Minor Thesis

The Issue of Accessibility:
Considerations when Designing for a Worldwide Audience

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ABSTRACT

With the growth of the Internet and the Web, many products available via these media are available to a wide and varied audience. The traditional notion of good, user-centred design is thus harder to accomplish, with the designer having problems identifying who the user is. Combining this with the issue of accessibility, referring to equity of access to the information offered via the Internet, designers could benefit from understanding the factors that impact on accessibility. The various issues identified as doing so can be categorised into three groups: cultural, social and technological factors. Although it is conceivably impossible to guarantee equal access for all users, by examining these factors web designers can get an understanding of their impact. If taking these into consideration when creating web products, designers can endeavour to maximise accessibility for all users, irrespective of the users' skills, location or circumstances.

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INTRODUCTION

This paper examines the issues that have to be considered when designing products for the Internet and World Wide Web in the realm of accessibility. With multimedia products and mapping applications now widely available via these media, a large and varied audience uses the products. Good map design, traditionally, focuses on the expected user group and maps are designed to fulfil the needs and abilities of these users. However, with the emergence of this worldwide audience, it is more difficult for cartographic designers to identify who the user is. Although a target audience may be chosen for design purposes, the product is still available to everyone who has access to the Internet, including non-intended users who may thus have problems accessing the information provided. This brings us to the issue of accessibility, identified by the World Wide Web Consortium (W3C) (1999) as an important factor of the Internet. It refers to equity of access by all people to the information available on the Web and Internet. If accessibility is reduced, the user will be disadvantaged and may not obtain the same information available to more accessible users. To avoid this, it is necessary to examine the causes for accessibility. In doing so, web designers can take these factors into consideration when creating their product for the Internet, and thus endeavour to maximise accessibility for all users.

All websites including those that contain maps have to regard the same accessibility issues. Additionally, good user-centred design is not solely for the purpose of the maps but relates to all types of design. The overall focus of the research is therefore to examine the issue of accessibility in a context of web design in general, rather than just from a mapping perspective.

The paper will firstly introduce the term accessibility and identify the issues that impact on it. This is followed by summaries on two aspects of cartographic design, the cartographic communication model and usability, with the aim to put the research into perspective in regards to accessibility and good, user orientated map design. Following this, three major issue types identified as affecting accessibility will be discussed. These are cultural issues including language, colour and symbols, social issues involving matters such as disability, gender and age, skills, economic factors and legal matters, and lastly, the technological issues relating to computers, Internet connections, telecommunications network and infrastructure. A final conclusion will complete the paper.

ACCESSIBILITY

With the emergence and subsequent growth of the Internet and the Web, the issue of accessibility has arisen, with accessibility defined as equal access for all users regardless of their ability, age or technical equipment (W3C 1999). The W3C has initiated a set of standards and guidelines that are meant to provide equal access. Cartwright (2003) adds to the notion of accessibility by stating that information should not just be accessible, but also usable. Thus irrespective of the computer or mapping skills of the user, everyone should be able to access a website and use it for its intended purpose. Nevile and Ford (2007) expand the meaning of accessibility by assuming it to be equal access to information on the Web for anyone, anytime, anyplace, and introduce the term 'universal accessibility' to signify this. They propose that universal accessibility may be achieved by adding extra information or provisions beyond the conventional methods and technologies, required by some users in order to gain the same level of access as the majority of users (Nevile & Ford 2007; Brophy & Craven 2007). Amalgamating these ideas gives the broadest concept of accessibility, that everyone should be able to access a website and use it for its intended purpose, irrespective of skills, location or circumstances.

W3C (1999), although initially defining accessibility in relation to disability, broadens the issue with a range of other factors that web designers ought to consider regarding possible users. The factors are firstly connected with physical disabilities such as sight, hearing or movement, the inability to process certain types of information or text, difficulty with reading and an inability to use a keyboard or a mouse. From these considerations W3C moves to the realm of technology, stating that, for example, a small screen, the speed of the Internet connection or simply not having the latest version of a browser can also affect accessibility. Finally, other issues like the choice of language and conditions of use that may influence the ability to use certain senses are identified, such as when the user is surrounded by noise, whether by choice or not, or using an in-car navigation system while driving (W3C 1999; Nevile & Ford 2007).

When combining the factors put forward by the W3C with the notion of access for all, anyplace, anytime as proposed by Nevile and Ford (2007), a series of design considerations can be identified. These can broadly be divided into three categories: cultural, social (Cartwright 2007) and technological (Brophy & Craven 2007). Cultural issues relate to language, colours and symbols. Social differences are found in age and gender, disability, economics, skills and socio-economics and legal issues, ethics and censorship. The third technology category looks at computer related issues, Internet connections, telecommunications network and infrastructure. Differences in

people's cultural and social circumstances, and varying technological ability both in relation to suitable equipment as well as from an individual skills' perspective, can lead to reduced accessibility, often outside the user's control. The three categories additionally are interconnected, and some topics like age or gender may limit accessibility when viewing them in a social context, but it may also have an impact on technological ability, resulting from lack of education or aptitude to grasp certain information.

Before analysing these further and despite the focus on general web design, to put the issue in perspective with good map design, two integral elements of cartographic design that are connected with accessibility will be discussed. The first component is the cartographic communication model, which explains the role between the designer and the user. The second issue is usability, an important characteristic of good map design and one that ties in with the earlier proposal by Cartwright (2003) that maps should be usable as well as accessible. If users lack accessibility, the cartographic communication model would not work, resulting in a decline in the map's usability.

Cartographic communication model

There are various theories on cartographic communication models, all of which identify a relationship between the map designer and the user. As stated by Dudycha (2003), maps are "part of a communications process in which information is conveyed between the map maker and the map user". Robinson et al. (1995) assert that this communication process is synonymous with map effectiveness. The map effectiveness and thus the efficiency of the communication are enhanced if both design and usage are considered. However, it is also acknowledged that noise exists, originating with the user or in the design, which may alter the message conveyed in the communication (Dudycha 2003). Cartographers require a diverse set of skills in order to be able to communicate their message through maps in an effective manner. With the change to designing for a wider audience and having little knowledge about the user group, it is increasingly important to adjust design of maps with this in mind.

Usability

According to the United States Department of Health and Human Services (2007), the term usability relates to how well a user can utilise a product. It consists of three aspects: how easy is it to learn how to use the product, how efficient is the site once the user knows how to use it, and lastly, the user satisfaction with the product. Van Elzakker and Wealands (2007) identify another factor alongside usability: utility. Utility is about offering the right information and functionality,

and together with usability forms the basis for 'usefulness'. The usability part guarantees that users can use the functionality and find information in an effective, easy manner therefore making for a useful, accessible product.

In order for the cartographic communication model to be effective and provide equal access to all users, map design considerations have to be carefully planned and implemented. Good map design is of essence to the effectiveness of the map and the ability, by users, to retrieve the information that it holds. Usability of a map, thus how well users can use maps effectively, is directly connected to accessibility. Designing for a worldwide audience should encompass knowledge of cognitive behaviours (Robinson et al. 1996) as well as an understanding of cultural, social and technological differences that are found amongst the users, all of which can impact on a map's effectiveness and thus limit accessibility.

CULTURAL ISSUES

The first category of issues considers differences relating to culture and looks at language, colours and symbols. Cultural factors take effect because of the international audience that has access to a website. According to research, four out of five identified elements of world culture impact on the effectiveness of a website (Hofstede cited in Bernard 2003). These dimensions are described by Marcus and Gould (2000) as relating to power-distance, individualism versus collectivism, masculinity versus femininity and the avoidance of uncertainty. They identify how countries and societies operate and describe cultural and social systems and values. The power-distance aspect relates to the level of power distribution and acceptance of this distribution by the people. The other three consider the level of individualism, the degree and strength of masculinity, thus the degree of importance of the conventional male position, and lastly, the amount of concern that exists about uncertain situations (Bernard 2003). The level at which these dimensions exist within a culture, may influence the response of its people to the design of a website or mapping application. For example, a highly interactive map, with links to other information and incorporating a high level of control by the user, would be suitable to cultures with a low level of uncertainty amongst its people. Some cultures put a higher emphasis on the overall organisation and look of a product over actual substance of the content (Winter cited in Arnold 1998). Thus a website that was not designed in an appropriate manner would fail to communicate its message. The cultural issues encompass various components, three of which will be discussed next: language, colours and symbols.

Language

Language is an issue, simply because if users can not understand the language of a website, they will have problems using it. Generally, a country that has more than one official language will offer multi-lingual websites (Cartwright 2007). But there are also non-native speakers that reside in a country. The Department of Finance and Administration (2004) deals with the issue by providing guidelines for access and equity for websites, and straightforwardly states to "Use plain English on the website, which is more easily understood by people from diverse backgrounds as well as by other Australians". In the instance that a user does understand the language but is not a native speaker, there are other considerations. The language should abstain from use of slang or colloquialisms that would only be easily understood by users native to the language and the origin of the website. Most Australians and Americans both speak English for example, however, the Australian idiom includes words that many Americans may not recognise and vice versa.

For web designers that target a worldwide audience the issues are conceivably more complex. If the text is translated into a local language, it is important to allocate the highest precision in doing so (Winters cited in Arnold 1998), to ensure that the information on the website can be accessed accurately and is easy to read and understand. Subbiah (cited in Arnold 1998) confirms this need, stating that language is all about the way in which people read and write. Non-native speakers of a language, despite having fluency in it, structure and choose their words and their patterns differently because of inherent cultural differences (Dennett cited in Arnold 1998).

When targeting a worldwide audience, designers may further need to appreciate the relative decline of English on the Web. The Internet has grown so much that English, although still the dominant language of users in sheer numbers, lags when looking at the percentage of English versus non-English users. Only 31.2% of all Internet users speak English (Internet World Stats 2007). The reason why English tops in actual number of users, relates to the fact that English has the highest amount of native speakers.

As shown in Table 1, when considering what percentage of people that speak a specific language use the Internet, Japanese, German and Italian are in the top three. And growth figures indicate that Arabic, Portuguese and Chinese languages are at the top with the number of Arabic speaking users having grown by a staggering 940% (Internet World Stats 2007).

Current top 3 languages as a percentage of the population that speak it:	Top 3 languages on the Internet that have grown the most from 2000-2007:
1.Japanese - 67.1%	1.Arabic - 940%
2.German - 61.1%	2.Portuguese - 524%
3.Italian - 52.9%	3.Chinese - 469%
(English - 17.9%)	(English - 157.7%)

Table 1. Statistics about languages on the Internet (after Internet World Stats 2007).

Colour

The second aspect of cultural issues is colour. Colours are connected to emotional and cultural associations and can impact differently on users of various cultural backgrounds. They give varying emotional reactions that can affect accessibility. Colours can even have an opposite connotation when looking at different cultures (Kyrnin 2004). Table 2 shows numerous examples of existing colour associations and symbology in various cultures and countries.

	Red	Yellow	Green	White	Blue
Eastern Culture	Bridal colour			Funerals	
Western Culture	Excitement, danger, love, stop	Hope, hazards, cowardice (USA)	Spring, new birth, go, environment	Brides, angels, hospitals, purity	Depression, sadness, conservatism
China	Happiness, good luck	Wealth, power	Ming Dynasty, clouds, cheating	Death, purity	
India	Purity	Success	Islam	Death, purity	
Japan	Anger, danger	Courage	Future, youth, energy	Death	Villain
Egypt	Death	Mourning	Fertility, strength	Joy	Virtue, faith, truth

Table 2. Cultural associations with various colours (after Bernard 2003; Kyrnin 2004).

Although choosing the right colour may be difficult if the audience is broad and diverse, considering the appropriate use of colours would be a key issue in order to ensure users are not immediately offended by the web product, or distracted by the colour choice in turn impairing the communication of the information. Additionally, by considering both colour and language, if translation is provided into different languages, for example Chinese and Arabic, it may seem appropriate to also 'translate' the colours, and adapt them to better suit the target audience of the particular language.

Symbols

The last cultural factor that will be discussed is symbols, that is, the use of icons and gestures. Kostelnick (cited in Arnold 1998) states that cultures are too diverse to have a global system for symbolisation. Although a global approach can be attempted, it is vital to understand cultural differences in the use of icons and gestures. He further implies that the use of graphic symbols can assist with the ease of translation, an issue Horton (1994) agrees with. Horton argues, however, that badly designed symbols can lead to miscommunication between the designer and the user. Some symbols are strongly culture-defined because what they represent is not available in or of relevance to another country. For example, a supermarket basket versus a trolley utilised in the United States and England respectively (Cartwright 2007). Using inappropriate symbols that the user cannot recognise or identify with therefore reduces the accessibility of the web product.

Horton (1994) outlines general considerations for the use of icons and gestures. These include the use of non-representational images of people, that is, simple symbols without applying race or gender whenever possible, and the avoidance of body parts, especially hand signals, altogether. The hand sign commonly used in western cultures for 'halt' or 'stop' or the thumbs-up sign for 'ok' both have different meanings in other cultures. The same goes for humor and verbal analogies in symbology, which are easily misunderstood, like the computer mouse being portrayed by a picture

of the rodent. Lastly, mythological and religious symbols as well as the use of animals are strongly tied to culture and should thus be avoided. An example of the latter would be an owl, which represents wisdom in western cultures but is considered a vicious, unintelligent animal in southeastern Asia (Horton 2004).

SOCIAL ISSUES

The social factors impacting on accessibility appear linked to culture and technology, and one often can be a direct result of the other. For example, gender related accessibility problems could stem from the culture of a country, where men and women have traditional roles. This could result in different education opportunities and thus in both varying abilities and opportunities in accessing the Web. Economic variables can be linked to technological issues, such as not having the financial means to purchase better computer equipment. The individual social issues are further interconnected, with some falling under the umbrella of socio-economics with links between for example economics and skills or age. It will be attempted to discuss the various social issues individually, however, the relevant connection to other areas is often unavoidable.

Disability

The W3C (1999) has led the way in providing guidelines to maximise accessibility for disabled people through the Web Accessibility Initiative (WAI) (Nevile & Ford 2007). Brewer (2005) outlines a broad range of everyday accessibility problems that disabled people may encounter, such as a reporter with repetitive stress injury needing to submit articles online, or a hearing-impaired online student who has been given his course materials as audio lectures. If the online material is not adapted to suit these users needs, they will be unable to access the information. There are solutions to ensure accessibility with certain disabilities, like special screen readers and text or voice-based browsers for the visually impaired. Simple solutions that can be incorporated into the design of a web page are providing keyboard functions as an alternative to mouse actions for users with motor disabilities affecting their movement. One solution may often benefit not just people with different disabilities, but also users who are not disabled but may encounter limitations due to their geographical locations or age. The approaches to ensure accessibility are to incorporate assistive and adaptive technologies and strategies beyond the standard techniques (Brewer 2005, Nevile & Ford 2007).

Age, gender and ethnicity

People of varying ages differ in many ways, such as their perceptual and cognitive behaviour, their attitudes, their physical or intellectual ability or even their financial means (Brewer 2005). An elderly pensioner may have a diminishing functional ability such as vision or mobility, as well as limited financial resources. Children may have different needs due to still undeveloped intellectual abilities or their perceptual behaviour and tendencies. Kyrnin (2007) suggests that the elderly and children for example, tend to prefer different colours, and would therefore respond differently to a

variation of these. This also applies to gender with males and females favouring different tones and colours. Additionally, there is the consideration of colour blindness, occurring more often among Western men, and which affects their ability to see or distinguish between specific colours (Brewer 2005; Kyrnin 2007).

The disparities found between age groups and gender often relate to differences that exist for a multitude of reasons. A society may be more male orientated, with women having certain roles and lesser opportunities for education, and thus a reduced chance to access online information. The literacy rate of women versus men is still not equal (United Nations Statistics Department 2007), with major discrepancies apparent in various regions throughout the developing world. As literacy can be deemed a vital key for enabling access to the Internet, this opportunity is thus diminished for many women. The contrast is so stark that the International Communications Union (2007) has identified the gender inequality in accessibility as an important issue that has to be tackled.

In regards to accessibility issues relating to ethnicity, research in the United States showed in 1998 that there was a gap in computer access between different ethnic groups, with less people of African American and Hispanic origin owning a computer, thus reducing their opportunity to access the Internet (National Telecommunications and Information Administration (NTIA) 1999). Comparable figures published in 2003 showed a non-use of the Internet by the same two ethnic groups. Looking at related statistics depicting income and education, the three appear interconnected, thus indicating that income and education may affect accessibility amongst certain ethnic groups (NTIA 2003, NTIA cited in Cartwright 2007). Looking at Australia, Dyson (2004) states that for Australian indigenous people the accessibility to information on the Web is due to geographical location, cost and a generally low computer literacy amongst the indigenous population. The geographical location, often in isolated areas, means that the available communications network and infrastructure is inferior to those of other Australian regions.

Skills and education
Conceivably, possessing a certain level of computer literacy and knowing how to access the Internet will enhance the opportunity to find information on the Web and thus increase accessibility. Users' own perceptual and cognitive skills can play a role here, but having technical abilities would further assist with this. These latter skills can be achieved through education or improved through experience. A key component of education is literacy and, as previously mentioned, the literacy rates for men and women are not equal. Education opportunities is not equal for certain ethnic

groups either (NTIA 1999), nor for different countries and regions in the world (United Nations Statistics Division 2007). Additionally, financial resources can play a role.

Skills and education are conceivably related to cultural and other social issues, like age. For example, the younger, Western, generation is 'brought up' with computers, whereas older people have to learn how to use and access the Internet at a time when their learning aptitudes are diminishing. Income plays a role too. Wealthier people, whether from a country or global perspective, generally have better education opportunities, and can afford or have access to specialist schools and tools. Apart from a user's own ability to learn and comprehend, the opportunities to gain the necessary skills and obtain the education that will enhance accessibility thus appear outside the user's control. Instead they seem dominated by varying social, technical, geographical and cultural factors.

Economic factors

Tying in with the increased opportunities in education because of better financial resources is the fact that economic factors also affect the ability to buy better computers, equipment and connections, which influence accessibility. Another aspect put forward by Van Elzakker (2001) is the issue of cost in accessing information. Because the Internet and Web commenced as facilitators of sharing information, there was no initial commercial purpose (Peterson cited in Van Elzakker 2001). This meant that the original idea behind the Internet was to provide all information free of charge. However, with the growth of the Internet, commercialism has arrived and obtaining information sometimes has to be paid for. This can be to recover the cost of obtaining the data in the first place, or for copyright reasons, with organisations wishing to protect their information from misuse by others for example. With this emergence, extra care has to be taken that free information does not equate to lesser quality, with the best information also the most expensive, as this would diminish accessibility for economic reasons (Van Elzakker 2001).

There is the macro factor of the cost of infrastructure and communication networks. As stated by Yarborough (2001), few countries have been able to accomplish equal access within their own country, forget about on a global level. The issue of high cost infrastructures in developing countries can be overcome however, through private and foreign investments. This assists the governments of developing nations to expand their infrastructure and thus ultimately spreads accessibility.

Legal matters, ethics and censorship

The last factor classified as a social issue in relation to accessibility is the legal aspect. Although legal issues are also culturally linked (Arnold 1998), when considered together with ethics and censorship, they can thus seem to have social implications. With a worldwide audience accessing websites, the scope for legal limits to be crossed is highly probable. Governments have attempted to restrict access to information on the Internet such as through the Communications Decency Act in the United States that curbs the publishing of indecent and obscene materials (Centre for Democracy & Technology 2007). Although these restrictions are arguably for 'the right' reasons, that is, reasons that appear to benefit the greater good of the community, they often if not always clash with the civil rights and free speech from both the user and the publisher's perspective. This is where ethics and censorship enter the realm of legal issues.

The attempts by Governments or others in an authoritive role to dictate what information can or cannot be published, and thus what can be accessed, is regarded as the censorship of Internet access by some. As discussed by Yegyazarian (2006), this Internet censorship can have drastic implications for all involved, including users and Internet providers that merely supply the access opportunity, as recently witnessed in China involving the Internet provider Yahoo and the jailing of a Chinese Internet user. China is an example of a Government that controls the available information on Chinese websites as well as access to foreign sites. Internet providers can encounter legal and ethical dilemmas in that their obligation is to provide equal access to all its users, irrespective of their location (Lemon 2002). However, they are also bound by the laws of a country.

The legal issues of ethics and censorship relating to a worldwide audience are large and complex, and so far create accessibility restrictions to users for different reasons. Web designers would thus be wise to be aware of these legal issues in order to create sites that would be accessible to all potential users, without restrictions imposed upon it for legal matters or censorship.

TECHNOLOGICAL ISSUES

The technological factors can be viewed from both the micro and macro perspective. On a micro level, they are found close to the user and relate partly to some of the concerns previously outlined under social issues, such as the user's technological ability and skills. The macro aspect refers to differences that are broader, affecting multiple users, such as varying infrastructures in geographical locations, essential for establishing Internet access in the first place.

Computers and Internet connections

Perhaps the most common hindrance in achieving optimal accessibility from a micro perspective, apart from individual technical ability, concerns the user's computer and related factors. These include the screen and colour resolution (Van Elzakker 2001), computer capacities, programs and make, browser choice and Internet connections. For example, is the user trying to access information on a small-screened mobile device, a dated 640 x 480 resolution screen that only displays limited colours, or is it the latest, top of the range, large screen computer? These factors can alter firstly the ability to access all the information, and secondly, the manner in which the information is received. For example, limited colour resolution may change the colours to such an extent that the message contained within the information has diminished. This presents the problem that the designer is not always in control of what the final appearance of the product will be, even if for example maps are stored in platform-independent formats (Van Elzakker 2001). This is because of browser settings and individual computer configurations. Brophy and Craven (2007) state that accessibility means that different formats, programs, standards and the like should function across different platforms and operating systems, so that users can access information in their chosen way. This can be achieved through adding additional technology and provisions such as download options (Van Elzakker 2001). Despite these issues falling in the realm of the user, they are often controlled by other factors, such as skills or finances.

Another technological factor on a micro perspective is Internet connection: broadband or dial up, and the speed. Some users may deliberately choose one over the other, for example for financial reasons or lack of knowledge. No matter the grounds, it still impacts upon accessibility beyond their control. Moving closer to the macro level, the connections can also be controlled by geographical location. Rural parts, or areas and suburbs further away from major metropolitan centres may have lower levels of infrastructure, limiting the choice of Internet connections. From a full macro perspective, there are differences between countries, continents and hemispheres, with Internet connections now entering the category of global telecommunications systems and infrastructure.

Telecommunications network and infrastructure

Differences in telecommunications networks and infrastructure around the globe cause varying accessibility for users depending on their geographical location. Dyson (2004) testifies that restrictions to access for Australian Indigenous people is related to their isolation and the poorly developed infrastructure in these region, with Yarborough (2001) stating that it is quite normal for different access levels to exist within a country. Steps are being taken by international organisations with the assistance of Governments to reduce the gap in accessibility, also known as the Digital Divide. Despite this, there is still a disparity between developed and developing nations, as well as within societies (International Telecommunications Union/United Nations Conference on Trade and Development (ITU/UNCTAD) 2007). This is mainly due to the communications systems and infrastructures in place, and the cost of them. But as previously outlined by Yarborough (2001), these can be overcome. The ITU/UNCTAD (2007) agrees, and is attempting to close the gap between different parts of the world to ensure that the more marginalised countries do not fall further behind. It is acknowledged that reduced accessibility from a global perspective can affect the growth of a country's economy, as well as cause problems on a social and cultural front. Statistics show that the Internet use in the Developing World has grown (ITU/UNCTAD 2007). The issue of accessibility in relation to global networks and infrastructures may be difficult to solve, but solutions can attempt to limit the divide where possible, provided the cooperation of Governments and organisations is ascertained.

CONCLUSION

Accessibility, referring to equity of access to information on the Web and Internet, is an important issue. When designing for the Web, it is vital to consider accessibility for all users. A multitude of factors can be identified as impacting on accessibility, like cultural matters such as language, colour and symbology that have to be considered when designing for an international audience. Social issues are plentiful, with disability the initial barrier for accessibility identified by the W3C. However, age, gender, skills and education, and even legal matters have to be taken into consideration. These accessibility-affecting social concerns are often beyond the control of the user, and are frequently connected to cultural or technical aspects. Technological problems exist both on a micro and macro level, with some of the accessibility difficulties arguably the hardest to solve. This is due to for example cost or their sheer global scale, such as the disparity in telecommunications networks and infrastructure between developed and developing countries

Two elements of map design, the cartographic communication model and usability, have shown that good, user-centred design is vital to ensure that the message contained within the information is received accurately. Thus in order for web designers to make successful products that a large number of users can access easily and successfully, they will have to consider the cultural, social and technological issues outlined in this paper. Although it is conceivably impossible to ensure accessibility for all users, if web designers possess an understanding of the factors that impact on accessibility, they can consider these when designing their web products. This will assist in enhancing the opportunity to maximise accessibility for all users, regardless of their skills, location or circumstances.

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