

# Internet Accessibility for Visually Impaired

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## INTRODUCTION

Various countries around the world now consider Internet access a basic human right (Lucchi, 2011). Internet accessibility provides users with easier communication, knowledge building, as well as a means of entertainment. However, certain population groups cannot access Internet technology like everyone else. Among other disabilities, visual impairment, especially (legal) blindness is a major accessibility hindrance to various information resources, including paper-based documents, Internet, mobile telephony as well as traditional TV broadcasting. Such an impairment also leads to problems navigating or traversing an environment with ease – thus complicating otherwise mundane tasks of everyday life. Challenges faced by visually impaired are further encumbered with innovating technology, which sometimes enable, and sometimes prevents equal access.

This problem is generally termed as Digital Divide – a multidimensional and complex phenomenon which exists within and between countries (Bertot, 2003). Previous research on digital divide concentrated specifically on the technological dimensions (DiMaggio & Hargittai, 2006). In particular, studies have been conducted to track user access to Internet and computers; either in private homes or in community access points such as work places, schools and libraries (Kaye, 2000; Dobransky & Hargittai, 2006). Over time, the criticism toward technically biased research on digital divide has generated multiple streams of research in this field. These streams include studies on economic, information accessibility and information literacy dimensions of the digital divide (Bertot, 2003; Hawkins, 2005). In line with digital divide, the term digital disability divide clarifies that the gap studied in the context of information and communication technology for people with disability. Within national and international contexts, digital disability divide should be studied (Borget al., 2011). Digital disability divide can also be explained in the form of technology access, accessibility and use (Dobransky & Hargittai, 2006).

Due to this prevailing divide, various factors still keep visually impaired people from using information resources effectively. While technology for better accessibility is developed, it is still immature and often too expensive or otherwise difficult to acquire. The situation is further worsened due to higher learning threshold for new users in some cases. Social pressure might also keep visually impaired people away from different media. Behavior of peers and of family members gives also visually impaired people strong messages on what is acceptable or not in media usage.

Daily communication is an important part of anyone's life – and information resources – specifically Internet – serve an instrumental purpose to achieve this effectively. Social media, emails, instant chats and other means of fast and efficient communication have made world a smaller place, but for those that can't use them as effectively as others – these inaccessible innovations are as good as unavailable. Broken web-pages, non-compliance to web-standards, incompatible screen readers are just some of the challenges facing people with visual impairments.

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Studies have highlighted the importance of conventional technology to improve overall quality of life, also through the use of virtual (Anderson, Rothbaum, & Hodges, 2001) or mobile technology (Park & Jayaraman, 2003). This paper focuses primarily on Internet-based technologies, and their impact on accessibility for visually impaired people. Moreover, it identifies major helping technologies as well as inhibitors for their applications, whilst offering policy recommendations for different actors in the information delivery chain.

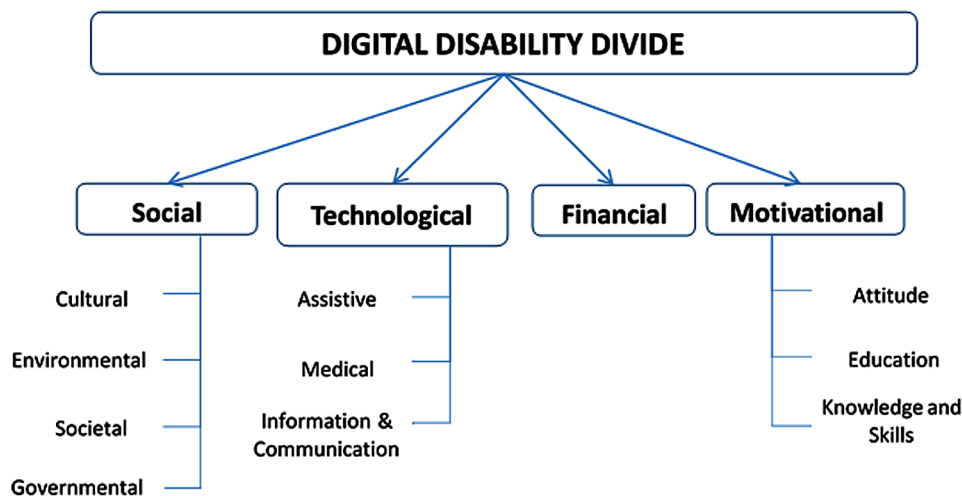
The rest of the paper proceeds as follows: Background section focuses on the earlier research within this area – and the factors affecting Internet accessibility for visually impaired. Technological advances highlights various assistive technologies that have been widely adopted to overcome these obstacles, and insights into general perception of their daily use. Solutions and recommendations focuses on policy recommendations that could further improve Internet accessibility. Future research offers insights into where this research is presently heading, and what further questions need answering to critically assess Internet accessibility issues. Finally conclusion summarizes this article, ensuring all factors affecting accessibility have been suitably addressed.

## BACKGROUND

Previous literature has highlighted various factors that can limit Internet accessibility for people with visual impairment. These include issues such as social norms and pressure (Dear et al., 1997; Whiteman & Lukoff, 1965), lack of knowledge (Scott, 1969; Wei & Hindman, 2011), missing financial resources (Scott, 1966), missing computer user skills and education (Colwell et al., 1998; Lengsfeld 2011) and immature technology (Kaye, 2000; Lazar et al., 2007).

These influencers – as they are broadly termed – are broken down into four main categories: Social, Technological, Financial, and Motivational. The framework for Digital Disability Divide (Sachdeva et al., 2013) breaks down these influencers into further sub-levels shown in Figure 1.

Figure 1. Framework for digital disability divide



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