

Usability problems and use errors appraisal in a public transport website

Saleh Moradi¹, Naseem Ahmad Pour²

¹Chalmers University of Technology, Gothenburg, Sweden

²École Polytechnique de Montréal, Montréal, Canada

Abstract

Usability and user error analyses are necessary steps in design of a user-machine interface. In this area Enhanced Cognitive Walkthrough (ECW), based on the Cognitive Walkthrough (CW) method, is designed as a proactive analytical method for analysis of potential usability problems mainly for medical instrument interfaces. Likewise, Predictive Use Error Analysis (PUEA) as a developed version of other error prediction methods is proposed to improve identifying and investigating potential errors of users in healthcare systems. In this study ECW and PUEA capabilities in facing human-computer interaction were evaluated by utilizing them for analyzing a public transport website interface. Hierarchical Task Analysis (HTA) was employed as the framework for analytical evaluation of different tasks in two common use case scenarios of the website. Application of evaluation methods in this study confirmed that limitations such as tediousness, complexity, being subjective and time-demanding still exist. Moreover, consequence severity grading for PUEA method must be attuned for better conformation with a human-computer interaction system. Despite these shortcomings, presentation of results, from ECW and PUEA, in matrices makes the errors and usability problems quite clear. The outcomes of matrices can form suggestions for website design improvements.

Introduction

Public transport systems are playing imperative roles in many municipalities nowadays, and utilizing IT solutions in providing users with travel plans, time tables, price lists and other useful information has become a necessity for public transportation companies. In fact, usability of public transport websites and accuracy of the data given by these facilities are directly contributing in website (and respectively the transport system) popularity among frequent users and tourists (Flavián, Guinalú, & Gurrea, 2006).

Dekker (2004) points out to the fact that humans are not reliable and not very much predictable components when they are interacting with systems and the assumption of engineers from the safe system is all before the humans begin to interact with them. More explicitly, Kohn, Corrigan, and Donaldson (2000) explain that errors are usually originated from multiple factors. In order to prevent the errors to take place by humans, a system approach is needed that aims for improving the conditions