Next-Generation Social TV Content Discovery

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Abstract. The recent advent of broadband Internet has led to a convergence of the Web, multimedia, and social media technologies, and revolutionized the TV content consumption. It facilitates users not only watching the TV content, but also accessing personalised information, generating new content, socialising with others, and expressing their emotions. This demonstration showcases the research prototype developed by the Social TV project, elaborates on the aspects pertaining to user modelling, personalisation, and social media, and discusses future large-scale evaluation with real users.

1 Introduction

The advent of wired and wireless broadband infrastructures allows ubiquitous and seamless user access to interactive TV content. This convergence of the TV, Web and mobile technologies, and the social media has revolutionized the established video content consumption practices. In addition to pure watching, it allows users to access additional information about the watched TV content, socialize with other users while watching, select content and determine its delivery mode, express their feeling and thoughts, and influence others. This raises numerous challenges related to user modeling and personalization, user interaction, and TV video content discovery.

In this demonstration we showcase the current research prototype developed by the Social TV project. The prototype leverages the observed user interactions with the systems and the watched TV content in order to model user preferences towards TV content and facilitate content discovery through personalised recommendations for yet unwatched programs. Inherent linkage with other sources of information and widespread social media platforms allow users to access more information about the recommended programs, discover related TV programs, and monitor the popularity of the programs across their online friends. Social interaction is embedded in the video player deployed by the prototype system, such that the users can express themselves as well as socialise and influence other users while watching the programs.

We will evaluate the developed prototype and the provided services in a long-term and large-scale user trial, which is planned to start shortly. The study will not only allow us to experimentally validate the usability of the prototype and the accuracy of recommendations, but will also facilitate the collection of a rich dataset that will be used for future studies of personalised user interactions with the TV content.

2   Social TV Content Discovery Prototype

Figure 1 illustrates the main interface of the developed prototype desktop application. It allows users to access TV content of two types: on-demand programs and free-to-air channels provided by a leading Australian TV network participating in the project. A hybrid recommendation algorithm that incorporates a suite of collaborative, content-based, and stereotypical methods was deployed to select the programs shown by the interface. The predicted score of the recommendations is communicated through the size of the program icon[1]. User can click on the icons to access detailed program information, discover related programs, monitor the popularity of the program across social media friends, and read latest Tweets related to the program (see Figure 2).
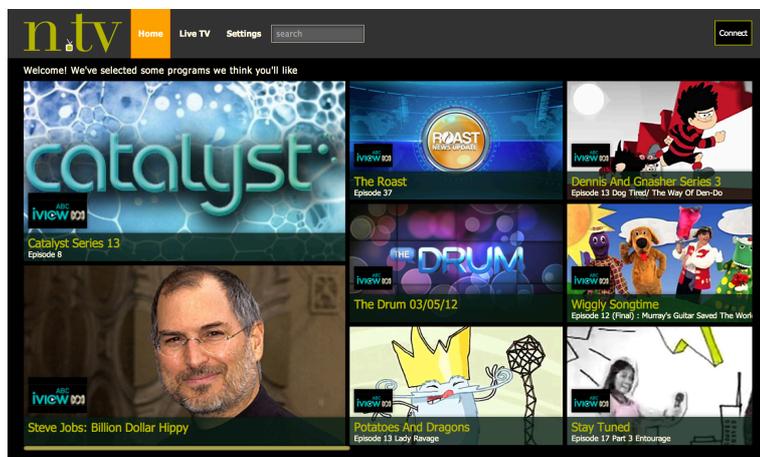
Figure 1: Main user interface of the Social TV prototype.
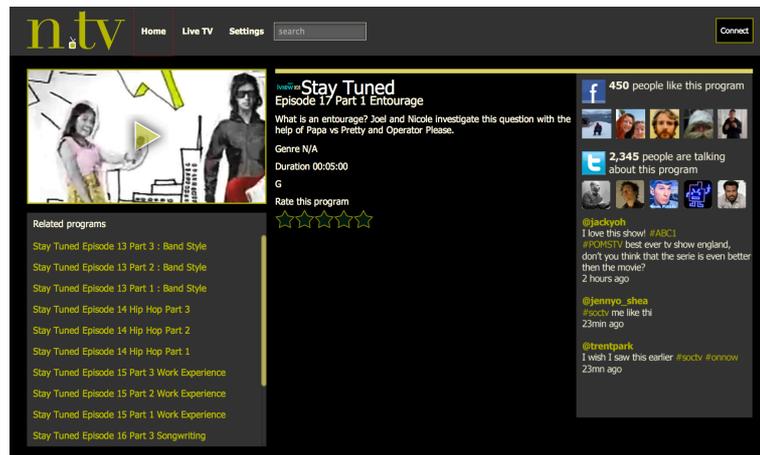
Figure 2: Detailed program interface.

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[1]   Although this interface screenshot includes two high-priority and six medium-priority recommendations only, the grid can be expanded to include more recommended programs.

Clicking on the icon launches the video player with standard control buttons and time indicators (see Figure 3). Users may participate in a live chat that is visualised in a semi-transparent manner and overlaid on top of the video content of the program. Although the chat is limited to users watching the program with the Social TV prototype, users can also choose to publicly post their comments to widespread social media platforms by ticking the respective checkboxes.

Figure 3: Program player and chat functionality.

Note that the chat facilitates the gathering of precious user modelling data. In addition to the textual comments field, the chat interface includes six pre-selected emotional expressions: anger, disgust, fear, joy, sadness, and surprise. These are the most popular feelings elicited by TV and video content and, if used, reflect the user's response to the watched content. Through these emoticons, users can explicitly annotate their emotional state over the course of the program, which is superior to the one-off consumption feedback gathered by traditional user modelling methods.

3   User Trial

We will evaluate the prototype system in a 12-months trial, which will start in June of 2012. The trial will be conducted in university dormitories and involve around 2000 students, who will be offered free access to live and on-demand services offered by the TV network participating in the project. Observable information regarding student interactions with the system, i.e., the watched programs, accompanying meta-data (title, description, genre), direct interactions (play, stop, pause), and related social media interactions (chat, like, Tweets), will be gathered. Firstly, this information will allow us to evaluate the usability of the system, the accuracy of the user models, and the uptake of TV program recommendations. These insights will inform the design of future versions of the system. Secondly, it will allow us to gather a rich and valuable dataset that will be subsequently used for future studies into personalised video content delivery, which will be conducted within and beyond the scope of the project.