

# Chapter 11

## Interactive TV as Part of Crossmedia Systems in Order to Enhance Informal Learning: The eiTV Case Study

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### ABSTRACT

*Crossmedia systems are becoming the trend due to technological advances, better interfaces design, and changes in user habits. Due to the use of different devices as part of the same crossmedia system, which allow supporting a multiplicity of contexts of use, useful when considering learning scenarios, new research opportunities and challenges have arisen in the design of these systems. This chapter addresses the effective design of crossmedia systems and interfaces with a particular emphasis on iTV, PC, and mobile devices, through the eiTV application, designed and developed to illustrate and explore this paradigm, based on cognitive and affective aspects that influence user experience. The eiTV application is capable to create, access, and share personalized informal learning environments (created as additional information to the video being watched), via iTV, PC, and mobile devices (the preferred or most adequate device in each context of use).*

### INTRODUCTION

Video is a very rich medium, in cognitive and affective terms, to convey information and support learning and entertainment and TV is a privileged way to watch it. In spite of being traditionally watched in a more experiential and passive cognitive mode, video may induce viewers to engage in more reflective modes, although not usually providing an adequate support for this mode (Prata & Chambel, 2011;

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Brame, 2015). When watching a TV program, at some point in time, the viewers may feel the need or will to know more about a specific issue that caught their attention. Traditional TV is not able to support this type of functionality, but iTV, by its nature, may allow the possibility to access and interact with information about the program and related issues, that may be available as indexed TV content and references to follow and search. In fact, the role that TV has been playing so far is changing. We are definitely in a moment of transition, a moment where “old media systems are dying, and new media systems are being born. The traditional ‘spectatorial’ culture is giving way to a participatory culture” (Jenkins, 2010; Kulowiec, 2018). The proliferation of new devices able to support human activities across a range of contextual settings (Segerståhl, 2008), just like it happens in ‘real life’, is one of the main motivations for media integration in what is designated as crossmedia. Simultaneously, global access to information and technology is changing the relationship between people and knowledge, and the trends in convergence, integration and co-existence of various media technologies is creating new opportunities for the globalization of learning and communicational practices. Crossmedia systems are particularly interesting in what concerns the opportunities they create in terms of communication, entertainment, learning, and other activities (Bates, 2003). In terms of learning support, these systems are particularly promising due to the emerging era of lifelong learning, as learning will take place in a wide variety of contexts and locations and informal learning will tend to become as important as formal learning (Bates, 2003), calling for flexible environments. However, there are aspects that affect the efficient use of crossmedia systems. Some of the proposed systems failed because too much effort was put into technical details, leaving behind crossmedia conceptual aspects such as interaction and service design based on: cognitive processes, usability, affectivity, user experience, contextualization, continuity, media affordances, or device characteristics (Prata & Chambel, 2011; Prata & Chambel, 2019). The handling of these dimensions is our main motivation. Our main concern is to focus on these conceptual aspects, to study and understand this emerging paradigm which success requires, not only technological solutions, but sustainable models and pedagogical solutions, where research has not been complete (Prata & Chambel, 2010; Segerståhl, 2008). So, it was expected that the eiTV application would be designed to illustrate our research, and also to allow us to propose a new and personalized technical solution for a new type of service. The name eiTV was chosen because it was considered that the ‘e’ brings a broader ‘web perspective’ to the interactive television (iTV) as it happens in our work. The eiTV crossmedia application, which comprises three devices (iTV, PC and mobile devices, namely, smartphone), provides users with the possibility to choose which topics, from a video being watched, they would want to know more about, with which level of detail, and later decide when and where to access those extra related web contents (also referred as informal learning environment, informal learning content or, in short, simply as web content) in a more reflective mode, and whom they would want to share them with (e.g. facebook contacts), having the adequate support from the application in the different access contexts. This is a personalized experience since the contents will be prepared based on the users immediate interests and their preferences expressed in their profiles, and may be accessed and edited through iTV, PC and mobile devices (smartphones). Important to refer that the web content is generated by the user, from scratch, and solely based on their choices. After being automatically generated by the user from any of the mentioned devices, the web content may be viewed and edited, also from any of the devices, and additional videos, pictures, sounds, GPS coordinates, etc, may be easily added to the web content. Nothing in the web content is suggested by default by the system. iTV was included in our system due to its potential as a privileged tool to watch video. PC was included due to the fact that many viewers started using it as a complement of the TV viewing and mobile devices were included due to three main

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