Universal Accessibility and the Digital Divide

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Keywords: universal accessibility, digital divide, developing countries

Abstract: The Universal Accessibility concept is usually formulated in terms that ignore the socio-economic and socio-political context. For this reason it has impact only on a small fraction of the global population of people with disabilities. This presentation raises the need for a comprehensive approach that takes into account issues related to literacy, availability of technology, digital literacy, the use of minority languages, etc.

1. Introduction

Concepts such as "Universal Accessibility" or "Design for All" focus on overcoming barriers to accessibility for people with disabilities on the assumption that they have the training, equipment and infrastructure required. However this is only true for a small fraction of the world population. For most people with disabilities starting conditions are more restrictive, such as difficult access to computer equipment or obsolete equipment availability, illiteracy, use of a language other than the official one, etc. Accessibility guidelines usually ignore many of these restrictions, so they have little validity in these settings. In fact, the current approach to Universal Accessibility can only promote the integration of disabled people in affluent societies.

In this context the question that arises is how can we advance the integration of people with disabilities in societies that have restrictions on the formation and / or access to equipment?

¹ In Rethinking the Digital Divide in relation to Visual Disability in India and the United States: Towards a Paradigm of "Information Inequity" Chaudhry and Ship (2005) present an interesting comparison between the approaches to overcome the digital divide of people with visual disabilities in India and USA.
2. The digital divide

The digital divide affects mainly the developing countries, which lack the technical and financial means necessary to ensure access to Information and Communication Technologies (ICTs) to all citizens. But there are also islands of digital exclusion in developed countries, in poorer or less integrated communities. For instance, immigrants often have less access to ICTs than other citizens due to a range of language and cultural differences. People with disabilities belonging to these communities usually find economic and linguistic restrictions in addition to accessibility barriers. (See Dobransky and Hargittai, 2006).

3. Access to technology

In developed countries access to the technology needed to use the ICTs lies primarily with the user. Often there are also institutions such as libraries and cultural centres, which provide free access to ICTs, especially the Web. However, in many cases these access points do not guarantee accessibility for people with disabilities.

For people not having access to the needed technology, some emphasize initiatives that provide each user with their own equipment. Others believe that it is necessary to establish new patterns of sharing technology in order to overcome the digital divide. In the case of universal accessibility both approaches must also take into account the special needs of people with certain restrictions.

3.1 Assistive technology in the cloud

People with disabilities may require special equipment, frequently called Assistive Technology, to access commercial devices normally used by the rest of the population, for example buttons, special keyboards, joysticks, mouthsticks, screen readers, Braille displays, etc.

When Assistive Technology is based on software applications, such as text-to-speech converters to be used as screen readers, these can reside in repositories accessible through the internet. They can be downloaded or used online (if suitable network service is available). See for instance the proposal by Vanderheiden and Treviranus (2011).

On the other hand, when assistive technology is primarily based on hardware devices something like The cloud is not a feasible solution. In this case it is necessary to provide an efficient and cheap distribution and maintenance system.

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2 For instance, One Laptop per Child foundation states: “We aim to provide each child with a rugged, low-cost, low-power, connected laptop. To this end, we have designed hardware, content and software for collaborative, joyful, and self-empowered learning. With access to this type of tool, children are engaged in their own education, and learn, share, and create together. They become connected to each other, to the world and to a brighter future”. http://one.laptop.org/
3.2 Mobile telephony

In recent years mobile phones have proven to be a means of access to ICTs with great potential. Countries such as India stand out for their innovative and imaginative designs. For example, language teaching systems, machine translation, remote branch offices, etc., that are completely based on the mobile phone. However, this requires on the one hand the cheapening of intelligent mobile terminals (smartphones) and affordable rates for the use of the data network. (See Abascal and Civit, 2001).

4. Access to training

4.1 Basic training

The use of many of the services provided by ICT requires basic training, such as literacy, which should be extended to the entire population regardless of physical, sensory or cognitive restrictions. In return, ICTs can be successfully used to ensure access to basic education to marginalized sectors of the population.

4.2 Digital Training

At present, access to ICTs requires certain basic skills, such as using a browser to access the web, which can be more complex when you want to use more advanced applications. Full integration requires action programs to ensure this knowledge to all people, including those who have any kind of restriction.

5. Web Accessibility

Accessibility to the Web poses specific problems. On the one hand, the Web is an inexpensive option that many administrations adopted for the provision of local services. Services such as performing administration, information sharing, distance learning, etc., may be more efficient and cheaper when they are conveniently delivered over the Web. Furthermore, in some countries, access to civil rights, such as voting, are conducted through the Web. Therefore, to avoid any discrimination, the administration should ensure that these services are accessible to all users regardless of their physical, sensory or cognitive abilities, language used, the equipment to be used, etc.

On the other hand, the web provides access to content that is not controlled by the administration. This information can be very convenient for all people, including those who have a disability. There are important initiatives, such as WAI/W3C, to promote accessible Web content. However, the guarantee of accessibility is only mandatory in countries with inclusive legislation (and in many cases only for a limited set of public websites). In any case the current accessibility guidelines do not specifically include aspects of the problems mentioned above, as you can see in Abascal and Nicolle (2005).

Therefore, the Universal Accessibility to the Web still requires a coordinated international effort.
6. The social context

Obviously digital integration cannot be raised only for people with disabilities. It is necessary to face the inaccessibility of the social context where the disabled person lives. For many the right to access cannot be raised until the community reaches at least a minimum level of access to digital technology. However, delaying the assumption of universal accessibility often leads to dead ends. When conditions are well established for the general population, they often include serious accessibility problems that are virtually impossible to eradicate without a complete re-design of the system.

It is therefore necessary to address universal accessibility at the same time as addressing digital exclusion.

7. Conclusion

A comprehensive approach requires incorporating Universal Accessibility measures including:

- New approaches for shared access to ICTs
- Applications compatible with obsolete or underperforming technology (networks and processors).
- Less complex technology, which is cheap and easy to maintain.
- Facilities for the use of non-official languages.

Overcoming the exclusion of people with disabilities worldwide requires a joint approach, not separated from the struggle to eliminate the digital divide. Both problems cannot be separated or sequentially faced.

References


