Accessibility approaches for thematic web maps

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Abstract:

Web accessibility is a fundamental aspect of inclusivity and equity in the digital age, ensuring that all individuals, including those with certain limitations, can access and interact with online content. These limitations can be auditory, cognitive, neurological, physical, speech or visual disabilities that affect access to the web. Web accessibility is also important for people without disabilities such as people with situational limitations, using slow internet connection or have limited bandwidth, have temporary disabilities or device limitations (W3C, 2005). Web accessibility means designing and developing websites, tools and technologies so that they are usable by all people, regardless of their abilities or disabilities (W3C, 2005). In that regard, the World Wide Web Consortium (W3C) has developed the Web Content Accessibility Guidelines (WCAG) to provide a shared standard for web content accessibility that meets the needs of individuals, businesses, and society at large (W3C, 2008).

With the aim of bridging the digital divide to help people in disadvantaged social groups participate equally in the digital society, the European Commission in its first Digital Agenda for Europe (2010-2020) required all public sector websites to be accessible by 2015 (European Commission, 2010). In 2016, an EU-wide legislation, Web Accessibilty Directive (Directive (EU) 2016/2102), on the accessibility of public sector websites and mobile applications was adopted. The directive which came into full effect in June 2021, obliged public sector bodies to make their websites and mobile applications accessible (European Commission, n.d.).

While significant strides have been made in enhancing the accessibility of various web applications, web maps remain an under explored frontier in this regard. Web applications with accessibility requirements do not usually include interactive maps as guaranteeing accessibility in this context is challenging and hardly researched. Different accessibility approaches may be used for web maps that present thematic information and the ones for navigation purposes. This research will focus on the former. Thematic web maps present a unique challenge in achieving accessibility standards outlined by the WCAG considering the complex visual and interactive nature.

Accessible thematic web maps represent a critical intersection between the fields of web development, cartography, and inclusive design. As the digital landscape continues to evolve towards greater interactivity and data visualisation, addressing the accessibility challenges inherent in thematic mapping is paramount to fostering an inclusive online environment. For this reason, this research aims to investigate to what extent the WCAG are considered in the state-of-the-art scientific literature, the implementations of practical examples from the public sector, and to explore to what extent the existing general guidelines of the WCAG can be applied to the special case of thematic web maps.

References

European Commission, 2010. Communication from the commission to the european parliament, the council, the european economic and social committee and the committee of the regions a digital agenda for europe. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52010DC0245R(01). Accessed: 2024-04-02.

European Commission, n.d. Web accessibility directive — standards and harmonisation. https://digital-strategy.ec.europa.eu/en/policies/web-accessibility-directive-standards-and-harmonisation. Accessed: 2024-04-03.

W3C, 2005. Introduction to web accessibility. https://www.w3.org/WAI/fundamentals/accessibility-intro/. Accessed: 2024-04-02.

W3C, 2008. Web content accessibility guidelines (wcag) 2.0. https://www.w3.org/TR/WCAG20/. Accessed: 2024-04-02.