

# Generation of Crossmedia Dynamic Learning Contexts from iTV

Alcina Prata  
Superior School of Business  
Management (ESCE)  
Instituto Politécnico de Setúbal  
2914-503 Setúbal, Portugal  
+351265709429  
aprata@esce.ips.pt

Teresa Chambel  
LaSIGE, Faculty of Sciences,  
University of Lisbon  
1749-016 Lisbon, Portugal  
+351 217500087  
tc@di.fc.ul.pt

Nuno Guimarães  
LaSIGE, Faculty of Sciences,  
University of Lisbon  
1749-016 Lisbon, Portugal  
+351217500087  
nmg@di.fc.ul.pt

## ABSTRACT

Tendencies in convergence, integration and co-existence of several media technologies are creating new opportunities for the globalization of learning practices. Simultaneously, the lifelong learning phenomena, which will take place in a wide variety of contexts and locations, call for flexible environments. iTV holds a great potential in this scenario, but there is still limited research in terms of cognitive and interaction aspects. This paper presents a new paradigm to generate crossmedia dynamic learning contexts from iTV with the aim to link the mentioned opportunities in flexible, adequate and effective learning contexts. In order to better illustrate this paradigm an iTV system, (e-iTV), was designed. The system generates, via iTV, Crossmedia Online Personalized Learning Environments, also designated as COPLE or web lessons, accessible from several types of devices. The system is prepared to respond to communication needs of the viewers since and allows them to share their web lesson. In practical terms, the e-iTV system uses the TV set, not as the final medium, but as a starting point to new crossmedia dynamic learning and communications contexts. The motivations and goals of this work are presented, followed by a review of related work and concepts and the presentation of the conceptual framework. A description of the analysis, planning, development and evaluation of the e-iTV system is presented based on a specific HCI based model. The paper concludes by opening perspectives for future research and developments.

## Categories and Subject Descriptors

H.5.2 [Information Interfaces and Presentation]: User Interfaces - *Evaluation/methodology, Graphical User Interfaces (GUI), Interaction Styles, Prototyping, User-Centered Design.*

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## General Terms

Design, Experimentation, Human Factors.

## Keywords

iTV, iTV learning, iTV interaction, iTV service, HCI, crossmedia, crossmedia learning environments, personalized web lessons.

## 1. INTRODUCTION

The history of iTV, is full of pitfalls which have dictated a journey of advancements and recoils [2]. Nevertheless, iTV technology combines the appeal and mass audience of full motion TV with the interactivity of the web and the internet, providing new services, giving viewers more control over what they see and creating a new and very rich environment. It is, in the opinion of many researchers and producers, a technology that is increasingly being used and will conquer its market space [2; 32]. This conviction is clearly supported by the number of research studies that were conducted on these last few years. Some studies have identified a potential for the use of iTV for increasing learning opportunities in the home, in particular through personalized options [5] and the need to find ways of utilizing the powerful combination of broadcast TV and interactive services to provide hooks to draw viewers into active learning environments [5].

The success of iTV requires technological solutions, sustainable models and pedagogical solutions issues, and there is still limited research in this particular area, especially on cognitive and interaction aspects [5; 21]. This is an important field in the emerging era of lifelong learning, as learning will take place in a wide variety of contexts and locations and informal and non-formal learning will become as important as formal learning [5], calling for flexible environments. 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.

In spite being a traditionally passive device, the TV set may conduct viewers into different cognitive states (more or less reflective) in seconds. These cognition states may appear inside or outside typical learning environments: daily activities, like watching a TV program may, at some point in time, create the