Mobility in a Personalized and Flexible Video Based Transmedia Environment

Abstract. This paper addresses the effective design of a Transmedia environment to generate personalized additional information around videos being watched in iTV, PC and mobile devices, for immediate or later access also from anywhere, with a special focus on mobile devices. It presents the opportunities and challenges of the inclusion of mobile devices on the environment, turning it into a true "ecosystem of devices" that contribute with their specific affordances to the different contexts of use. Based on the devices properties, and cognitive and affective aspects that influence user experience in this multiple media context, our transmedia system was re-designed to explore mobility and was subject to a preliminary user evaluation. The results are promising and encourage future developments in the current direction.

Keywords: HCI, Mobility, Video, iTV, PC, Transmedia, Crossmedia.

1 Introduction

The proliferation of new devices able to support human activities across a range of contextual settings [1] is one of the main motivations for media integration in what is designated as Crossmedia or Transmedia environments. These environments, based in the integration and co-existence of various media technologies with an integrated and specific purpose are becoming increasingly popular due to their flexibility and mobility. They create new opportunities for the generalization of communicational practices, as those associated with formal and informal learning and information access, which are becoming more relevant considering the importance of lifelong learning [2] and the pervasive nature of media technologies and devices.

Video is a very rich medium to support learning, and TV, PC and, more recently, mobile devices are privileged ways to access it. Through structure and interaction, these devices can open the door to flexible environments that can access video and integrate it with different media, accessible from different devices, adequate to support different cognitive modes and learning processes in several contexts. In spite of their valuable potential to create rich and flexible environments, the design of these transmedia systems faces some challenges that may affect their effective use. Some of the proposed systems failed because too much effort was put into technical details, leaving behind transmedia conceptual aspects such as interaction and service design based on: cognitive processes, usability, affect, user experience, contextualization, continuity, media affordances, and device characteristics.

Our main concern is to focus also and mainly on these aspects, while studying and understanding this emerging paradigm, where research has not been complete [1], [3]. Our XXX application has been designed and developed to illustrate our research. It was recently redesigned to support the use of videos other than TV shows on iTV, and

the functionalities increased to match this more flexible perspective. Now we are redesigning it to fully support mobile devices and contexts of use. Running from iTV, PC and mobile devices, it provides users with the possibility to choose, from a video, usually watched in a more experiential cognitive mode, which topics they would want to know more about, with which level of detail, and later decide when and where they would want to access those extra related contents, in a more reflective mode, and with whom they would want to share them with, having the adequate support from the application in the different access contexts. The architecture and the main features available in iTV and PC contexts were already explored and described in previous publications [4-8], this paper will focus on the introduction of mobile devices and their specific functionalities and design in this transmedia video based context.

After this introduction, section 2 includes a review of related work and concepts, section 3 describes the design challenges of transmedia applications and mobile devices in that context, section 4 presents the design decisions on the transmedia XXXX mobile device module, evaluated in section 5. Finally, section 6 presents the conclusions and perspectives for future research and developments.

2 Related Work

This section addresses some of the more relevant related research studies in Transmedia environments that include mobile devices.

The TAMALLE project [9] developed a 'dual device system' for informal English language learning, based on watching iTV and selecting what to access later on mobile phones. This was an interesting system capable to accommodate different cognitive modes and different contexts of use, especially, if considering the mobile phone possibilities. Obrist et al. [10] developed a "6 key navigation model" and its interface for an electronic program guide running on the TV, PC and mobile phone. The different devices were not used in a complementary way since the intention was to test a similar interface, on three different devices. They have perceived that viewers prefer a reduced number of navigation keys and a unified UI with the same functionalities across devices. This confirmed our prototypes UI design last decisions. Newstream [11] provides extra information about what is being watched and related websites, using TV, PC and mobiles. Depending on the viewers needs, that extra information may be viewed immediately, stored for later view or pushed to other device. All devices maintain awareness of each other and are able to: move interaction to the device that makes the most sense in a specific context, use several devices simultaneously and, use the mobile device as a remote to the TV and PC. Limitations include: the system relies almost exclusively on social networks to receive and share content, for interaction and dialogues; and the limited viewer direct influence on the new contents presented as extra information. Our work is more flexible in these concerns. 2BEON [12] is an iTV application which supports the communication between viewers, textually and in real time, while watching a specific program. It also allows viewers to see which of their contacts are online, which programs they are watching, and instant messaging on the iTV, demonstrated to be important to give viewers a sense of presence. Currently called WeOnTV, it is being implemented with smartphones as "secondary input devices", soon to be distributed by one of the most