

Bachelor / Master Thesis Error Prevention in Web-GIS – Help Users Avoid the Back Button

Usability is an important aspect of modern software quality. In recent years, the users' expectations of user interfaces raised significantly. Within the last 2 decades, a large body of research thus focused on optimizing the usability of desktop and mobile applications, e.g., [1]. However, despite the general popularity of this topic, the usability of GIS software appears to have gained less interest—some examples are [2–7].

As con terra is a leading provider for integrated Geo IT solutions on an international level, it seeks to optimize the quality of its products and solutions with a high degree of usability. To achieve this goal, con terra has supervised several bachelor and master theses in this domain entitled Spatial UX. Two theses [8, 9] provided one finding independently of each other: Users of mobile GIS applications, which are based on mobile websites (Web-GIS), would often leave the application involuntarily by confusing the back button built-in the smartphone or browser with actual UI elements of the Web-GIS (see Figure 1). Hence, it appears vital to further deepen the understanding of this phenomenon, as it negatively impacts the usability (“Error Prevention” [1]) and thus the perceived user experience [8, 9].

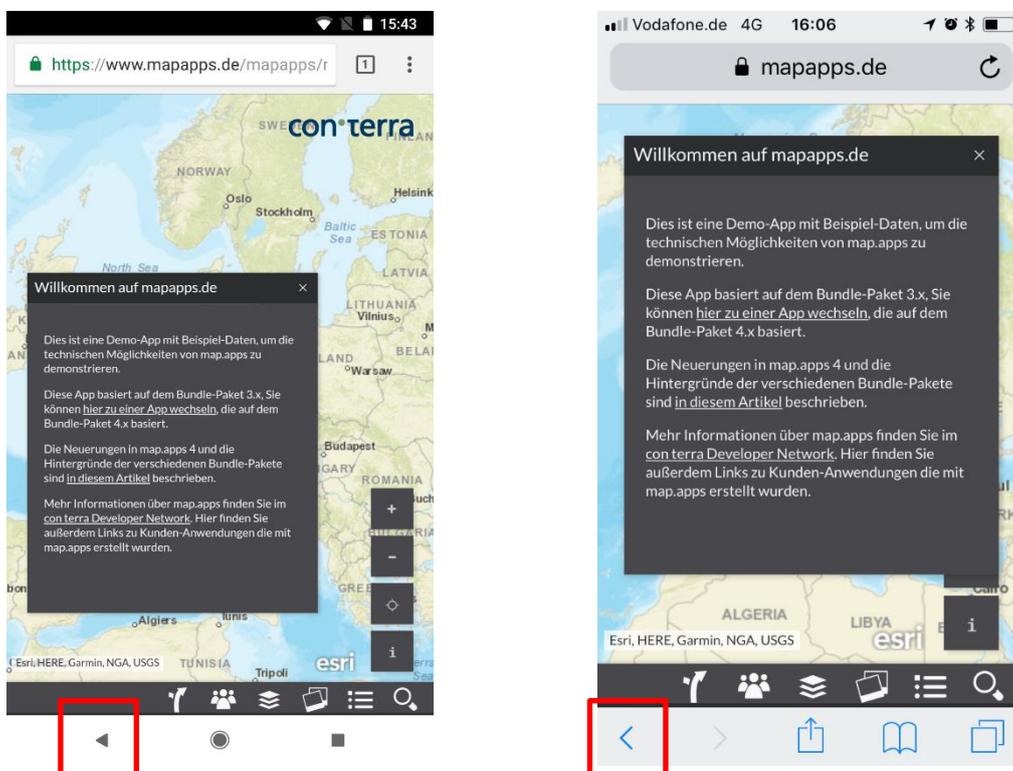


Figure 1: Two screenshots of a Web-GIS (www.mapapps.de) on Android (left) and iOS (right). The back buttons provided by the browsers are highlighted by two red frames.

The proposed thesis should thus further analyze the observed phenomenon based on related work in relevant domains, e.g., GIS, Web-GIS, or general HCI. Usability inspection methods, such as user studies [1], may provide additional insights about some factors affecting the users' behavior. Then, the thesis should derive and present an approach to address the observed usability issue. Ideally, the approach consists of design guidelines, that practitioners may apply to their Web-GIS in order to improve the user experience. Finally, the thesis should evaluate the proposed guidelines to assess their applicability and to indicate possible areas for future work. This evaluation should be carried out as a user study, that employs standard methods, e.g., SUS [10], UEQ [11], or NASA-TLX [12].

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