Usability Evaluation of Pakistani Security Agencies Websites

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ABSTRACT

In the post 9/11 world, homeland security has become a focal issue for every country and governments are constantly improving security mechanisms to protect their citizens. Pakistan being the front line state in the war against terror is one of the heavily affected countries by terrorism. Timely information dissemination to public by security agencies can help citizens to be prepared and carry out protective measures. Information technology artifacts and the internet can be very beneficial for information dissemination purpose. In this paper the author specifically looked at Pakistani security agency websites to evaluate usability aspects. Initially we conducted a usability testing in lab setting, where our questions were based on Jakob Nielson’s heuristics. In order to further validate our findings the authors prepared a questionnaire and got it filled out by end users. Survey results highlighted that these websites have several usability problems which need to be rectified before they could effectively be used. The findings of the study help e-government practitioners and policy makers to develop their websites according to user needs.

Keywords: Digital Divide, E-Government Adoption, Homeland Security, Technology Adoption, Usability

1. INTRODUCTION

Homeland security has become a prime issue for every country and as a result role of security agencies has become vital. In order to combat terrorism extensive organization and collaboration activities are required (cf. Wise, 2002; Waugh & Streib, 2006). One important aspect for homeland security is timely information dissemination among the citizens. This can help citizens to be better informed and prepare for security hazards. Information dissemination also helps citizens to take protective measures and respond in efficient manner in hazard situations. Information technology has benefitted different application areas by providing technology support systems (cf. Scherlis & Eisenberg, 2003; Li & Liu, 2008; Saeed et al., 2008; Saeed et al., 2009, Saeed & Rohde, 2010, Saeed et al., 2010, Saeed et al., 2011).

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Similarly, information technologies have huge potential for homeland security applications (cf. Reddick & Frank, 2006; Reddick, 2007; Reddick, 2008; Reddick, 2009). Information technology can help in many aspects such as information dissemination to the public, collaboration among security agencies, information tracking, and terrorist network analysis, etc. (cf. Popp & Yen, 2006; Herrmann, 2013). Keeping these advantages in mind, security forces and law enforcement agencies focused on support systems which can help them perform their professional duties optimally.

Pakistan being the front line allies of the US in war against terror is highly vulnerable to terrorism. Although Pakistan is ranked 127/181 at the digital opportunity index, but there are more than 18.5 million internet users (G3ICT, 2013). There has been an increase in internet usage by Pakistani users and organizations also prefer to establish their own website (cf. Saeed et al., 2008a; Saeed et al., 2010).

In this paper we only focus on information dissemination aspect of security agencies. World Wide Web is an important medium for effective information dissemination. Security agencies can use their websites for providing information to the public. However for the convenient use by citizens, websites need to be effectively designed keeping in mind its end users. We are particularly interested to find how security agencies use websites for communication with general public. We particularly wanted to find out the usability aspect of the Pakistani security agency websites. We want to evaluate the usability of these websites. The main contribution of the paper is usability analysis of security agencies websites. The findings from this study highlight current level of usability adoption in Pakistani security agencies websites.

Section 2 discusses related data of IT usage for homeland security and Section 3 discusses the methodology and results of empirical data and followed by conclusion in Section 4.

2. HOMELAND SECURITY AND INFORMATION TECHNOLOGY

Information technology usage by security agencies has increased in post 9/11 scenario (Roy, 2006). Yim & You (2011) have discussed how RFID Tracking, Sensor Network, Video Surveillance, and Image Screening, can help in improving homeland security. Withington et al. (2003) have described usage of short-term UWB radars for efficient security of strategic assets. Similar use of video surveillance cameras has also been extensively explored (cf. Ikebe et al., 2005 Lee et al., 2012). However, there has been opposition against such measures due to loss of privacy by citizens. Popp and Poinexter (2006) provided a vision to control terrorism by using information technologies. They highlighted that national security objectives and citizen’s privacy don’t conflict with each other. Instead privacy protected technologies can take care of privacy as well as help in counter terrorism. Jain and Mclean (2009) have chalked out best practices for the development of software applications for homeland security. They have taken into account issues like user friendliness, validation, performance and software reliability. Al-Raisi and Al-Khouri (2008) have shared their experiences of deploying IRIS recognition for border control systems in the UAE. They discuss the benefits and importance of such a system.

Information management is very vital for security agencies. Raghu et al., (2003) have pointed out the challenge of diversity and volume of information encountered by homeland security authorities. Kielman (2006) has highlighted the need for knowledge to prevent, predict, prepare and respond to terrorist attacks or natural disasters. In order to extract important information, different data mining techniques have been used in security systems (cf. Adam et al., 2004; Wu et al., 2009). Websites are an important medium for information exchange and there has been a lot of work done on web usability (Becker, 2004; Fang & Holsapple, 2007), but there is no empirical work highlighting usability aspects in security/law enforcement websites. The importance of security forces, and
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