

## Chapter 19

# Accessibility Compliance for E-Government Websites: Laws, Standards, and Evaluation Technology

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### ABSTRACT

*Barriers to web accessibility exist that deny the rights of people with disabilities to access content on public sector websites even though equal access is mandatory on e-government websites in most countries. In order to achieve web accessibility, specific standards and technology are essential for ensuring compliance with accessibility laws. In order to support the implementation of accessibility standards facilitating compliance with laws and methodological approaches exist which can play an important role in making e-government websites more accessible. The purpose of this article is to present the regulatory framework regarding accessibility, a survey of the technology and a proposal of good practices concerning technology which evaluates accessibility as a support resource. Recently, standards have been updated which make compliance with accessibility standards mandatory in the upcoming years. Faced with this situation, this work provides support resources to this new regulatory framework such as approaches to accessibility monitoring and evaluation technology.*

### INTRODUCTION

We continually use information and communications technology (ICT) for everyday tasks. Through the Internet, individuals can access an ever-increasing number of services. A digital society can only be complete when all citizens have access; this access must include persons with disabilities (PWDs).

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There is a wide range of PWDs, including blindness, low vision, deafness, hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities and combinations of these. Moreover, some people may have disabilities due to an illness or they may develop impairments with age. Given this situation, we must all face the fact that, at some point in our lives, we all may be forced to deal with either a temporary or permanent disability. One billion people, or, in other words, 15% of the world's population, experience some form of disability (WHO, 2011). Furthermore, the population in Europe is becoming increasingly older, and the proportion of senior citizens who need assistance in their daily life will continue to rise in the coming years. Between 2016 and 2080, the elderly will account for an increasing percentage of the total population. Those aged 65 years or older will account for 29.1% of the EU-28's population by 2080, compared with just 19.2% in 2016 (Eurostat, 2017).

PWDs configure standard software and hardware according to their needs, and use assistive technologies that help them perform tasks. Assistive technologies include screen readers that read webpages aloud for blind, screen magnifiers for people with certain types of low vision and selection switches for people who cannot use a keyboard or mouse. Using technology in a way that supports accessibility means that it works with assistive technologies. This condition is satisfied if accessibility standards are followed (W3C WAI, 2017). Therefore, in order to prevent the exclusion of PWDs, it is essential that public government websites be accessible. They must follow accessibility standards so that any citizen, with or without disabilities, can access a website. These standards are referenced in the laws and regulatory framework regarding accessibility in the different countries. In most cases, it is mandatory for all e-government websites. Despite numerous efforts made by various governments, the Internet is not completely accessible. Studies indicate that there are many websites which continue to present accessibility barriers (Olsen, 2010) (Moreno, 2018). Currently, there are still research challenges which must be overcome.

Several factors positively influence compliance with web accessibility. Some of these are the integration of accessibility requirements into website development processes and the definition of accessibility policies for the organizations (De Andres et al., 2010). During all stages of web development, accessibility must be taken into consideration. In addition, the accessibility integrated into the development processes must be sustainable throughout the life cycle of the application, something that is difficult to achieve. The research has identified occasions in which the incorporation of accessibility has been possible via its integration into User-Centered Design processes (Baguma et al., 2009; ISO, 2010; Rusu et al., 2015), web engineering approaches (Moreno et al., 2013), design tools (Xiong et al., 2007), authoring tools (Power et al., 2007), evaluation tools (Abascal et al., 2004) and monitoring tools (Mirri et al., 2011).

Assessment technology is fundamental for creating accessible products as it is essential for developers to evaluate their web prototypes as soon as possible in the development process. Due to the fact that problems with web accessibility may arise during any stage of development, continuous support for accessibility testing is needed (Trewin et al., 2010). Evaluation methodologies and automatic validators play a key role in ensuring the accessibility of e-government public administration websites. Public policies for web accessibility should take such tools into account, regulating and promoting their use (Paternò and Schiavone, 2015).

For this purpose, an exploratory study has been carried out to detect the existing weaknesses found in the implementation of accessibility in policies in both the organization and development processes. To this end, a study of the regulatory framework regarding accessibility has been carried out, indicating which standards must be met and if there are guides and support on how to apply these standards. Subsequently, a study is presented in which accessibility assessment technology is analyzed as this evaluation technology is an essential element affecting compliance with accessibility standards process.

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