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Factors impacting website useability: An eye-tracking study of the Vancouver 2010 website

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Background

E-commerce has become a key element of most sport websites. However, sport websites are expected to do more than sell merchandise. They provide information, entertainment, and a sense of community with other fans (Mahan & McDonald, 2006). The multipurpose function of these websites can result in a cluttered environment that negatively affects the user experience. Perceived ease of use has been shown to be a critical element of technology acceptance (e.g., Sood, Ashish, & Tellis, 2005). Consequently, website useability, is expected to facilitate use of sport organizations' websites. This is particularly important for e-commerce aspects of websites (Huang & Christopher, 2003; Yuan-shu, Lim, & Tseng, 2004). Yet it is difficult for web users to articulate their experiences with e-commerce. Useability studies typically use interviews and/or click rates to evaluate site useability. Recently, eye-tracking has emerged as a key technology to determine website useability. Eye movements have been shown to more accurately reflect users' visual attention and cognitive thought processes. Eye-tracking makes it possible to measure spontaneous reactions and responses without the interference of filtering effects or the influence and interpretation of a test leader. Eye tracking therefore produces less ambiguous results and uncovers information often missed with other testing methods.

Objective

The purpose of this study was to use eye-tracking to determine factors that enhance or detract from web users' ability to navigate a sport website to make a purchase. Specifically, the study examined users' ability to navigate the Vancouver 2010 Olympic Games website to purchase a mascot-related gift.

Method

The study used a combination of survey, eye-tracking, and a short debriefing session to understand users' experiences of the Vancouver 2010 website. Participants (N=21) were asked to visit the Vancouver 2010 website to purchase a mascot-related gift for an 8 year old. Each was seated at a workstation with a Tobii T60 Eye-Tracker, keyboard, and mouse. The eye-tracking equipment is built into a 15 in. monitor, and does not interfere with normal computer use and requires minimal familiarization. Participants completed a short calibration before being provided the purchase scenario and access to the website.

All participants answered a 6-item survey upon completion. A Tobii T60 Eye-Tracker was used to monitor participants' use of the website. This study focused on participants' use of the homepage only. Standard eye-tracking measures were collected. These measures included: (1) total number of fixations, (2) time to first fixation on an area of interest, and (3) gaze duration on areas of interest. Fixations are defined as the coordinated positioning and focusing of the eyes on an object; these are indications of engagement with the object. Time to first fixation provides insight regarding which element attracts attention first and the time it takes to capture attention. Gaze duration reflects the importance of an element to the user; longer duration is indicative of more interest. Four areas of interest were specified: (1) the box at the top titled, "The Olympic Store," (2) the box titled, "More 2010 information," (3) mascot images, and (4) a large square near the bottom dedicated to the Olympic Store. Participants were asked their gender, whether or not they were a fan of the Winter Olympic Games, what year the next Winter Games would be held (i.e., a knowledge proxy), their familiarity with the Vancouver Games, whether they have purchased products online before, and how easy it was to navigate the website.

Results & Implications

Respondents reported frustration with the size and visibility of the tabs at the top of the page. They complained about the font size, in particular. Interestingly, none of the respondents saw the larger Olympic Store box nearer to the bottom of the page. Although it was larger, it required that participants scroll down the page to be visible. The other consistent frustration was the lack of a search box. This was particularly salient to participants that felt the site was moderately difficult to very difficult to navigate.

Heat maps showing the intensity of attention to areas of interest show differences by gender, ease of navigation, and experience with online purchasing. Females' attention is highly focused on the appropriate area of interest, while males tend to scan more areas. Ease of navigation is associated with fewer fixations and more focused attention to the Olympic Store tab at the top of the page. Experienced online shoppers also found the Olympic Store tab more quickly and were less distracted by other elements of the page than were inexperienced online shoppers. Implications for e-commerce sites within sport websites are discussed.