Chapter XI

Proven Interaction Design Solutions for Accessing and Viewing Interactive TV Content Items

Tibor Kunert, Technical University of Ilmenau, Germany
Heidi Krömker, Technical University of Ilmenau, Germany

Abstract

This chapter describes interaction design solutions for interactive television (iTV) applications. A user task-based approach to interaction design guidance for iTV applications is suggested to easily integrate with a user-centred application development process. Based on the analysis of existing applications, several generic, iTV-specific user tasks are presented. For these user tasks, proven interaction design solutions were empirically identified by usability testing eight broadcasted applications. Specific design solutions to support the user tasks accessing content item and viewing content item are described. Usability test results and design guidance on the design of menus, video multi-screens, indexes, content presentation areas, paging, and scrolling are presented. Target audiences of this chapter are the iTV user interface designers and usability researchers.
Introduction

This chapter describes interaction design solutions for typical user tasks supported by iTV applications. To identify the design solutions, the following steps were conducted:

1. Identification of recurring and content-independent user tasks for iTV applications (generic user tasks, e.g., accessing content item and viewing content item).
2. Competitive usability testing of different interaction design solutions in eight broadcasted iTV applications.
3. Ranking of interaction design solutions that support specific user tasks based on the usability test results.
4. Description of the identified interaction design solutions on two levels:
   a. User interface (UI) elements, for example, menu or video multi-screen, which support specific user tasks.
   b. Design of UI elements, for example, arrow keys or number keys to select menu items.

Background

For iTV applications only very limited interaction design guidance is available. Published iTV-specific design guidance is limited in applicability by a wide range of designers because it is either middleware specific, for example, for the multimedia home platform (MHP) (Rinnetmäki, 2004) or broadcaster specific (British Broadcasting Corporation [BBC], 2006). For the available design guidance that is independent of middleware and broadcaster, unfortunately the method for its development has not been documented leaving it unclear if and how the guidance is based upon empirical evidence (Gawlinski, 2003; Lu, 2005). Only very little iTV-specific design guidance based on empirical evidence has been published (Kunert & Brecht, 2005). International standards on usability of interactive applications, for example, the standard 9241 of the International Organisation for Standardization (ISO) (ISO, 1996-1998) and ISO 14915 (ISO, 2002-2003) offer some guidance but lack the consideration of the iTV-specific context of use (Brecht & Kunert, 2004; Brecht, Kunert, & Krömker, 2005). General usability principles also offer some guidance but are too abstract to offer utile and practical support in the application
Conclusions: Where Next for Wearables?
www.igi-global.com/chapter/conclusions/202017?camid=4v1a