Government Information Quarterly 31 (2014) 584–595

Contents lists available at ScienceDirect

Government Information Quarterly

journal homepage: www.elsevier.com/locate/govinf

Usability and credibility of e-government websites

Zhao Huang [a,*], Morad Benyoucef [b]

[a] School of Computer Science, Shaanxi Normal University, Xi'an, China
[b] Telfer School of Management, University of Ottawa, 55 Laurier Avenue East, Ottawa, ON K1N 6N5, Canada

ARTICLE INFO

Available online 26 September 2014

Keywords:
Usability
Credibility
User performance
E-government

ABSTRACT

Albeit e-government has seen a steady growth, it can still benefit from a better user engagement, and usability and credibility are believed to be among the factors that influence such engagement. This paper presents an empirical study that evaluates the usability and credibility of current e-government websites and looks at user performance while using these websites. The study is based on a heuristic evaluation which aims to capture users' perception of usability and credibility. Our results show a close correlation between usability and credibility, as e-government websites with a high usability were perceived as having higher credibility, and vice versa. A number of usability and credibility weaknesses were identified on our sample of e-government websites.

© 2014 Elsevier Inc. All rights reserved.

1. Introduction

The power of the internet and web technologies has been clearly demonstrated in business, as exemplified by the enormous success of electronic commerce (e-commerce). Local, regional, and national governments around the globe have been tasked with leveraging such power to develop electronic government (e-government). E-government involves the use of information and communication technologies, particularly web-based applications to provide faster, easier and more efficient access to and delivery of information/services to the public (Lee, 2010). Most importantly, e-government is said to reform the back-office (The "back-office" comprises systems that run or support e-government processes, while the "front-office" comprises the various interfaces – e.g., websites or mobile applications – of e-government systems with the public.), making it work more efficiently in terms of information exchange and knowledge sharing between various units, departments and organizations (Homburg & Bekkers, 2002). Today, thousands of e-government systems are accessible via the internet offering a variety of online government information and services (Shareef, Kumar, Kumar, & Dwivedi, 2011). However, generating greater user engagement that translates into information access, service utilization, and participation in government decision making still remains a challenge. Usability and credibility are among the reasons for that challenge because they affect citizens' usage and acceptance of e-government, and influence their day-to-day interaction with e-government websites (Clemmensen & Katre, 2012). As indicated by Wathen and Burkell (2002), failure to develop usable and credible websites may change users' attitudes, reduce their satisfaction, and raise their concerns about the use of information and services offered on those websites.

Accordingly, usability is a critical element in the success of e-government (Youngblood & Mackiewicz, 2012). As suggested by Scott (2005), developers of e-government solutions must regularly monitor and enhance the usability of their websites to attract and satisfy users. As such, many studies have focused on defining e-government websites' usability constructs (e.g., Barnes & Vidgen, 2004; Gouscos et al., 2007). Some studies measured the multifaceted dimensions of e-government website usability (e.g., Garcia, Maciel, & Pinto, 2005), while others assessed its influence on users' attitude and behaviours (e.g., Teo, Srivastava, & Jiang, 2008). However, even with the insights gathered from those studies, current e-government websites are still plagued by a number of usability problems, including hard-to-understand content, inconsistent formats, poor navigation capabilities, disorientation, difficulty in using help functions, and lack of reliability. Not surprisingly, such usability problems may negatively affect e-government credibility. For instance, Huang, Brooks, and Chen (2009) found that usability issues such as broken links, overloaded information presentation, and inconsistent colours play an important role in the extent to which an e-government website is perceived as credible. In this sense, it is important to consider credibility issues when studying e-government usability in order to be able to design e-government systems that support the user in achieving the desired service outcome, and hence generate greater user participation.

This exploratory study aims to evaluate the usability and credibility of current e-government websites and assess the possible link between them. Our aim is that our findings can be leveraged by designers to improve the quality of e-government websites which will hopefully lead to a more usable and credible e-government. To conduct the study, we selected 3 London-area municipal websites, and recruited

* Corresponding author at: School of Computer Science, Shaanxi Normal University, 199 South Chang'an Road, Xi'an 710062, China.
E-mail addresses: zhaohuang@snnu.edu.cn (Z. Huang), benyoucef@telfer.uOttawa.ca (M. Benyoucef).

http://dx.doi.org/10.1016/j.giq.2014.07.002
0740-624X/© 2014 Elsevier Inc. All rights reserved.

36 people to participate in the evaluation of the 3 websites. Among the various evaluation methods available to us, we opted for a heuristic evaluation. We captured users' perception of e-government websites' usability and credibility, and measured the level of interaction of users with those websites. We then investigated the effect of users' perception of usability and credibility on their performance.

This paper is structured as follows. In Section 2 we provide some background on e-government in the UK, discuss the usability and credibility of e-government websites, and introduce and justify our evaluation method. In Section 3 we detail our empirical approach. Data analysis is discussed in Section 4. Finally, conclusions, limitations, and future work are covered in Section 5.

2. Background

2.1. E-government in the UK

E-government can be defined as the use of the internet, especially web technology as a tool to deliver government information and services to users (Muir & Oppenheim, 2002). In the UK, e-government is not only a matter of choice, but also a necessary strategy. Indeed, governments at all levels (central, regional and local) implement information and communication technologies to transform the structure, operation and culture of traditional government (Beynon-Davies & Williams, 2003). The central government employs a number of activities to promote e-government development. For example, the national strategic project "Modernising Government" was aimed at making 100% of government services available online by 2005 (Cabinet Office, 2010), and the "Implementing Electronic Government" program required e-government applications from the national to the local level (Beaumont, Longley, & Maguire, 2005). Local authorities were tasked with developing their own e-government systems. As indicated by Kuk (2003), local authorities are the key drivers for the development and implementation of electronic service delivery. There are nearly 500 local authorities in the UK, all of which were required to implement online systems by 2005 in response to the central government policy (Irani, Love, Elliman, Jones, & Themistocleous, 2005). Among them was the capital London, which is a major urban area consisting of 32 local authorities, 12 designated as inner London boroughs and 20 designated as outer London boroughs (Wikipedia, 2014). All have implemented their own e-government systems. Even though there is a rapid and noticeable growth of e-government in the UK, some studies point to a variety of issues. For example, Mosse and Whitley (2008) examined UK e-government websites and suggested that more attention should be paid to design elements like website consistency, simplicity, navigation and accessibility. Kuzma (2010) investigated accessibility design issues for UK e-government websites and found that the openness of websites to citizens is not widespread. Among the author's recommendations we cite: dividing large blocks of information into more manageable ones, clearly identifying the target of each link, and using the clearest and simplest language that is appropriate for a website's content. Issues were particularly raised for e-government at the local (i.e., municipal) level. Kuk (2003) found that the quality of local e-government websites in the UK was significantly poor in terms of information content, and relatively limited in terms of the range of online services. Furthermore, Irani et al., 2005 evaluated local e-government in the UK from an organizational perspective and pointed to big challenges in the areas of e-government infrastructures, web design and service management.

2.2. Usability of e-government websites

Usability is a well-known and well-defined concept in human–computer interaction (HCI) research, referring to the extent to which the user and the computer can "communicate" clearly through the interface (Chou & Hsiao, 2007). Fernandez, Insfran, and Abrahão (2011) defined usability as the capability of the software product to be understood, learned, operated, and attractive to the users. In addition to academic definitions, the International Organization for Standardization (ISO) interprets usability as effectiveness, efficiency and satisfaction with which the specified users achieve specific goals in the specified context of use (ISO, 1998). With regard to the World Wide Web (WWW), website usability refers to a qualitative appraisal of the relative user-friendliness of a website, as well as ease of use (Lee & Kozar, 2012). Nielsen (1994) used multiple metrics to explain usability and developed a set of standard usability guidelines to explain this concept (see Table 1 Usability guidelines 1–10). These guidelines have since been widely used for evaluating website usability (e.g., Garcia et al., 2005). Note that these guidelines were developed around 20 years ago and were used for general website usability evaluation purposes. In order to address the particular needs of today's e-government websites, it is important to further develop the existing usability guidelines.

Evidence from previous studies suggests that e-government websites can benefit from a high level of usability in at least two ways. First, an e-government website, serving as a window for users, provides a first impression of a government and its online services. So regardless of the type of government website, democratic values underlying governmental operations require that e-government should aim for user-friendliness (Baker, 2009). If websites fail to perform readily from a usability standpoint, and instead hinder users' access to websites and their use of online services, then the evolution of e-government will be stymied (Youngblood & Mackiewicz, 2012). Second, usability improves users' performance as well as their satisfaction with e-government. Verdegem and Verleye (2009) investigated users' utilization of e-government based on a large sample (5590 respondents) of participants. Their results show that users' adoption and use of e-government services

Table 1
Nielsen's (1994) and extend usability guidelines.

No.	Usability guidelines	Interpretation
U1	Visibility of system status	To keep users informed about their progress
U2	Match between system and the real world	To use the user' language, follow real-world conventions, make information appear in a natural and logical order
U3	User control and freedom	To make undo, redo functions available during interaction
U4	Consistency and standards	To keep the same design features and follow platform conventions through website
U5	Error prevention	To support users to overcome errors and prevent same problem occurrence
U6	Recognition rather than recall	To make information easily remembered
U7	Flexibility, efficiency of use	To consider usage for both novice and experienced users
U8	Aesthetic design	To make minimalist design
U9	Help user recover errors	To precisely indicate the problem and constructively suggest a solution
U10	Help and documentation	To provide help to support user's task completion
U11	Interoperability	To make all service parts, design elements, and website functions work as a whole to support user task completion
U12	Support users' skills	To support and develop users' current skills and knowledge
U13	Respectful interaction	To present a pleasant design and treat users with respect

Download English Version:

https://daneshyari.com/en/article/1024385

Download Persian Version:

https://daneshyari.com/article/1024385

Daneshyari.com