In terms of testing, do you use automatic tools?**	
	Software engineer 26:00	
7.48	For my current job, the testing we do we use AXE, which is the automated sort of testing software that most people use. But that only goes so far, it doesn't really check colour contrast, doesn't check interactions. And so we use AXE, we use	T

	snapshot testing, where we literally take a picture of the UI to make sure that contrast is okay. And we also have unit tests to make sure that keyboard functionality works as we expect it to. And we also have other unit tests that check like: Oh, does this aria attribute update properly? Like if I select this item in a menu, does it register selected properly? So it's like a mix of a lot of things to kind of get full coverage.	
	Cecilia Velasco 27:03	
7.49	**All the testing, the development, the accessibility itself is managed within the company, right, with your own teams. Have you requested help from external partners like experts?**	
	Software engineer 27:35	
7.50	We don't have it at my current company because I don't think there's a budget. But at my previous company, we would sometimes get consulting hours from level access, or DQ, which are the big accessibility companies. But usually, we didn't really do much manual testing of UIs. So we would just run automatic tests internally at that company.	T
	Aitanna Parker 28:12	
7.51	**Do you consider non disabled related, accessible needs? If somebody has a slow internet connection? Do you also consider that and when you're going through requirements?**	
	Software engineer 28:30	
7.52	No, I mean, slow internet, not really, because all of our stuff requires JavaScript. And there was this old accessibility standard where your UI should work without any CSS and JavaScript for slow Internet people. And that's unreal, it's impossible today. But we do consider things like colour contrast helps a lot with bad monitors, using a phone outside. Like lift famously changed a lot of their colours away from the pink because they realized their drivers couldn't see the phone, the UI on the phone, which is so we also- that's the thing. A lot of the negotiation was also Hey, if you're not disabled, accessibility stuff still helps you.	
	Cecilia Velasco 29:35	
7.53	**I am assuming you have lots of lessons learned when the users are reporting "Hey, this is or I want these or when something is maybe not as it's supposed to be, how do you track those lessons learned? Do you use it maybe for building new components or new developments?**	
	Software engineer 30:00	
7.54	Mostly just in my head. Now. I'm trying because now, most of the people on my current team don't have a ton of accessible experience. So I'm trying to uplift everybody, teaching people stuff randomly as it comes up. But I don't have any formal way to consult. People pretty frequently asked me to teach them, give me a TLDR, all the accessibility stuff, you know? I'll think of it when I think of it. If something comes up, I can't tell you-	
	Aitanna Parker 30:47	
55	**Do you know, there's a line item for the accessibility team or like other employees to get different certifications?**	
	Software engineer 30:57	
7.56	I don't have any certifications. No one on my team actually had any certifications. I think that certifications are cool, especially if you have no experience, and no one	

	at your company has any experience, I totally see the value. But they are expensive. I think that they also sometimes lead to a very rigid mindset around accessibility. And these are what you have to do. Whereas what I appreciated from my company and my co-workers there was that it's okay, this is the UI that you want. How can we work around? What do you want to make it work? Because that leads to a much less combative conversation. Usually, that's just what I've noticed. I want to work around their expectations of what they want, and make it as close to what they originally had as possible.	
	Cecilia Velasco 32:14	
7.57	**In your experience, is accessibility actually a requirement from clients ?**	
	Software engineer 32:26	
7.58	From the government, a lot of European countries have expectations of private companies. So the EU adopted WCAG2.1 as their standard way before America did. I don't even think America has, in general, has. so, random EU customers would come and we need this to be with WCAG 2.1. It's usually governments or European companies.	
	Cecilia Velasco 33:06	
7.59	**So it's something that you can definitely mention in your scope of work. And it has to be there, part of the deliverable that they're going to complete?**	
	Software engineer 33:17	
7.60	Especially if any product expects to be able to sell because, until you have recently started, like a government sales organization. Like if they're gonna expect to be able to sell any of the products to the government, like they're gonna have to start caring about it. Because there's a law for them.	
	Aitanna Parker 33:48	
7.61	**How do you see accessibility improving in the future?**	
	Software engineer 33:59	
7.62	I feel kind of cynically, I feel like it has to be like law in the US for it to scale at any reasonable pace. Because like all these tech companies, a lot of them are US based. European customers are asking for it or government customers are asking for it. It's not enough to really force a ton of change. I hope that big companies continue to invest, usually big companies that have accessibility because they are able to have government customers. I hope it keeps getting better. I think that like there's some stuff on accessibility in my company that really bums me out sometimes so, I hope things get better. I don't know if you see dominoes going all the way to the Supreme Court to try and not have to make their app accessible. It was really disheartening. But the Supreme Court ultimately decided that they had to do it. But people still don't know that, like blind people use phones. So I wish more people knew, like this, disabled people are people that operate and function in society.	
	Cecilia Velasco 35:37	
7.63	**Exactly. Well, I would like to take that question from Aitanna but from a technical perspective, what do you think is the trend in terms of making accessibility easier for the developers?**	
	Software engineer 35:56	
7.64	The rise of design systems is very helpful. I think that like automatic testing, if used correctly, is really helpful. There are a lot more resources online. It seems	I,T

	like the accessibility consultants are doing pretty well. There's another student from my class at Santa Cruz that started an accessibility consulting company. I was like, what? Like, That's so random. But like they're on the rise? I don't know.	
	Cecilia Velasco 36:31	
7.65	**That's great. I'm really curious about the design system, because for me, I could think, maybe those libraries, those components could be actually part of the standard itself right now, have you seen something like that maybe in open source that everyone can use ?**	
	Software engineer 37:01	
7.66	<mark>There's a lot of open source libraries</mark> like that. The standards themselves like the ARIA Authoring Practices, and WCAG change very slowly, but they do respond to the influence of companies and popular libraries. One example is there's this idea of a combo box, which is an input, you can type in and pick from a list. So let's say there's been around for a while, but then, due to popular demand, there's now an idea of you have an input that you can't type in, but you can pick an item from the list, kinda a select. And so that's contributed back to the web standards, which is cool. People do share with each other. It's slow to get it in actual HTML.	TI
	Cecilia Velasco 38:00	
	Why do you think it's so slow?	
	Software engineer 38:03	
7.67	Because it's like governance. There's this really big group of people that decide what is and is not in the thing. And it takes years to decide anything. They're trying to go faster from what I understand, but it's a very slow process.	
	Cecilia Velasco 38:36	
7.68	I think we have taken a lot of your time. I really, really, thank you for your time, for your willingness to contribute. I think we have learned a lot. We are really happy that you're in this role promoting accessibility	
	Software engineer 38:58	
7.69	I am happy to help. Accessibility community is overall pretty welcoming. Like it's very. So accessibility in Twitter is pretty big. And like there's a Slack group that is very open to sharing with each other and stuff. So I recommend checking out those spaces if you can.	
	Cecilia Velasco 39:23	
7.70	Yeah. Actually, we have found that people are willing to talk and contribute. And that has been amazing.	
	Software engineer 39:29	
7.71	Yeah. All right, so that people won't shut up about it.	
	Aitanna Parker 39:38	
7.72	Perfect. Okay. Thank you so much, Software engineer. Within the next two weeks, we will follow up with the anonymized transcript and the notes for your review, so that we can use it for our study.	
	Software engineer 40:00	
7.73	Thank you. This study is so cool. Thanks for having me.	

*Voluntary Product Accessibility Template

8.9   Appendix 9 - Interview transcript participant 8

Interviewee Role: Accessibility lead

Date: May 3, 2022

Duration: 35:57

Participant: 8

Researchers: Aitanna Parker and Cecilia Velasco

Item	Transcribed text	Code
	Cecilia Velasco 00:00	
8.1	Just for the tracking and record purposes. Could you please introduce yourself and, if you don't mind, could you explain a little bit about your role right now and your experience with web accessibility?	
	Accessibility lead 00:24	
8.2	Sure. Well, thank you for arranging the interview, and apologies again, for not making it on time. So I'm an accessibility lead. I have been with the company for three years. But I actually started as a UX writer there. So I wasn't working in the accessibility field prior to that. But I had been working in a bank, and we were designing account opening systems. And we were doing it in an accessible way. So I learned a lot from our lead developer, and they're UX designers at the time. I was a UX writer there as well. So when I got to my current company, I realized very quickly that accessibility wasn't a priority. It wasn't really known about, it wasn't talked about, it wasn't part of any of our processes, not on purpose that was just not there. So I found an accessibility guild slack channel. And I joined that, and asked, I said, Hello, when is anyone doing anything that I can be part of, and there wasn't really anything happening there had been before, but nothing had really stuck. So I got everybody together. Well, we had a meeting of about 30 people. And just to find out, you know, what had been happening and who everyone was, who was interested in this, and that was back in March 2019. And we've met up every month since that. Same group was met up changed, obviously, over time, people joining people leaving, but I just went on a mission to try and make things better. So I worked as a UX writer for six months, then went on a secondment as an accessibility champion, to work with our design system team and our mobile web team, to see what we could do there. And then after that, six months, I basically wrote a job description for myself as accessibility and said, Look, we need to do this. And they said, Yes, so I've been running the program for two years. We there's only just there's only me, employed permanently in accessibility. But I do have a very big team of accessibility champions who are volunteers and herders passionate from all areas of the business. So design, product engineering, office management, legal, user satisfaction, social media, all over marketing.	AA,O

	And we meet regularly, and we try to make them compliance and all of those areas. So, the way I look at it is we've got three kind of areas, how can we make what we do internally more accessible? So that's like, kind of our office environment or legal policies, How can we help our disabled staff, even in terms of internal communications, you know, how do we make our PowerPoints more accessible, our zoom calls more accessible, all of those things, then we've got the product. So we've got our websites and our mobile website. And they are different for us. They're two different platforms. We have our iOS app and our Android app. So how, you know, that's the digital accessibility and what do we do there? And then the third part is more the travel industry, how can we help the industry become more accessible to disabled travellers? So that's it, you know, we've got so much work to do on our products first. But this is always something that industry is always something that I'm very, very interested in. And anytime I do get the chance to talk to people, you know, like you or other companies, or anywhere that I can try and help people understand what accessibility is, and how they can kick off a program or something, you know, I do it because I want as many people as possible to be thinking about this. So there's those three areas. So it's quite a quite broad. Yes. I guess maybe what you're wanting to focus on is the products work, like the digital accessibility stuff,	
	Cecilia Velasco 04:29	
8.3	**I think so. We cannot cover everything because accessibility is huge. And we have constraints for time. This is a very important journey that you have been on. I want to ask you when you started all this idea of incorporating accessibility in the company, how was the support from the leadership?**	
	Accessibility lead 05:02	
8.4	So initially, I had to really explain what accessibility is, who benefits from it and why we really need to care about it as a business. So I did that to my line manager at the time who said, Yes, I agree, go and speak to the head of design, because I was on the design team. So that the same company had the same conversation with him. He was like, yes, go and speak to the chief product officer, the CPO because we need his backing. But so it was, I think I talked to everybody, I tried to talk to everybody in their language of what was important to them. So we were talking a lot about inclusive design and user experience when I'm talking to the designers like the head of design. And then when I'm talking to the Chief Product Officer, is broader. It's more about, you know, increasing our audience size and increasing the loyalty of our of our travellers and making things better for the industry that that appealed more to him. So everyone, everyone has backed me for what I'm doing. But I suppose the challenge comes from, like, how much backing they give you. So they're very happy. They've always been very happy that someone is interested and doing the work. But, you know, for things like trying to get accessibility mandated through, making every development team test for accessibility as a mandated thing, that's a separate challenge. So, I've not gotten to that level. To be fair, I've not been pushing for that yet. Because I know that we're not close to that yet. There's so much else we have to	AA, O

embed accessibility into so many other processes first, before we can mandate things like that, you know, so I think I've been quite careful in what I'm asking for. And so far, I have had the backing that I've needed to do what I want to do, I have been trying to grow a team. So I've been asking for an accessibility engineer, for example, a permanent accessibility engineer would be amazing, because I'm not technical. And I, I speak to developers, but I would love it if someone else could speak to them and more of their language than my language. And I love an accessibility researcher who could talk to disabled people, show our products to disabled people, all they know, regularly and gather that feedback. It's so key to making accessible products as to hearing from people with lived experience. But managing that whole process is really time consuming. So I was looking for that team, just three of us to start with. And I think it will happen. But I wasn't given that. I've been told to make more use of our accessibility champions network of these volunteers who are amazing. So rather than getting the team, what I'm actually doing now is looking at the network we have and going okay, how can I get more out of these champions? How can I get them doing more in their areas? Because as I said, they cover that whole range of disciplines. So I'm at the moment writing a new strategy for that champions network. How can we both it's very informal at the moment, so people just join the calls and do the work if they can right? but there's no recognition. Apart from me saying great, or you know, sending them an internal, we have things called high fives where you can high five someone and they get recognized for it. And it's great. But there's no it's not built into their performance reviews or their goals or so I'm trying to make it more established so that it is part of that. And they can then feel a bit more free to do to put some more work in to get things moving. And I've also changed the structure of it rather than just being everybody and together, I'm going to place people into pods, where there's more discipline specific pods. So I have a product design pod, a marketing communications pod, an engineering pods, and operations pod. So they will hopefully all go and do their own thing, and then we'll come back regularly to check in, but I'm just thinking, distributed responsibility, more in an empowerment to do more work in your specific area, I think we're gonna see a lot more integrate activity happening rather than it just being me and a bunch of volunteers. So I think, you know, being asked to make more use of this, hoping that they like my suggestion of how I'm gonna make more use of it. But I do think that that's going to be really I think it's gonna change things. I think there's gonna be a lot more happening and Then it'll be easier to like, say we want to change our design process, or we want to embed accessibility into a design process. making that happen will be much easier if it's led by designers, rather than me going in and going, hey, you know, it'd be so much easier if it's actually done within the team. That's my thinking in a way, fingers crossed, it

Cecilia Velasco 10:19

| 8.5 | **Fingers crossed! and about these volunteer teams that it's something that is amazing. How did you manage to engage those people? Or how do you feel about** |

	why they are willing to join this initiative?	
	Accessibility lead 10:39	
8.6	So way back, when I got them all together, there were about 30 people in that first meeting. And so they were part of the accessibility guild already. So part of that slack channel, there were 70 people there, we've now got 284, I think in that channel, so that's nice. And also people have left loads of accessibility jumping for the web. Engagement?. So when we meet, and we meet once a month, actually, last year, we met every two weeks, which was really nice, people just really liked the meeting, I think it was really, it was just a really positive, lovely, lovely group of people who are coming together for a passion that they had and put that it's people with lived experience, or they know someone with a disability who struggles with technology, or they're just wanting to do a great job, it can be a number of reasons, they come together. And when we do come together, we're like, we're like a team, like, we'll cross discipline team with but with a shared passion. And I think when everyone has the chance to chat and talk about things that they're doing, and get other people excited, it gets us really laser ball rolling of wow, we can actually make a difference. And you know, we share lots of user testing with people with disabilities, where we see people really struggling with using our product. And people are like, Oh, my God, we need to fix this. And people that just, it's just the passion that they have. And I think some people are really interested in learning something new. And something that can have such a personal effect on people's lives. Because that's actually what it boils down to. And I think if people are being encouraged, I'm kind of a good encourager, I encourage a lot of people all the time to do things and find the people that are encouraged. And then they see the benefits of that. And we share the benefits of that. And it's also accessibility, the profile that has been increasing, increasing over time. You know, in the last two years, nobody really knew what it was. And then, you know, we did loads of training and trained 45 different teams across the business. So everyone was aware. And then we talk about it more, you know, there's internal blogs, there's speakers, there's external training coming in, it's just become more of a thing. And we joined the valuable 500 as well as the weight of the valuable 500.	AA
	Cecilia Velasco 13:14	
8.7	No,	
	Accessibility lead 13:15	
8.8	It's a group of 500 businesses from across the world, who are all publicly committing to improving disability inclusion. So it was set up by Carolyn Casey, who is amazing, you'll have a look at this. There's a website and the valuable 500	
	Cecilia Velasco 13:36	
8.9	definitely we will!	
	Accessibility lead 13:39	

8.10	See every company who joined has a commitment, and a written commitment on the website. And like my I was like seven or eight bullet points of what we are committing to doing. And as soon as we got that up there like so I had to get the CEO to say yes to that, because that was wonderful. It had to come from the CEO, it had to be signed before they would accept it. So I started talking to my company, you know, way back at the very beginning of that, because I saw Carolyn case, the talk at texture Pro, which is a big accessibility conference. It's in the UK, but it covers Europe. So it's on a November. It's run by AbilityNet. And she did the opening talk. And she was she's just amazing. So this was like there was only I don't know how many members at that point, like not many. And I thought: we need to get our company on that list. And then time passed, and I wasn't getting very far. And they were then up at number 418. And as I right, we need to get on this list now. How are we going to miss our chance. So yeah, we're part of that. And I think being part of that has said to everyone else in the business, the business is now taking this seriously. What you do thing about it, you know, so that really helped as well. I wanted to be part of that for many reasons. But I guess the main reason was to, internally for people to realize this is serious. And for leadership also to go, Oh, okay. We are where, you know, John, our CEO has agreed to this. So this must be so this is something that we need to work on, it cannot be ignored anymore.	
	Cecilia Velasco 15:23	
8.11	**Yeah, this is fantastic. Because I think it was a strategy to make the people understand that it has a real impact in the business world. When you were talking about the training that you provided to the rest of the team and the company, How were those training oriented? Did you have to change a lot, depending on the roles and the teams that they belong to? How was that?**	
	Accessibility lead 15:56	
8.12	Great question. So I started off just talking to designers. So everything I was talking about was purely design related. And then I developed a training session, it was a two hour long training session. That was for everybody. Because I wanted everyone to be there. I wanted everybody to hear everything, even at just the high level. So I wanted designers to hit about page structure, about a little bit about HTML, not too much. So I also wanted developers to be hearing about colour contrast, because I wanted them all to understand a little bit about everything. So I think that is a really good way to start is to have something that's quite general enough for everyone. And then go into go do some deeper dives. Like I'm trying to get our engineers to build some code labs, for example for our engineers to sit and work through. I've created a uni course. We have a University. And I've created a course that 's called Accessibility and inclusive design. It's module one, so it's just the general, this is what it is, this is who it's for. And this is why we do it. And here's how people use assistive technology. And then Module two is going to be lots of small courses, that sort of different disciplines then are going to have different paths. The smaller courses, and the engineers will have code lines at the end. So the practical stuff. I think that's how so	AA

	yeah, it's nice to have some targeted, but the basic stuff can be very can be general,
	Cecilia Velasco 17:35
8.13	like the foundation.
	Accessibility lead 17:36
8.14	Yes, yes, exactly. And also, like in that two hour training session that I would do to squads. So that's mainly engineers, but also designers and product owners and UX writers. I would cover how to build and how to create accessible products. And we'll cover 10 things like colour, content, interaction, motion. But I want to, I wanted them all to hear that, all! so I don't know if that's the right way to do it. But it certainly gives everyone a good ground, a foundation, as you said.
	Cecilia Velasco 18:11
8.15	**Are those training compulsory, is it something that they have to do, or are they voluntary?**
	Accessibility lead 18:20
8.16	voluntary at the moment, but with my new accessibility champions network, and part of that has, it's going to have an onboarding process. So at the moment, anyone could be a champion, if they're, if I feel that a champion, I would call them a champion. But actually, now it's going to have an onboarding process, which includes doing that during that training. So that training only takes less than an hour to complete. So they have to be a member of the channel, Slack channel, they have to bookmark my accessibility hub, Confluence page, I have some guidelines and everything that we talk about on accessibility is on there. And then they have to have a half an hour one to one with me, when I'm going to take all their details and try and understand exactly what they're interested in and how I can help them learn more. So it'll be more personal. But that's a bit that's a very simple onboarding process, and then they will be a champion at level one. And then I've got level two, level three and have drawl descriptions now of what it means to be a champion at the moment. We don't have that. So I'm hoping to roll that out as well. Which will make it easier for them and hopefully get more activity happening.

	Cecilia Velasco 19:28	
8.17	**I'm really curious about the interaction of all the other departments because usually accessibility is oriented to developers, designers, but it's really interesting that in your case it is legal, product, is lots of departments, how is their contribution to this process of accessibility?**	
	Accessibility lead 19:55	
8.18	So everyone loves hearing about everything that's going on, as well, you know, it's not like our developers are still interested in what's in it for them in terms of what policies what, how they help our disabled staff. So, everyone's so interested. And I think that makes it easy for everyone to talk about it all the time. I have started grouping people. So, the internal stuff, like the policies and the office layout, they're part of a separate group as well. So, we talk separately about how we can improve things internally. But everyone's so interested. So, I think the pods, these pods are going to help as well, when we have them up and running. People can really focus on their area, the internal stuff, actually, I did have an internal pod as part of my plan. But actually, I've asked if I can move that out of my network into more diversity, equity and inclusion networks. So they have a whole separate area where we have a race network, we have a prayed network, which is all LGBTQ. We have a women network, and I want them to have a disability network. And that is where I would think the lawyers and the office managers and anyone dealing in internal stuff would sit rather than in my network, but it's not happened yet. So at the moment, we're all together. And it's quite nice. I like it.	O
	Cecilia Velasco 21:30	
8.19	how do you perceive the reception from the technical team in terms of accessibility?	
	Accessibility lead 21:55	
8.20	So, some of them are testing some of them. So we work in tribes and squads models. So, our squads are maybe 10 people, and most of them are developers. We have one product owner, maybe a designer, possibly a writer. So some of the squads have been incorporating accessibility for a while now. So they have it as part of their PR reviews. So once they've, once the developer has made the change, they'll create a product review. A PR template, I'm trying to think what PR stands for	
	Cecilia Velasco 22:37	
8.21	Maybe yes, Product Review,	
	Accessibility lead 22:40	
8.22	any product, yeah. Someone that's another person in the team must check it. And as part of that template, some teams have incorporated an accessibility checklist, which is nice. And they also incorporate some manual testing, and some unit testing, which they can do using jest-axe. So that's a tool and some of them incorporate that. We have a new testing platform called Cypress, which is part of the CI process testing. So just before that about to go live with something it will go through this pipeline of	T, TI, AA

	testing, jest-axe is embedded into that. So they can choose whether to turn that testing on or not. So some teams have it on. Some don't, some don't even have Cypress yet as part of this bigger rollout. But it's nice to know that it is incorporated into the testing platform. So it's just about encouraging and educating the teams to do it and the bit so the education piece doesn't ever stop. It's going to be continuous. And we just need to work out a good way of doing it. But mandatory training would be wonderful. And I was just talking about this to our Learning and Leadership team just last week, saying Could we please make it mandatory? Because actually leadership the week before had said yes, make it mandatory. But there's so many other things that they want to make mandatory, but it didn't feel quite right. So it's on the recommended list. So the new people will be asked to do it, not made to do it. But it's definitely on that recommended list. And when new people start, they do everything that you ask them to do. So	
	Cecilia Velasco 24:29	
8.23	at the beginning it's a good point, right? That is not like a high workload. You can spend some time trying to learn	
	Accessibility lead 24:38	
	as much as you can. So that's a great place to start. I'm happy with that, and then we can see what we can do over time.	
	Cecilia Velasco 24:46	
8.24	**Developers are also willing to contribute with accessibility. I mean they are familiar; they are into it. Do you know if they use any specific standard for the checklist?**	
	Accessibility lead 25:08	
8.25	We created guidelines for the developers and designers and rates are three different sets based on the Web Content Accessibility Guidelines. So based on WCAG 2.1, we're aiming for level AA. So the guidelines that we have, and the checklist that came from the guidelines is based on WCAG. But WCAG guidelines are so inaccessible in themselves, they're complex and long and challenging. So when I have a getting started guides, as well, for developers, and then they and I say, familiarize yourself with these, and this is for web, and here are the iOS, or Android equivalent. But I also point them to the BBC mobile accessibility guidelines. So the BBC are very well known for how good they are at accessibility. They've been doing it for years, and they are based on WCAG again, but it's reduced, and it's easier to understand. So I should point to that, actually, as well. And then the tools that we use, like jets-axe has all of that built in. So it's all based on WCAG. There's that and then there's the more who is a real person interacting with this, and you have to do both, you absolutely have to do both. You can't just rely on the compliance side of testing, it has to be that real people can use it. And where are the barriers that they're coming up against. Because it can be completely different to what you would think by just doing the check.	TI, T

	Cecilia Velasco 27:01	
8.26	**When you incorporate people and human interaction, Do you have a team? Or is someone that is just volunteering also for testing? How does it work?**	
	Accessibility lead 27:22	
8.27	So we've done it quite a few different ways. And we have a research team in the business. And one of the researchers who's actually on extended leave at the moment, I miss her. But she loved accessibility, she was a huge advocate of strong accessibility champion, she would run accessibility testing sessions for me. And we started off by contacting local charities like the RNIB, for blind people and dyslexia, Scotland. And we asked for volunteers. And we got small groups of volunteers who we have tested with over the years, either just on Zoom or are actually coming into the office before COVID. And, you know, we would pay them the going rate for an hour of their time, just as just as standard user testing. And it was, it was fantastic. So we did that ourselves. But we've also worked with an agency who have a panel of 500 people with disabilities, we've done some testing through them. And I'm actually now looking at different agencies to try and see who we might want to partner with on a more long term basis. Again, it'll be people, it'll be agencies who have a panel of people who we can tap into, depending on what we want to test. So it'd be a range of different disabilities. But I think if you're just starting out, going into charity is the best way we learned so much from doing that. It was really, really good.	T
	Cecilia Velasco 28:47	
8.28	**How, how do you manage all this knowledge that you're gaining from all this experience?**	
	Accessibility lead 28:53	
8.29	Well, it was difficult because it's so much. So I have a confluence page, that is the accessibility help. And there, I have links through to everything. So for the testing, I have a user testing section, and I log all of the testing that we do, and I have links to the videos of the tests and links to the notes that we took. So it's all there for anyone else to use. I would love someone to be on top of it, though, I would love to have a dedicated user researcher because we could be doing this every week. There's so much that I want to test with people and it's just too time consuming for me to manage. We have just done a brilliant testing session with a blind user who we work with quite a lot. We just basically went through quite a flight journey or setting up a profile journey for two hours and I just announced to the teams that I'm doing this who's going to come in who's going to ask specific questions about the business you're working on. There were 20 people on that call, which was great, you know, from all the teams working on the app, so they want to hear it. And again, just during that, I'm just taking notes of what the issues are, but they aren't as well. But I share my stuff, hoping that in overtime, they will be going and making the fixes but I'm not policing it. I just hope that they are.	AA
	Cecilia Velasco 30:26	

8.30	Yeah, but it's a huge amount of work. I mean, and you are preparing and managing all the logistics of the test, taking the note, uploading to the page!	
	Accessibility lead 30:38	
8.31	but I love it. So it doesn't feel like work. You know, there's, I'd love to focus on, ==I've been trying to focus on the network damping those changes. And because I think that will spread the amount of work I'm doing across some other people, which would be really nice. So that's been my focus for the first part of this year.== And we're both going to launch that on global accessibility awareness day. Actually, that's my plan. ==And we're also running empathy labs that day, where we have where we set up different stations around the room that simulates disability, and we invite people to come in, sit down, try on different vision impairment== goggles, have you seen the vision impairment goggles? So questions, I got them here. In one minute, I could talk to you all day. So this is something you can buy for about 100 pounds. These simulate cataracts. So the simulated vision impairments that cannot be treated with glasses. This is tunnel vision, muscular degeneration. So it asks someone to do something on their website with these. And you can see them going. I can't do that. I can't read that really small grey text. And you're like, boop, correct. You can't read the small grey text, make it bigger, make it darker? Yeah. So there's 10 of these in this box.	AA
	Aitanna Parker 32:16	
8.32	**Have you used those in your training? The glasses,**	
	Accessibility lead 32:21	
8.33	not in the training. Because it hasn't never been face to face. Actually, ==I was invited to talk in front of the exec team for the first time ever two weeks ago. And I took these and I got them all wearing these. So it was brilliant. It was there was the best thing to do==	AA
	Cecilia Velasco 32:41	
8.34	Because it's a perfect way to be in the shoes of someone that is actually facing disabilities.	
	Accessibility lead 32:49	
8.35	Also, there's these. These are handy. These are gloves that simulate arthritis. So you basically put them on and attach them to your fingers, and then get people to try and do things. And it's just so much harder. So yeah, the empathy labs, we've done them before. And we're running them again, on Global Accessibility Awareness Day. And I'm really looking forward to that. I'm just simulating stuff that's situational disabilities, as well. So we have a toy baby, getting people to hold the baby in one hand while doing something with one hand on the hitter. And that's just like, Ah, I didn't even think about this being a problem.	
	Cecilia Velasco 33:43	
8.36	Who is invited to the empathy lab?	

	Accessibility lead 33:46	
8.37	we will do it in the Edinburgh office in the London office, and the whole office will be invited, it will be open. We'll set it up in the morning. So we'll probably be open from 12 until four and people can just come along. Some of the accessibility champions will be there to help them guide them through the different tasks that we set up. But that is a really good exercise to get people on boards.	
	Cecilia Velasco 34:08	
8.38	Definitively. Have you done it before?	
	Accessibility lead 34:12	
8.39	Yes, with the pre COVID I'll see I can send you some pictures actually of what it was like before because it was great. Is there anything else you'd like I could that would be helpful for me to share with you. I'm gonna have to jump off onto another call but	
	Aitanna Parker 34:27	
8.40	I've done so much. We can talk literally all day. We're still interested. But we do want to respect your time.	
	Cecilia Velasco 34:32	
8.41	Yes, of course. And we are so happy to have you. You have a great experience.	
	Accessibility lead 34:40	
8.42	If you want to set up another call, I'm very happy to talk to you, maybe just after global accessibility awareness day. Okay, because that's on the 19th of may and I'm absolutely squashed until then. So yeah, after that. I'm very happy to chat again if it would help.	
	Cecilia Velasco 34:55	
8.43	Thank you so much. We are going to share the transcripts and everything that we have been talking about so you're sure that we are interpreting everything in the right way. Unfortunately, we need to complete our interviews this week. Because we need to complete our master thesis on May 20. So we are running a little bit with that but we are so interested that we will be in touch. Yes, definitely. Thank you so much for your time for your experience for I'm so happy you could make it	
	Accessibility lead 35:31	
8.44	Good luck with the thesis and I'd love to read it. If you are interested, I'd love to hear your take on it.	
	Cecilia Velasco 35:38	
	Oh, of course, we will be in touch. So yes. Thank you so much.	

8.10 Appendix 10 - Interview transcript participant 9

Interviewee Role: Interaction designer
Date: May 3rd, 2022
Duration: 40:18
Participant: 9
Researchers: Aitanna Parker and Cecilia Velasco

Item	Transcribed text	Code
	Cecilia Velasco 00:00	
9.1	**Okay, so for the purpose of the interview for tracking and everything, could you please introduce yourself? And maybe tell us a little bit about your experiences with web accessibility?**	
	Interaction designer 00:11	
9.2	And I am an interaction designer. So working with UX? Well, in general, I have a lot of experience with apps and web. I think more so with apps than web, but also applications revolving around IoT solutions. So general user interfaces. For instance, I've worked with a connected shower, a mobile phone, also, up until quite recently, a user interface on a headset, so more physical interface. And also a industrial IoT solution, which was a NFC scanner RFID scanner. And with that, a companion app to display data. per scan, basically. And with that, also, a full web app to go with that is an extra tool for more. So for admin users, more advanced users need to.	
	Cecilia Velasco 01:51	
9.3	**Yeah, in this role, when you're working with a UX and all this stuff, do you usually hear or incorporate all these concepts about web accessibility?**	
	Interaction designer 02:07	
9.4	That is, I would love to do it. But it's often at my workplace is more about getting something from posted to product. And that's more like a vision phase. Where do we want to go, we make the first version of it, and then we leave it to the company pretty much to our customer to continue development on their own. So we're working more in the initial stages. Of course, this might vary from project to project like your husband. Some customers are very detail oriented, and would like to me, or us to think about such things. Other customers don't really have the time or money to do that, because it's almost like timing to market business related issues that need to tend to. I on the other hand, I'm only always pointing to it. Now we need to focus on this because you will get more what's the word the term? If you invest time, money, and this now you will get that much in the long run. It's not always I have the possibility to focus on building a solid foundation and making the accessibility part speak to more people.	R
	Cecilia Velasco 03:58	

9.5	**Okay. So what I'm hearing is like, it depends basically, if the customer is accessible, oriented or not? So if you have the case, when a customer is asking for, usually how do you treat those requirements is something that you're like tracking all the development or how is accessibility incorporated? In those cases?**	
	Interaction designer 04:24	
9.6	It depends on the material maturity of the customer as well. If they're new to the business, they will want to make something that people are going to use. But they are solely focusing on the technical aspect of it. Then I need to say, Okay, who is going to use it? And then, you know, ask a lot of questions around that to regain an understanding of who their target audience are, and what they need to actually are. And that is a challenge, sometimes more so than I would prefer. But that's also part of part of the job, I guess to, whatever it takes given to, you know, tap in on who the end user is, and see to their needs. How can the last question?	R
	Cecilia Velasco 05:35	
9.7	**Have you had the case where they this target, the users that you're targeting? Are people with any kind of disability?**	
	Interaction designer 05:46	
9.8	Well, in one project or with one customer, or several projects with one customer who we can actually talk about, it's DORO. So the target group there is older people. In general, you know, it's smartphones, and phones and that type of communication technology for the elderly. If you know, DORO. You can look it up later. For [DORO] that this is key. For instance, they started out with I don't know, if phones was actually their first device or whatever they built. I can't remember. But, phones are a big thing for them phones and answering machines, the likes. And initially, it was big, big displays, big buttons, portable phones, you know, walking around your home, or court, folks with courts and stuff. With all the problems they might face anyone might face when they grow older, I have poor eyesight. Also, like shaky hands for lack of a better description of these things. They've, their whole product line line-up is basically or catalogue is oriented to elderly people. And then they came to my company. And it was even before my time I'd been there five years. They'd been a customer to my company, longer. They came to my company and wanted to help with building or releasing a smartphone. We've been involved with that more so from start with the technical underlying the development, both on the firmware level, but also like, app, part of it, basically the operating system, getting their version of Android into the phone instead of a typical Android, official Android version. So having a more branded version, which is also adapted for elderly, elderly from start. And they had their own design team, doing that initial thing, they still do get involved with that, but that was such a project where accessibility was the main focus.	O
	Cecilia Velasco 09:07	

9.9	**Of course, the core of the project. Do you know if they use specific standards to get all the features on maybe assess the compliance?**	
	Interaction designer 09:21	
9.10	I don't know. Because that's another design team doing? What I know there's been there was one interaction designer there in that team who did user research, prototype testing, usability testing, as well more focused on that part of the design, of course, severe.	
	Aitanna Parker 09:53	
9.11	**What type of adaptive interfaces did you use with that? Customer? I'm assuming because their target was is a bit different? Did you change like the model of how you implemented your UX or UI?**	
	Interaction Designer 10:07	
9.12	I was part of a side project. So I was not directly working on the smartphone development. For that it was more like, they wanted to explore how to build an ecosystem in the smart home basically, centring around protecting the elderly person base. So pretty much like a Smart Hub solution with connected devices for detecting false or the likes. But I know there was a lot of work around the smartphone interface and what happens when you change the zoom level. Or what's it called? I'm losing my words here. But you understand what I mean? So because out of the box, in my tongue with a certain setting, it needs to be easy for the elderly person to change that. To adapt to their needs, basically. Yeah. So yeah, I'm sorry, I can't really say about how does that process look? Because I was not working with it.	D
	Cecilia Velasco11:36	
9.9	**In other projects, because it seems you're like looking for incorporating this accessibility. How do you perceive the commitment of other departments or leaders, a about accessibility, incorporating that in the products?**	
	Interaction Designer 11:55	
9.10	I think, to some extent, everyone knows it's important. They might not know, what the what the what I mean, when I say, hey, we need to think about the accessibility issues or how different people are going to use this. From basically, we need to put ourselves in the mind of the end user. And people understand in general terms, that I'm talking about my workplace. But it's also like, I'm one of the few designers there. So, it's also hard to...where am I going with this? Basically, everyone sees the need for it. We have this communication with, with a customer. It's a lot about, it's a lot about depending on their planning and so on as well. And that might sometimes be a deal breaker, so to say. So, okay, so, we got to go with the bare minimum. In that case, the way we tackle it is putting only what you absolutely need in the UI, in order for you to make things work to solve the goal, which then use your house in relation to the company goal, and business goal.	AA

	Cecilia Velasco13:51	
9.11	**So in those cases, when they interface with extremely basic lighting minimum, accessibility is of course, like in the backlog, like is not consider, like for the first version, let's say?**	
	Interaction Designer 14:03	
9.12	Yeah, for the first version, they put a lot of trust in us as well. So it's not like we produce something, you know, using the iterative process, like, we start with the vision, your product should look at work like this. And we get the input from them. It's for this target group. So we propose something with sketches wireframes a bit later on and also mood boards and stuff to get the feel. With mood boards you can also highlight these issues early on, and make them understand okay, and sort of like doing an AV testing but as an the mood board format for them to see about, okay, you're targeting older target group. And here is the small letter size compared to this one, you know, which one do you think is appropriate use? Assume you, I've learned through not being direct, but indirect and no coming from the science of getting these issues addressed in different ways. Because not all customers are the same. ==So you have to learn basically, how to get your point across in different ways==. Yeah.	AA
	Cecilia Velasco15:45	
9.13	**What about your team? I mean, if you have other designers or developers that are with you, how is they their perception about web accessibility and the importance?**	
	Interaction Designer 16:01	
9.14	Yeah, my team. We used to be a bigger team. Now, it's basically me, and two industrial designers who also they are really heavy on the strategic aspect with a huge toolbox as well. So we complement each other workwise really well. Unfortunately, we lost a UX designer, two months ago, and before that, another one dropped off, you know, half year, one year ago, so it's a bit of a challenge that way. But then we also have the outsourcing part of my company, which is where we have a couple of designers as well, who I work really well with. ==But that's also depending on their availability. If they're in between projects, well, we can take them in, depending on if we have a project in house to run or not. So, so it's like we have a team, but it's not always that we can access and utilize each other.== That would be the best. I think also, this is typical for the for this type of business, which is my company is focusing on connectivity, IoT solutions and consumer products. More tech oriented around consumer products and phones, compared to other companies who focus on digital, got it mainly. So what else can't think access has pretty much the same problem, or maybe they have a better team setup. But it's also the challenge there to getting your point across internally and work with a team, which you because you're basically assigned to different projects instead of working centralized with a design team. Okay. You understand? So I'm	O

	in one project, the other designers another project, and that's how we work.	
	Cecilia Velasco18:41	
9.15	Yeah,	
	Interaction Designer 18:43	
9.16	I want to change this work more centralized together with the design team, we actually have this, this problem, the agenda, to actually put everyone together, because it's really hard to do stuff by yourself, if you don't have someone to and to exchange ideas and iterate on things, whatever.	O
	Cecilia Velasco19:13	
9.17	**With Do you think this kind of a structure that you're planning to make could be a difference in terms of accessing web accessibility, maybe like to establish as a team policy or something?**	
	Interaction Designer 19:28	
9.18	Yeah. I mean if you if you have that. Other things, you know, in a part of your process, I would, I'm thinking about the WCAG. thing that I just looked at earlier today, and it's a long list and it's really boring. So But I think as well, there are different versions of it more that are more graphical in nature, visualized in a better way more approachable way. That is something, I prefer myself, instead of reading these long and boring lists of things you have to cross off basically. Some work, you just have to do in the beginning. So, so having that, let's say that the focus is getting the accessibility part right from start added to the process, initially, that could make all the difference. I think, in my work I have it up here, but it's not defined on paper, or somewhere that this is the process. And accessibility is like, it's, it's more like, we know how simple interfaces work. And depending on it's something you have to build together with your customer as well, because you start on a blank sheet of paper, basically, every time and you listen to them. And you gain, an understanding of their end user. And hopefully, also you get to talk to them users in one way or another qualitative 10 People interview face to face, or qualitative and quantitative, survey wise or by some other method. And then you can also build around, okay, okay, people have problems with this. This works better. Okay, from an accessibility standpoint of view, how can we solve the things they have a problem with their? So I mean, to some extent, it's, it's in the back of my mind, always, you know, so it's, pardon me? It's, like a second nature. Yeah. But I think I think it needs to be visualized more. internally. I mean, for, for my, for my self, my sake, my for me, I know what I'm doing. But I think it's really important that it's visualized for your other colleagues as well, as well. And know that the developers also have this in mind because they need to implement it. So they, okay, 100% always have stumbled upon this part of the screen description, Android or iOS design guidelines, whenever they need to, as well if not in the design guidelines, then it's part of the developer guidelines as well. Think about accessibility. Issues are topic, the topic of accessibility.	AA

	Cecilia Velasco 23:45	
9.19	**You were mentioning that you think that it should be most more in the process, so it can have like, better visualization. When you when you talk about the process? Do you mean about the software development process that accessibility could be in all the phases? Or do you see that process?**	
	Interaction Designer 24:07	
9.20	Yeah. Well, it's more about getting a good understanding of the end user. Okay. I would say it's not like, think about accessibility, because well, that's part of understanding your user or the target group, I would say. But then again Yeah. It should be there in some way. To help you or anyone not forget about it. Because it's, it's really important. It's hard. Hard, the hardest wrong word, but it's, yeah, well, it is. It's a challenge to, to come later on and say, Hey, by the way, we need to also think about this. So I mean, if you bring it to the table from start and have that maybe as a list, you know, like, main title, or bullet point, accessibility and just naming a few of the typical things like, I know if some level, for instance, assumed UI for visually impaired people. You know, something, and just in the discussion in a project. Discussion with customer, you just mentioned these things. This will also help you to, yeah, as part of right now, I'm in a new project in a vision study part of it. So it's four weeks where we talked about, okay, what's needed? General level? This is a new device with Android OS in it, and the customer is basically yeah, we're going to have Android. Yeah. Okay, good. What else? What about your user? What's the target? Well, we have the context of oil rigs, and mines underground. Okay. So in normal Android UI, in those settings, what, what about accessibility? Gotcha. Yeah. So that's like, a lot of things come. And this is a good example of this. A lot of accessibility features come with Android, iOS, or iPhone, whatever. But the thing is getting it right for the end user in the context. I mean, okay, I have this, in this particular case, it's Android. And, you know, I should be able to adjust the brightness of the screen. Now, it's pretty simple anyway, but on the fly, when needed, or I should have a way, maybe automatically, the screen changes brightness, depending on the surrounding lighting. And that's, I mean, it's, it's already in the phones today. But having a way for other types of health else. To be more accessible when I need it. I don't, I should not have to go through the open the phone, go into the Settings app, and then scroll through a long list of different options, options, and then, you know, find my way down to the accessibility feature I want to switch on or whatever it is. It should be easier. Yeah. And of course, also, depending on whether if I'm using a camera up to I need all the various filter options, or maybe I should be thinking about stripping down the UI in this case, because that's not really what the end user will need. Down in the mind, for instance? I don't know yet. Yeah. So it's a thing where we need to find out and ask questions. First. Foremost, it's with the customer. And then next week, we're going to where they are going to have interviews with their customers who sells their current products on the market. So	R

	it's, you know, I would like to get in touch with an actual end user. But the next best thing is the one getting the feedback from selling devices. So I just hope they have a good Support Hub, you know, a channel for feedback to come that way. And that's one way of getting information.	
	Cecilia Velasco 29:46	
9.21	**Yeah, as you mentioned, it's a little bit harder when you take the feedback when the product is has been already launched. Right? It'll be easier if you can have all the requirements at the beginning.**	
	Interaction Designer 29:59	
9.22	Okay, sure. So this is a new device on the way, but there's already a pre or a current version out there. But they want to make a new one totally new to be, you know, the best on the market. They're already at number two, or almost number one, but they want to actually cement that position. You know, we want to be number one. Yeah. Okay. So we have to look at these things, you know, accessibility. Accessibility in this with this customer? is, you know, the thing that's going to make a difference.	
	Cecilia Velasco 30:47	
9.23	**Have you heard if in the previous version, they were they are one or two? They have some feedback about disabled users?**	
	Interaction Designer 30:58	
9.24	Yeah, no, no, nothing yet. actually, brought it up today in the meeting in the in the film in the morning. And so it's coming. It's coming, basically, I think, as a part of, you know, for me to be able to do my job. Good. And for me to also sleep good at night. Oh, well, then I have to ask, it's, it's better to ask too much than nothing at all. And yeah,	
	Cecilia Velasco 31:38	
9.25	yeah, I agree. Okay, do you have any other question?	
	Aitanna Parker 31:43	
9.26	**Yes. How do you see yourself incorporating web accessibility in the future?**	
	Interaction Designer 31:50	
9.27	In the future, I can say I've been in a project for the project I talked about earlier, regarding industrial IoT. That was a customer who didn't know what they wanted to do. Basically, they had an idea from the start. And my company was really quick. I was part of the vision study and procuring the customer to choosing us. Is that worth? Yeah, yeah. So they chose us made a couple of rough mood boards and some sketches, you know, typical scenarios, and also a really high level. Wireframe draft, you know, this part of the app, you have this and this part, do you have that and so on. Then we got that project. And half a year later, I think the main scanner was finished, so half a year. And then plus two or three months later, we have the first version of the app out another year after that, so year two, they came all of a sudden, now we want a web app. We need to have it done by	R

tomorrow. And that was pretty much it. Okay, so Okay, well we need to know we need to do that now. Okay. The complete end nightmare. Yeah. I was thinking about it yesterday because that's been a thorn in my side all along, you know, you know, but that's you know, part for the most part the customer prioritization, you know, what they want when they want it no matter what, okay? Okay, we will try to do something for you real quick, but there is no time to do anything. And also problem in this project was that they had no idea who their end users were was generally in a workshop environment with CNC machines, like cutting drilling and stuff in metal Yeah, so that was it. That type of user Okay. Luckily, I did get one filled with visit that one time, but definitely not enough. No real talks, one to one or anything with anyone, or prototype testing with actual end user So, anyway, long story short, coming to it. So they asked, they have this big ask web app. I think this was in March, and it was supposed to be production release to production. So it's called by June. Uh huh. Okay. So that that was a Yeah. It's never completed. It's still, you know, now I left the project. I was thinking, as I said, yesterday, I was going through in my mind, yeah, I mean, that doesn't comply to anything, you know, you know, it will just completely fail majorly. On all points. With no requirements. Yeah, exactly. So it was who? Yeah, it's, it's one of those things where you can't really do anything, but then you're asked to do something. And you know, the result will not be good, basically. Just do it. Okay. I know how to describe it more. But it's, I mean, I think next, in my next project, I would definitely say, hey, we have this list of things we need to check or cross off, in order to be production ready to be able to release this web app. And of course, I knew that at the time as well. But, you know, there was no time. And then, you know, once it was out, you know, it was always like, but we need to spend time on making it accessible, you know, you know, adapted to you, or to you or to him or her or whatever? No, no, no, because we need this new feature in. Okay, so it was a feature creep as well. Got it? Yeah. Yeah. So, in short, I mean, it totally depends on the customer as well. But also, I would say, to some extent, or very much, depending on what company you work for, and how the processes look there as well. Definitely, yeah. So I mean, my company is very good on the technology side, and also getting something from posted to product, nobody saw like, first release, and then it's meant to be iterated upon. So it's just helping them not visualize, but actually realize their vision, whatever it might be. So, I mean, yeah, I worked with these smart lighting solutions, for instance, one of these big furniture companies worldwide. And that was really fun. And they can't say which, but, of course, there we also had, you know, with a customer on their side, a really good relationship, because they had all this end user information, you know, because that's, you know, in the not user, but the, the person at home, in your home, they have a really good understanding about how this how to live in your home, and what you need in your home, because they always have that. Those kinds of talks with end users, and so as that fed our design process, you

	know, so we were already informed from start. Yeah, of course,	
	Cecilia Velasco 39:14	
9.28	nurture and from the beginning of all the idea, the perception of everything. It's a total different situation. Right. Exactly. And also for testing, right when you're testing you know, what you're testing.	
	Interaction Designer 39:29	
9.29	Yeah, of course. So, so. Yeah. I've been on many sides of you and depending on customer, you know, and seeing all different types of projects run. In every strange way.	
	Cecilia Velasco 39:48	
9.30	I know what you're saying. Yes.	
	Aitanna Parker 39:52	
9.31	We're wrapping up. Yeah, We are getting pushed out I think that will conclude our interview thank you so much	
	Cecilia Velasco 40:06	
9.32	thank you so much for your contribution for your experience	

8.11 Appendix 11 - Interview transcript participant 10

Interviewee Role: Accessibility Consultant
Date: April 28, 2022
Duration: 53:17
Participant: 10
Researchers: Aitanna Parker and Cecilia Velasco

Item	Transcribed text	Code
	Aitanna Parker 00:23	
10.1	**For the record, can we have you introduce yourself and maybe some of your experience as well?**	
10.2	I am an Accessibility Consultant for an accessibility consulting company that provides auditing services for very large clients. There's hundreds and hundreds of clients. The public can purchase goods or services. At any given time, I could be working on a simple project. Like, right now, I'm working on [project 1]. So they have a website, we purchase stuff, and mother's days coming up. And so that's what I'm working on now. I audit by run a screen reader through [web pages]; I do keyboard testing; I have some tools that were developed by my company that assists me in making sure that I have checked everything that needs to be checked. And basically, that will end up in a report that gets sent to the client.	
	Aitanna Parker 02:06	
10.3	**When you're doing these checks, what type of standard or guidelines do you follow? Where do those guidelines or standards end, and then you fill in some of the gaps?**	
	Accessibility Consultant 02:18	
10.4	WCAG 2.0 AA [compliance]. Depending on what the client wants, we will do [WCAG] 2.1. But in legally here in the United States, until the Fed adopts that, that standard companies don't have to abide by it. I came from a higher ed University, and they did WCAG 2.0 AA. We would recommend to the different business units, schools, and faculty, they're creating website that they that they go to 2.1, because it is expected that the feds will adopt that [2.1]. When that happens, it's easier to do it in advance than go back and to remediate it. It's just a small few additional thing they have to consider.	TI
	Cecilia Velasco 03:18	
10.5	**I would like to ask you in terms of requirements in the software development process, how do you usually treat accessibility in the development project in their solutions? Do [your clients] handle it as non-functional requirements? And at the beginning? Or how does it work?**	
	Accessibility Consultant 03:47	

10.6	No, they can be sued. If we find a violation, we will write up the violation, we point to the specific criteria, the success criteria, so that if they ever get sued, they can say, hey, we had our site audited, and these are the issues that leads that are because of the success criteria, or what you can get sued on. We map each violation to specific success criteria. Some of the success criteria overlap in certain places. And you might even have a cascade of failures of multiple for one at any one given component. Everything we do is to protect our clients from any legal recourse, should their sites be found in insufficient and in violation of the ADA law.	QA
	Aitanna Parker 04:49	
10.7	**And do you find that most people who hire you are hiring you to avoid litigation?**	
	Accessibility Consultant 04:57	
10.8	Oh, yeah, yeah. Services we offer, we offer massive services to big companies, then we offer our car stuff. So, we could do a very simple audit or just training; maybe they have development team that doesn't know a lot about accessibility. And they come to us, and they just need training to know the best practices and how to develop with accessibility in mind. They might not want a full audit. We also make software they can purchase or license our software and do the audits themselves, with training. So they can monitor all the new content that they put out there, rather than having us do it. But that's given that they have some somebody on staff or team that knows how to spot accessibility issues.	O,TI,QA
	Cecilia Velasco 06:04	
10.9	**In your experience, as you're talking about knowledge and training, what are the roles that usually your clients request training for?**	
	Accessibility Consultant 06:20	
10.10	It can be anything from like accessibility or awareness, people that are non-technical. And they might be managers or senior leadership, and they want to have an understanding of how accessibility impacts them in their business. I found that I did quite a bit of that in higher ed. I would offer a program and accessibility awareness, it would be an hour, an hour, and a half, and I'd walk through stuff. It wouldn't get very technical; we wouldn't start looking at code. Because we assume that's what's going on. But if we are having a training session with developers, then we take it to the next level and show them how the code fails. Show them the best practice how they would you fix that code, so that assistive technologies can recognize the components and make sense of the structure of the page.	AA,QA
	Cecilia Velasco 07:27	
10.11	**How do you perceive the reception of the managers, and the leadership's about this topic of accessibility today? Do they really engage with it? Do you think it's important for them to understand this?**	
	Accessibility Consultant 07:44	

10.12	But yeah, it's, it's, I mean, the accessibility industry has really grown tremendously. When I first started in it, I was working for a public government agency, and I was doing web development. Because they are the government, they're under 508. And they're supposed to provide accessible services to the public they serve. But little was known about it. And I would just kind of Google information. And I would read blogs, by these people that instructed users on what's important about accessibility. Now I work with these people. They are like my rockstars, and I'm like a little gushing, when I'm in a meeting with them. I've been reading them for years and now I am part of their team. The people I work with also are heavily involved with the W3C. They sit on various boards, they helped to come up with the standards, the technology changes, and there's all kinds of things that they do with accessibility in terms of regulatory organizations. Those people they are the principals of the company.	
	Cecilia Velasco 09:23	
10.13	**When you are performing the assessment, and the audit of your clients websites, have you perceived that they use those results in some way for continuous improvement in terms of accessibility?**	
	Accessibility Consultant 09:45	
10.14	Yes, overtime laws changed certain things. Higher Ed would be different for example, MIT and Harvard were sued by the National Association of the Deaf for their online classes. And it wasn't that they weren't captioned. They were out of sync for about five seconds. So if you're in a science class, and you're learning about covalent bonds, and professors, it's hard enough to keep up with professors scribbling on the boards. But if you're five seconds behind the captioning, the professor is already onto something else, the visual has changed. Of course, Harvard and MIT wanted to dismiss it, and it went back and forth for years. And then finally, it was upheld, and they had to pay some heavy fines and also abide by a consent agreement, which meant that, you know, they would have to go through all their online courses, and then implement the fix what was broken, and then implement that accessibility as a focus at the institution. If you look at Harvard and MIT sites that and you type in accessibility to get to their accessibility page, which informs instructors, students, and administrative staff about how things should be laid out, when you're developing a site. It is some of the best resources, so they did a very good job better cleaning up their act. It was, it was a stick that made them do it, not a carrot, but they are, they are a model for at least higher ed. And the university I worked for, took note of that, and they wanted to be proactive, they didn't want to have a lawsuit to make them do this, they wanted to start in early. With COVID, the demand is incredible because if you were a company and you weren't online, well, then now you are- you have to be, if it's possible that you can be. I mean, even a landscaping service they have to come to your yard, it's not an internet thing, but the way they market themselves and their services is all online. I noticed, I started seeing jobs or accessibility professionals. And it went through the roof. I mean, I was literally stolen from the university, by this company. They were relentless. They said we want you. The university job is a nice gig to have you're, it's very comfortable. It's a large organization,	AA

	and people are smart, and you got a lot of a lot of benefits and free education and so forth that. But they were like, No, you have clients with you, their business was going out of control, and they had more requests for audits than they had auditors to do the work. <mark>Now I'm seeing accessibility everywhere in, if there's anything good that came out of COVID is I think this is accessibility was brought to the forefront because people had to rely on remote</mark>, shopping, learning everything, even FaceTime, or whatever those apps are like, you want to see your relatives, but you can't. You go online to have a remote connection. So yeah, it has changed tremendously. And I think, at least in the States, the majority of good companies take it very seriously. In the bigger the company, the more serious they're taking it because they have more exposure. They might have many different platforms that are among public facing or internal facing with a lot of employees that might have disabilities. So yeah, even the financial sector is taking heat as well. That is another hot industry that's picking up.	
	Cecilia Velasco 14:10	
10.15	**Do you think this accessibility boom, let's say after the pandemic and everything is something that is sustainable within the organization's that are exactly that they are just doing a one time just like to meet the laws? Or do you feel they are actually creating the organizational structures or roles or something that are going to keep them in this trend?**	
	Accessibility Consultant 14:51	
10.16	I think that it's probably it's across the board. There might be a small a mom and pop company that wants to have a website put up. And they, if they don't do it themselves, they'll hire a design digital agency to do it for them. And they might be mindful enough to request that it's accessible. And that might be a one-off thing. And it will work for them until their company grows, or they begin to offer different products and services or whatever, and they need to update their content and expand. <mark>But larger companies, higher ed, they want people on staff that are accessibility evangelists. When I took the job for the university, they wanted in my job requirements, I was to be a change agent.</mark> That's how they phrased it in that I was to spread the word. And, little by little, and I was the only one that had accessibility in my title. So, <mark>they did have what's called the Disability Resource Centre, and I've worked with them, just that, that kind of thing on campus, you probably familiar with it, it helps students that need accommodations, basically, physical accommodations, or accommodations, with course materials, and things like that if there's videos or things, the fact that professor wants them to watch, they have to make sure that they're captioned or if they're now with remote learning, and the hybrid learning where attend class virtually, and then sometimes in the classroom, you have to have all this information presented in an accessible manner</mark>. So, if the professors passing out papers syllabuses or whatever, all of that has to be available electronically.	O
	Aitanna Parker 17:02	

10.17	**As far as when you are consulting with these larger corporations, what patterns do you see within their practices that raise long term implementation of web accessibility?**	
	Accessibility Consultant 17:24	
10.18	Most consulting agencies, accessibility consulting agencies if they are engaged call try to if they're engaged with a client for long, longer term it's a multi-year contract, say, it might be various web properties or even digital kiosks. Okay, we do a lot of that. Can you rephrase the question to make sure I answered correctly?	
	Aitanna Parker 18:00	
10.19	**I'm looking for practices that you've seen or patterns that you've seen for companies that have adopted long term web accessibility.**	
	Accessibility Consultant 18:09	
10.20	They will either purchase a product and have somebody on staff use it to monitor and do audits themselves. I've been seeing job postings for the financial sector, we need somebody accessibility. It, there's a lot of, they don't necessarily teach accessibility in, in computer science. It tends to feed into UI/UX. So that would be it'll be addressed. I sat on a committee for a while, that was talking about the standard of practices in universities and their mission was to get universities to implement some curriculum in every field that would address accessibility. So, if you're an engineer, and you're building bridges, there's going to be something about accessibility or designing buildings and architects and stuff like that. I think the built world with the architect as a model was well ahead because we all know, most people are aware of the curb cut effect. And that's how the ADA law kind of branched out but for people that were wheelchair users, they need to be able to get up on the sidewalks so they cut that but it also helps people that don't have disabilities a parent with a baby in a carriage, a delivery guy that's delivering a huge stack of sodas on a hand trolley, that get curb could helped all of them. So, If I think Universal Design is sort of the large umbrella that's over all of this. If you design for accessibility, you design for the widest number of users, then they might not have these disabilities, and especially as the baby boomers age the eyesight doesn't get better, it gets worse and you lose a sense of contrast. That's why colour is so important in the contrast between foreground and background, these things all come into play. If you wear glasses you're using assistive technology. It's very sort of, simple and basic technology. But that improves something about you that that isn't as sufficient. Maybe you use a cane or something like that, or we're using GPS is because some of us just don't have a sense of direction. All of those things would be classified as assistive technology.	D,AA, QA
	Aitanna Parker 21:14	
10.21	**And have you heard any pushback from leadership or developers who think that accessibility kind of takes away from usability? Have you heard that conversation pop up?**	
	Accessibility Consultant 21:26	

| 10.22 | No, I've never heard it that way. If they mentioned usability, they're thinking accessibility I mean, they go hand in hand. But I have gotten pushback where you've got a team of developers, the university I work for might hire an outside third party development team to work on some kind of, maybe it's a registrar application where students can add and drop classes. So they hire this team. And they realize that in the contract, it says it must be accessible to the WCAG 2.0 AA standards. I mean they might overlook that legalese. And then they realize, they would have include that. I would perform a test based on what they developed, and I come back and say, Okay, you gotta fix this, this, this. And there'll be some pushback from the developers who, weren't very much aware, or didn't learn anything about accessibility, it was just more work for them: hey, we developed a site, it works great, it plugs into your systems, and it pulls, all the stuff that it needs from the databases, and it's groovy. But they, they don't realize it, so you can get, I would have some back and forth I use JIRA, to log the tickets. And, they'd be like, Yeah, well, we're not going to fix this and like, okay I can't make you I am advising you strongly to remediate this portion of the application. If you don't do so then it, bring it up to management, or whoever is the product manager, and get them to put some pressure on them. It's gotten to the point where we had to bring in general counsel, because breach of contract, if they we had one particular vendor develop something that was it looks great visually, but it was, without any accessibility. And it was bad that keyboard users, you cited keyboard users couldn't even interact with the site. And they were, they were a smaller vendor, and they were very disgruntled about the extra work. And we weren't going to pay them extra for it, because it was already in the contract, you will do this amount of work for this amount of money. And these are requirements. And that was the case where they overlooked the that line item that said what you deliver has to be accessible with these according to the specifications so we put on a Do Not Use vendor list. But I see that happening less and less. That there's going to be pockets of people that are unaware. I find that generally, it least working at the university. People want to do the right thing. And most people were very receptive to it. Yes, it might cost money. It might take longer to complete the project. But once you explain it to them, they're like, Oh, yeah. Oh, and then they get this sense of inclusivity which it's already abundant in a college atmosphere. And they it says just that little portion of inclusivity, that they might have neglected, oh, okay, here's a whole another demographic that we need to make sure are included. I think a lot of people think accessibility stops at the built world, okay, because the elevators, we've got curb cuts we, we have walls in toilet stalls with hand rails on them. And so people can move themselves around. But they don't think about it in a digital manner. And I think that is that's what's got to get out. And I think COVID did quite a bit to bring that issue to the front | |
| | Cecilia Velasco 25:46 | |

10.23	**Now that you were talking about the developers that maybe can push back a little bit, and they don't want to fix the things, we have been reading that if you include accessibility at the beginning of the project, maybe it's easier, and the effort is not going to be that high if you do it at the end. And you need to basically fix all the other issues. What's your perception about that? Is it better in some other practices to include all the accessibility requirements at the beginning?**	
	Accessibility Consultant 26:26	
10.24	Accessibility gets brought in at the very beginning before for any line of code is written, and you have the discussion and set the expectations, it's a lot better than having the developers work on it, and then having someone tested for accessibility at the later stage of the project; that's when you hear all the groans and grumbling and we need to extend the project timeline. I also find that to be the case that when work remotely, we've been working with, at least in the university, with Romanian development teams, and people from India. It's like, in these parts of the world where accessibility is, you know, isn't, doesn't really come into play, if they have any laws at all. Actually a graduate student from China, I was a mentor for him. He wanted to get into accessibility, he specifically said, he chose this mentorship program that was for accessibility, because he wants to go back to China where there is nothing for- there's very little services for people that have disabilities in China. Sad at best there´s kind of like adult day-care centres, where people can participate in activities. But in terms of the digital world, there's nothing.	R
	Cecilia Velasco 28:03	
10.25	**Also, we have heard that the typical common, as you mentioned that it's time consuming, or it's hard and it's more work, have you found maybe help in sort of design patterns, or architectural components that can be reused. So developers can make it easier when they are designing and actually implementing the accessibility capabilities?**	
	Accessibility Consultant 28:37	
10.26	Very good point. At the university we were developing a pattern libraries that would sit on top of WordPress, because almost all the students, any faculty member that develops websites, it's on a WordPress platform. And these pattern libraries, each component, if you want it to drop down, you want it Hero elements and things like that, I would test each one of them before they made them available to the public. If they were developing internally, they could use these components. With some documentation, they wouldn't have to worry about accessibility of these components. I mean, there's always going to be some things that slipped through the cracks. But in terms of templates, like were Wordpress templates and things like that some of them say they're accessible, and they're not. And then some people tried to do what they call overlays. They buy this little product that will instantaneously make your site accessible if you add it to your website. Well, the jury is out that it is [proven] that having an overlay that to enhance contrast,	I

	and make fonts bigger is not sufficient to protect you from ADA lawsuits. They don't cover the wide gamut of accessibility needs, for all the different types of disabilities, and especially cognitive disabilities. Cognitive disabilities are far greater than all the other disabilities combined. So you're used to talking about people with memory problems, autism spectrum, people that are learning the country's language, it's their second language; all of this stuff falls under that. And it's one of the things I was very interested in. There's even if you're trying to buy tickets to an event or show and there's a timer to get the seats. And if you don't buy them, by this time, we're going to release the tickets to the next person in the queue; that can be traumatic to some people that have anxiety disorders. And so, there's a whole field about how you can work around that to make it a better experience for users that might feel that kind of anxiety. It's a tactic to get you to buy during a limited time only and the clock is ticking on. Amazon's doing that now they're trying it out with specials, you can buy a product for a certain low price, very low price, but you have to buy it within a certain timeframe. And they'll have the clock running. And I can see how some people will be like no, I can't enter my credit card information that quickly, blah, blah. It's one aspect of accessibility, I think, is kind of fascinating and not well understood.	
	Cecilia Velasco 32:10	
10.27	**For the testing, we also have a scenario that there are lots of automatic tools that I can download like Google extensions, things like that, that I evaluate my website, and I can have a report. What is your recommendation in terms of testing, when using these tools, or do you feel it's required to have a human intervention?**	
	Accessibility Consultant 32:43	
10.28	Some of the tools out there are pretty good. Automated testing and manual testing are two different things. We actually use automated tests, or sometimes they bring back false positives. And you gotta watch out for that. They are helpful for a lot of the it has alternative text or doesn't it's a binary switch for automated testing. It doesn't look at the page as a whole and that's where manual testing comes in. You start using the first thing, I do manual testing, open the site, and see if I can do all the tasks and navigate using keyboard alone as a sighted user, and then I put my headset on, and I listen to the screen reader. And as I navigate the site, we make sure that the rendering of the components is accurate to the screen here. If you have a drop down, it's supposed to announce how many options are in that list visually in your site, and you can see that it's a big list, it's 50 states or whatever. That information that sighted people have that non sighted people don't, and we have to supply that. Constructing these components the right way, using a lot of people like to do custom components, that's where a lot of accessibility errors get in. If you stick with native HTML elements, the accessibility is already built in there. A button element already has its states pressed, visited, whatever all those all those states. If you try to create a custom button, you have to build all of those features and attributes into that thing. And you might leave out some things that are very important to people that rely on an accessible site. I've done dropdowns where it will say has pop up list, but	T, I, TI

	it doesn't tell you how many items are in the list, or where you are in list two of five. In it like that, that kind of thing, if you can't see that information helps to paint a picture, a map, a mapping of how this site works. Headings, visually, we can style headings to make them look big and bold, but they don't have any semantic value to them. So people that use screen readers use headings as an app, navigational aid. The relative importance of the heading, you know how big it is h1 to h6 gives, gives context of the content that follows the heading. And it also gives relative importance. So we see the big headline, when we look at a new site it's the biggest text on the site, we know that this is their feature article, this is, what they're promoting, or whatever. All of that has to be conveyed. In HTML. And basically, assistive technology lives and dies by HTML. And developers and development platforms sometimes generate the HTML, they don't generate the HTML correctly, or they add too many things into it, or I'm not sure if you're familiar with ARIA. ==ARIA is a is a bridge between where HTML leaves off. And it adds some different properties. And attributes that are identified by the screen here are assistive technologies to create a fuller picture of what's going on. Use a custom control like sliders, there's no HTML tag for a slider.== So you will use ARIA to tell the max and min and current value whatever maybe shopping for a house, you can I want a house from 200,000 to a million dollars, and performing a search and use that slider to set the that range. So visually, you can construct that with JavaScript and everything. But the screen readers and assistive technologies don't care about CSS or JavaScript, it all comes down to what is in the output in HTML. The platform that developers use can make a big difference. Salesforce, big development platform, it outputs junk, in terms of accessibility, it looks whatever it does, it looks great on screen, but it's not putting things out. Everything is a div or a span and then classes we're adding, that conveys nothing to basically when I test it, it'll say it'll say generic animal have nothing about it, the role like, a button has a role of button, a list has a role of list. And so if they're using divs, and spans, you have to give these things roles so that it will communicate what that element is to the assistive technology being used.	
	Cecilia Velasco 38:27	
10.29	**When we start to talk about guidelines and the success criteria, everything for a manager or for a developer that are new in the topic, it can be overwhelming, like, No, this is too much. How do you recommend starting this journey in the developers, maybe prioritizing some of the guidelines? what is the strategy?**	
	Accessibility Consultant 38:51	

| 10.30 | Yeah, I mean, there's a lot of sites out there that people can start learning about accessibility. They vary depending upon the type of person or the type the type of information the person wants. So it could be just sort of generic in informative tell you why things don't work or whatever. But then you can get into more technical, free sites that will show you how this how to create a, these are a lot, a lot of these things are blocked, how to create a date picker, that's accessible that if people take them for granted can you click that little calendar icon and up comes and you can pick a date from a day in the calendar? Well, that's extremely complicated to recreate an audible rendering in being able to navigate that calendar with the cursor keys, or maybe this key trap, the keyboard trap, and the person can't get out once they get in. And so there's many, many considerations and it gets. Some more technical blog sites will go in and walk you through piece by piece how to do certain things. This is where I started when I was younger, in just getting involved. And I kind of fell into this by happenstance and a lot of people that I'll go to conferences for accessibility, and everybody that I worked with, they came into accessibility, by chance that wasn't their major, because there was no major they, they started somewhere, and they required it, or maybe they their, their native users, they might have been blind, and so that they're using screen readers, and we're the jobs for them, if you're a blind person seeking jobs, and so we have tons of blind people at our company that will test using a screen reader and they can cover way more ground than I could, because they just they know how to navigate and all the shortcuts and stuff like that, as a sighted user, I'm getting better at, I'll never the speed on their voice for their screen meter is extremely fast. And they're picking up all this information extremely rapidly. And I'm very impressed in how they interpret things. We did some user usability tests, and we recorded them and basically had a computer programmer who was blind. Go to a site, we gave him a site to go to, and basically tell you walk us through what they're thinking, we gave them some kind of tasks maybe fill out a form or sign up for a newsletter or something like that. And it was very interesting, because the user came to a carousel that was showing images of college different things like that. And there's the Previous and Next buttons, there's certain controls or thumbnails of the images. So, but it wasn't marked up correctly. And only way kind of figured out what it was, is that he could hear the name of the slot that the slide and it was there, they were named slide one, slide two. And by that slide one jpg that kind of thing. He said, I think it's some kind of gallery view or a carousel, and just the way his detective work and trying to figure it out, in most people that have disabilities have incredible adaptive behaviours. They survive, and you figure out, if you've come to a site, and it's not accessible, you think of ways to get around it, you might not have the best or efficient experience, but you've been facing this for probably most of your life not all of it. And you what they say is your disability is the one minority group, anybody can join. | |
| | Aitanna Parker 43:28 | |

10.31	**Right. And off the speaking off of that, for the conversation of WCAG isn't enough, what type of things do you recommend to your clients that aren't necessarily within WCAG 2.0**	
	Accessibility Consultant 43:44	
10.32	the other stuff that's coming out and get exposed to it, there are some things where WCAG 2.0 doesn't meet because the technology didn't exist before or the ability to do something digitally wasn't available at the time those specs were written. So they're the people that I work with there, they sit on these boards, and basically one of the one of the board's my co-workers eyes, the board for synthetic speech, synthesized speech. And that is a whole topic. You know, we have language tag that indicates the page language to the screen reader. If French isn't specified, the screen reader will pronounce the page in French words as French with French diction, and, and inflections and all that. But there's still some words like content and content. How do you get those these are things that humans can pick up, but how do you get some kind of artificial intelligence built in to understand the context of that word, and be able to say it in the correct manner. There's, there's tons of those things like how to ensure acronyms get pronounced correctly, sometimes you want the acronym to be spelled out, FBI. But I've worked in the ITS department, and they in that screen reader said: It's. so, I'm fascinated with that kind of stuff. It's, very interesting, I was always fascinated with languages. So this is just, this is a computer artificial intelligence. So these are, these are things that I think are on the horizon to be included, as in upcoming specs. And especially for mobile platforms, there's issues with reflow. And there are some guidelines to reflow right now. But mobile development is leaps and bounds ahead of where the current markup leaves off. So they're playing catch up. And these any suggestions have to go through a team and analyse pros and cons and voted on, come up with some kind of schema how they're going to do it, then, regardless of whatever they come up with, the browser's have to be able to incorporate them and deliver that information presented by these new tags or properties and attributes. It has to recognize them and communicate it through the screen readers API, or the accessibility API. So there's it's not just a one and done thing, you have to go through this whole process. And it takes a while to roll out anything new and substantial. I mean, if you've ever done any web development, in the past 10 years, browsers are not, none of the browsers are standardized. One browser might interpret code one way or different they, a lot of the stuff falls into the same bucket. But then there's outliers, where certain browsers handle things differently than other browsers. It with screen readers that screen readers are usually paired with one browser or another specifically, to work their best. Like Jaws is paired with Internet Explorer in Chrome, it will give you the best experience. Screen readers will look at a page and they will find any problems with the page. And they'll try to do some what they call "spackling". So if the screen readers see incomplete tags, it scrapes the page and creates a virtual document. And to give the user a better experience, if it finds errors in the page, it patches them with certain algorithms. You can have mistakes. It's similar to the way that some browsers will patch developers mistakes, and try to render the screen the way they	QA,

think the author intended. So there's a lot of that with screen readers. And that's incredible. The stuff that it does, it can't do everything, but it can fill in some of those unpleasant gaps that might make the experience a little less bumpy for somebody using a screen reader. I think the author intended this to be a checkbox. It's not following the design pattern exactly. ==But I will add the necessary code into the virtual document and convey that information to the user.==

	Cecilia Velasco 49:09	
10.33	There are lots of variables right to consider.	
	Accessibility Consultant 49:14	
10.34	Yeah.	
	Cecilia Velasco 49:16	
10.35	Okay. Any other question?	
	Aitanna Parker 49:22	
10.36	No, that was so well, so rich in information. Thank you.	
	Accessibility Consultant 49:28	
10.37	You're welcome. You find most people in accessibility are very passionate about it. Like to share it.	
	Cecilia Velasco 49:39	
10.38	But that's great, because it is like, you are spreading the culture. And that's something that is really interesting, because we think that if you get to know about accessibility, you will never forget about it and for everything you change your mind. So It's really nice	
	Accessibility Consultant 50:02	
10.39	I went to a hotel that they had a restaurant and then I asked to use the same where were the where the restrooms. And so the waitress pointed me towards where they were right away my mind is always thinking accessibility. So in the woman's room, it was a piece of plexiglass with a W and an M, on top of silver. So this was basically, you know, it was 3D kind, but there was no contrast, to see that you need good vision to be able to detect that contrast in the dim lights that they have with the hotels. I was like, oh, yeah, that's not accessible.	

	Cecilia Velasco 50:46	
10.40	That's what I'm saying is like, you start to see everything with your lens. But that's great. I want to thank you because it's been a tremendous hour of knowledge and experiences. We would like to keep talking all day. We know your time is limited. But thank you for giving us this time, this almost whole hour, thank you so much, thank you.	
	Accessibility Consultant 51:21	
10.41	But they, they do promote this at my work, you know, to as long as we don't share company secrets, according to discuss accessibility, we are supposed to have you know, we do our auditing, which is billable. But they want you to get involved in like the W3C in other things that are not billable to clients to advance your knowledge or spread knowledge. I can this down as a non billable hour, You know, fit? I was it was all about accessibility and sharing it with you guys doing a it's you said a master's Project and thesis. So yeah, that's great. It's, I won't get scolded.	
	Aitanna Parker 52:08	
10.42	Perfect.	
	Cecilia Velasco 52:11	
10.43	Thank you so much. Have a great day,	
	Aitanna Parker 52:15	
10.44	have a good one.	
	Accessibility Consultant 52:16	
10.45	If you can send me a document of this program or what you did, you can give me a like a little blurred paragraph, I can present that to my manager. So he has an idea of what I do.	
	Cecilia Velasco 52:29	
10.46	Of course, yes, we can share that. And also, as we mentioned at the beginning, we will share in the next two weeks, I think the transcript of the call and how are we interpreting everything in your words, everything that you said so we can be aligned. And you we expect to have a feedback from you. In case we didn't catch something in the sense that it was supposed to be so we will be in touch for sure.	
	Accessibility Consultant 53:02	
10.47	Thank you very much.	
	Aitanna Parker 53:03	
10.48	Yes, no problem. Thanks so much. Bye.	

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