

DynamicTV: a new *Inter-tainment* paradigm for television

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ABSTRACT

In this demo we propose some of the results of a 3-year project run in the research labs of Telecom Italia, called “DynamicTV”.

It is a new paradigm for iTV, whose drivers, user experience and user interface design are described in [1],[2].

We demonstrate the user experience by a hi-fidelity prototype of the interface, while the system’s end-to-end architecture will be simulated locally. DynamicTV Immersive User Interface allows the user to navigate among media contents simply by using a remote control as it happens in a normal interaction with TV device, albeit a huge number of contents are available, both “on demand” and live on television channels.

Categories and Subject Descriptors

H.5.2 [Information Interfaces and Presentation]: User Interfaces (D.2.2, H.1.2, I.3.6) – *Interaction styles, Graphical user interfaces (GUI), Prototyping, User-centered design.*

General Terms

Design, Experimentation, Human Factors, Verification.

Keywords

Inter-tainment, Interaction Design, Social TV, Long Tail Theory, User Experience, Usability.

1. INTRODUCTION

The DynamicTV project [1][2][3] carried on at Telecom Italia Lab implements a new paradigm for interactive television with the goal of enhancing the user experience, especially in a context where hundreds of thousands of contents are available and the usual zapping or EPG based techniques might not be adequate.

The Inter-tainment paradigm shown in the demo, introduced by the same research group, encompasses and merges different concepts: technologies from enhanced TV, recommendation technologies for supporting the user in the navigation and serendipity. Information visualization techniques have also been

used in order to cope with a huge amount of content to be presented to a user who is usually distant from the screen, therefore not at ease with a lot of textual information, but rather with a visual approach.

2. GOAL

Dynamic TV, is a concrete attempt of implementing the Inter-tainment paradigm approach. This interaction model has to be appealing to both traditional and active users and be shaped in an intuitive navigation metaphor, tailored around users’ fruition habits and familiar interaction patterns. A state of the art analysis of eTV and p2p software applications was led, defining a set of interface design drivers. The aim was to merge the interaction modalities of traditional and widespread entertainment systems with the new approach to content access adopted in new media. As a whole, a new navigation metaphor needed to be defined, to allow different navigation strategies. Possible approaches range between two extremes: on the one hand, the traditional categorical approach recalls the structure of contents arranged in thematic channels; on the other hand, a new serendipitous approach requires contents to reconfigure dynamically whenever the user asks to be advised according to his/her taste, or wants to discover new contents. Dynamic TV’s navigation metaphor is designed to provide users with ways of satisfying the needs that lie behind the two approaches.

3. METHOD

Here are the guidelines we have followed for developing such flexible navigation metaphor:

- The interface design should encourage the “serendipity”[1], i.e. users should be provided with ways to find unpredicted, yet interesting available contents starting from previous search results;
- Users should be provided with suggestions about the available contents, according to a user-targeted recommendation engine;

As counterbalance to the previous guideline, the system should be perceived as non-intrusive, especially as to the provision of recommendations and suggestions.

3.1 User tests

In order to evaluate the appeal and the appropriateness of the user experience with the new TV paradigm, usability and acceptability tests were conducted all along the design process, as part of the design itself.

The initial test were carried on using storyboards, then on low fidelity demonstrators and finally on the prototype shown. The main results are encouraging:

- the prototype was easy to use for every target of users (mean = 3,88 out of 5)
- the appeal of the system was good (mean = 3,86 out of 5)
- users proved to be able to navigate with the usual control device in a simple way (mean usability = 3,86 out of 5) even if not always efficiently

3.2 Demonstrating the paradigm

The demonstration will show side by side two versions of Dynamic TV: this is important in order to show that we are not demonstrating only a User Interface, but a whole “paradigm”.

The principle of the paradigm are very well represented by a basic (called “Zen”) version, represented in Figure 1, and are even more apparent when comparing it with a graphically skinned version, where the graphics are very different, but the User Experience and Interaction Rules are exactly the same.

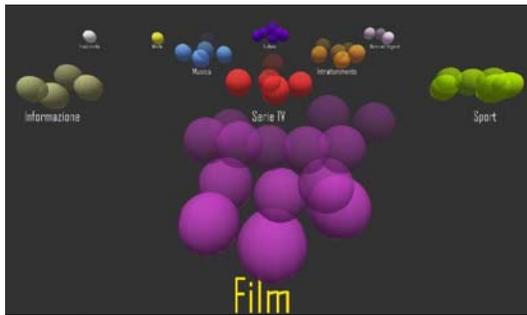


Figure 1 – Dynamic TV “Zen” appearance

The latter version, called “Space” and shown in Figure 2, is demonstrated together with the “Zen”, both to underline the characteristic features of the paradigm across different graphical layouts, and to show how the software architecture allows to perfectly decouple User Interaction from Graphical aspects.



Figure 2 – Dynamic TV “Space” appearance

3.3 What’s next?

The project is currently focused on including in the prototype some cross-media features described in [4]. The idea is to leverage on the actions that a user from his PC does on the iDynamic TV website, such as voting, tagging, using social networks to share comments, etc, in order to enrich the user experience in the fruition of television contents, adding a participation and sociality dimension.

4. TECHNICAL DESCRIPTION

The client shown runs on a normal PC with media centre features. It is a web based application composed by two layers:

- a presentation layer, which provides the User Interface both immersive 3D navigation and multimedia fruition, the latter through a pluggable media player
- an application layer, where all client-side business logics take place

plus a “skin” storage, which allows the graphics and scene structure to be changed without modifying the paradigm at all.

The client is part of an end-to-end architecture, including an application server, providing information to build the 3D scene, a metadata DB, a content delivery network, which supplies VoD and live TV to the customer, and a recommendation engine.

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