

# Antiques Interactive

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## ABSTRACT

We demonstrate the potential of automatically linking content from television broadcasts in the context of enriching the experience of users watching the broadcast. The demo focusses on (1) providing smooth user interface that allows users to look up web content and other audiovisual material that is directly related to the television content and (2) providing means for social interaction.

## Categories and Subject Descriptors

H.5.2 [Information Interfaces And Presentation]: User Interfaces---*Interaction styles, Graphical user interfaces*; H.1.2 [Information Systems]: User/Machine Systems---*Human factors*; H.5.1 [Information Interfaces And Presentation]: Multimedia Information Systems---*Video*

## General Terms

Design, Human Factors, Standardization.

## Keywords

Connected TV, semantic multimedia, media annotation, interactive television, user interfaces, content analysis.

## 1. INTRODUCTION

The vision of the European project Television Linked To The Web (LinkedTV<sup>1</sup>) is to automatically enrich content to provide

users with a richer interactive experience while watching television. The goal of this application is to demonstrate how television interfaces might look like in the future. We focus on the key user interface challenges that result from rich hyperlinked content: the need to unobtrusively present the interactive elements and to combine navigation with the play out of the main audiovisual stream. We will sketch the functionality of the application using a scenario based on a recent episode of the Dutch version of the well-known BBC programme Antiques Roadshow. The original episode is available online.<sup>2</sup>

## 2. DEMO SCENARIO

In this section, we describe the scenario on which the demo is based.

### 2.1 Introducing Rita – the persona

Rita is an administrative assistant at the Art History department of the University of Amsterdam. She didn't study art herself, but spends a lot of her free time on museum visits, creative courses and reading about art. One of her favourite programmes is the Antiques Roadshow (Dutch title: Tussen Kunst & Kitsch) from the Dutch public broadcaster AVRO<sup>3</sup>. Rita likes to watch the Antiques Roadshow because, on the one hand, she learns more about art history, and, on the other hand, because she thinks it's fun to guess how much the objects people bring in are worth. She's also interested in the locations where the programme is recorded, as this usually takes place in a historically interesting location, such as a museum or a cultural institute.

### 2.2 Rita watches the Antiques Roadshow

Rita is watching the latest episode of the Roadshow. The show's host, Nelleke van der Krogt, gives an introduction to the programme. Rita sees the show has been recorded in the Hermitage Museum in Amsterdam. She always wanted to visit the museum as well as finding out what the link is between the Amsterdam Hermitage and the Hermitage in St. Petersburg. She

<sup>1</sup> [www.linkedtv.eu](http://www.linkedtv.eu)

<sup>2</sup> <http://cultuurgids.avro.nl/front/detailtkk.html?item=8237850>

<sup>3</sup> <http://avro.nl/>

sees a shot of the outside of the museum and notices that it was originally a home for old women from the 17th century. Intriguing! Rita wants to know more about the Hermitage location's history and see images of how the building used to look. After expressing her need for more information, a bar appears on her screen with additional background material about the museum and the building in which it is located. While Rita is browsing, the programme continues in a smaller part of her screen.

After the show introduced the Hermitage, a bit of its history and current and future exhibitions, the objects brought in by the participants are evaluated by the experts. One person has brought in a golden, filigree box from France in which people stored a sponge with vinegar they could sniff to stay awake during long church sermons. Inside the box, the Chi Ro symbol has been incorporated. Rita has heard of it, but doesn't really know much about its provenance and history. Again, Rita uses the remote to access information about the Chi Ro symbol on Wikipedia and to explore a similar object, a golden box with the same symbol, found on the Europeana portal. Since she doesn't want to miss the expert's opinion, Rita pauses the programme only to resume it after exploring the Europeana content.

The final person on the show (a woman in her 70s) has brought in a painting that has the signature 'Jan Sluijters'. This is in fact a famous Dutch painter, so she wants to make sure that it is indeed his. The expert - Willem de Winter - confirms that it is genuine. He states that the painting depicts a street scene in Paris, and that it was made in 1906. Rita thinks the painting is beautiful, and wants to learn more about Sluijters and his work. She learns that he experimented with various styles that were typical for the era: including fauvism, cubism and expressionism. She'd like to see a general overview of the differences of these styles and the leaders of the respective movements.

During the show Rita could mark interesting fragments by pressing the "tag" button on her remote control. While tagging she continued watching the show but afterwards these marked fragments are used to generate a personalized extended information show based on the topics Rita has marked as interesting. She can watch this related / extended content directly after the show on her television or decide to have this playlist saved so she can view it later. This is not only limited to her television but could also be a desktop, second screen or smartphone, as long as these are linked together. She's able to share this information on social networks, allowing her friends to see highlights related to the episode.

### 3. TECHNICAL DETAILS

The demo application shows the potential of automatically enriching television content for an enriched end-user experience. The chosen scenario allows a wide variety of enrichment techniques to be deployed: techniques to link AV content to Wikipedia articles, named entity recognition and linking of person, location and art style names, feature detection techniques to link close ups of art objects to visually similar objects in the Europeana data set, metadata based linking, etc.

For this demonstration the front-end is built for web browsers, using HTML5 and JavaScript technology for the implementation of the interactive user interface. This front-end works on top of

the existing WebTV platform<sup>4</sup> used for the project, an XML based service-oriented platform where audiovisual content is stored, processed into different formats and qualities and made accessible through a RESTful web service. It's capable of storing and manipulating the audiovisual content, metadata and fragment [3] based annotations of the enriched broadcast.

In addition, the demo shows how the linked content can be unobtrusively integrated into a simple but aesthetically attractive TV interface that can be used both during and after the original broadcast, and thus forms a potential to make archived content more attractive

### 4. EVALUATION AND FUTURE WORK

The demo is released in May 2012 and will be made available to a selected group of potential users. Subsequent evaluations will be carried out within the context of LinkedTV. This will focus on usability of adding additional layer of information of TV broadcasts, interaction patterns. Based on the outcomes, we will work in a second version. The ambition of this second version is deployment on a real-life setting.

In building the demo application, we found that automatic linking is not perfect and requires moderation by editors of the programme. To alleviate the amount of editing work, we want to investigate the possibility of using social media and crowd sourcing in order to involve users in supplying additional data about specific items in the show. Using the effort of the crowd, we aim to improve and correct the available (context) data and also explore ways to visualize the user's perspective on the material. In this process we aim to maximize the quantity and quality of the content and aim to minimize the amount of moderation that is needed to correct the automated and user generated input. Lastly, subsequent versions will investigate possible ways of involving and engaging users, for instance by creating games or giving the opportunity to make users experts on certain topics.

### 5. ACKNOWLEDGMENTS

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### 6. REFERENCES

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<sup>4</sup> [www.noterik.nl/index.php/id/5/item/43/&dummy=1333187451827](http://www.noterik.nl/index.php/id/5/item/43/&dummy=1333187451827)