

Personalisation and Feedback

Overview of WP6 work

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Objectives of WP6

- Application of personalisation and feedback methods within LIVE:
 - **User modeling methods** will be applied to define models of the LIVE users within the system (Video conductor, Consumer, general audience).
 - **Content selection algorithms** will be used both within the production process to select suitable content from the archives as well for the TV Consumer, who will be presented with content recommendations based on his/her preferences.
 - **Feedback collection and User profiling:** development of the efficient feedback mechanisms (explicit and implicit) to collect feedback from Consumers and synthesis of both approaches into a common updating and user profiling procedure.
- Development of the overall Personalised Content Recommender System, as one of the LIVE system components.

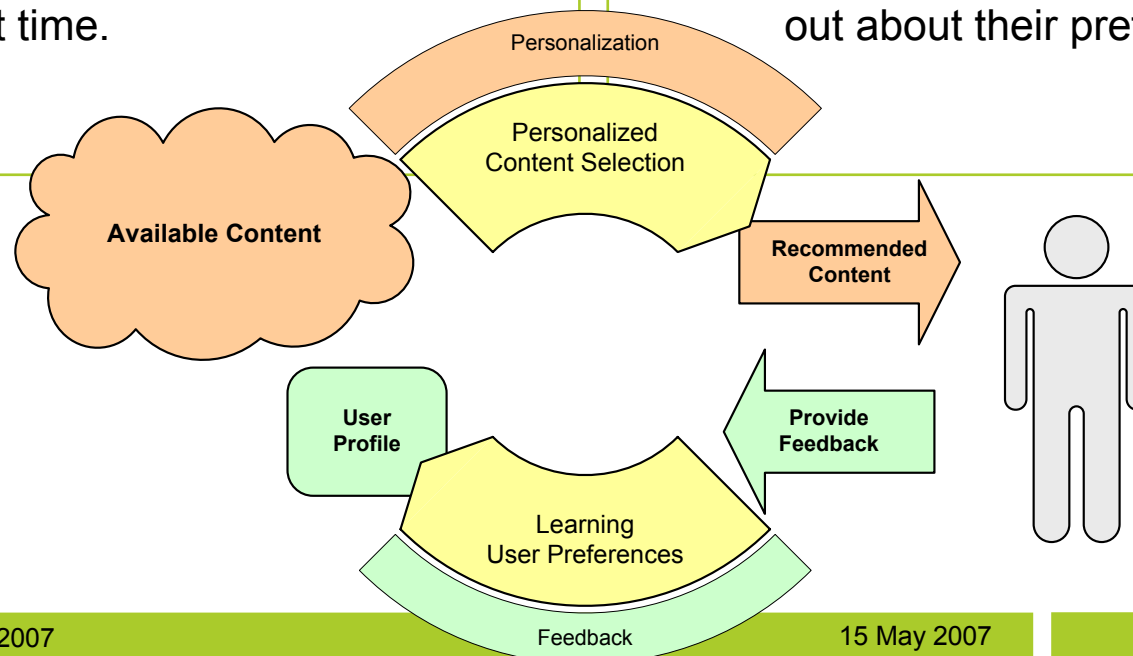
Background

- Motivation:

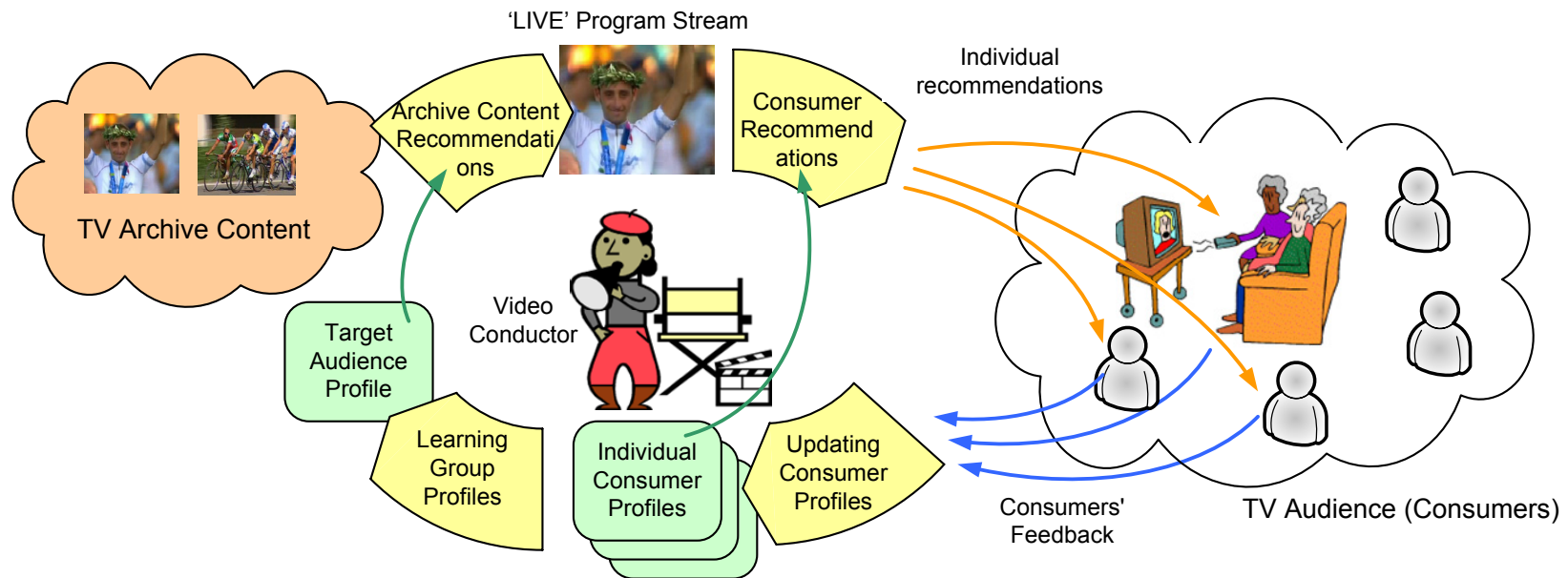
- **Abundant amount of information is created** and delivered over electronic media.
- User is faced with a **challenge how to manage the information flow**, and how to find relevant information at a right time.

- Proposed approach:

- Use **personalised content selection** mechanism to find and recommend content to the user.
- Collect and analyse **feedback** from users to find out about their preferences.



Content Selection and Feedback within LIVE system



- **Content selection within LIVE system:** From available TV Archive the Video Conductor needs to select appropriate clips to illustrate the live sport event or to build parallel story (=channels).
- The LIVE Recommender System will search the archive and prepare content recommendations based on the selected profile of the target audience (has the effect of personalization of content).
- The “LIVE” Program or parts of its content will be recommended to individual Consumers.
- Consumers will provide Feedback (identification, ratings of content, channel viewing time)
- Recommender System analyses feedback and compute Consumer and Audience profiles.

Scientific and Technological Challenges

- **Research challenges:**
 - **The Professional User (Video Conductor, Editor):**
 - Develop methods to **support the professional user in the task of content selection**. The Editor wants to find content in the TV Archive which would fit into his program.
 - **Introduce the knowledge** into the process of content selection: knowledge about the content, knowledge about the domain (for example, sport discipline), knowledge about the event, knowledge about the target audience.
 - Effectively **model the content selection process** so that the User is able to effectively use the system.
 - How to provide **personalization of the content**: the retrieved content must fit to the preferences of the target audience (the Consumers who watch the program).
 - **The Consumer(s):**
 - How to **support the Consumer in the selection of the TV programs and channels?** Our task is to provide individual content recommendations for the Consumer.
 - How to **enable the Consumer to influence the production process?** The WP6 task is to develop methods to collect feedback from Consumers, to analyse the feedback and use the results in the production process.

Scientific and Technological Challenges

- **Research challenges:**
 - **User modeling**
 - Development of **target audience models**: content preferences for fixed groups (example: kids group, analyse preferences to content categories)
 - **Identification of consumer groups** (clustering of users): analysis of individual feedback might reveal significant group of sport fans.
 - Analysis of **content preferences for Olympics sports**: to provide effective recommendations at the field trial, we need to identify consumer preferences about the Olympics content.
 - **Feedback:**
 - **Interpretation of feedback**: how can channel change be interpreted as positive or negative rating of the produced content ?
 - **Requirements and system architecture for the Olympics field trial**
 - **Scenarios of content recommendations** for the Olympics (how recommendations and real-time feedback will fit into live conducting workflow).
 - **Understanding requirements** of field trial (real-time aspect, number of consumers, fix the Olympics content)

Basic Concepts

- **Query Templates for the Editor**

- developed to simplify Editor's work and the User interface,
- their goal is to model the content selection process,
- the idea is to enable reuse and exchange of editor's knowledge.

Search Templates: specify search query

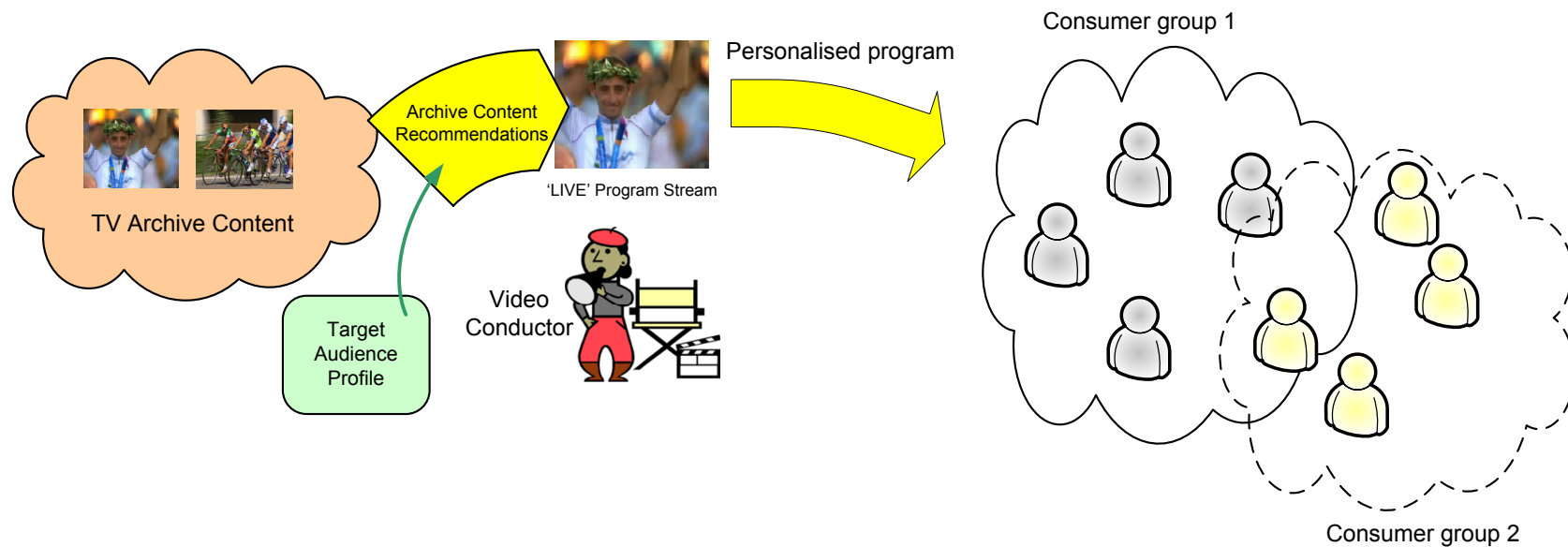
Template description:	General search for AV clips
Sport Name:	Cycling
Competition Type:	One Day Race
Sportsman	
Sportsman Name:	BETTINI Paolo
Participating Teams	
Team name:	
Sportsman Action:	
Related event	
Event name:	
Clip content:	interview

Search Templates: specify search query

Template description:	search sportsman portrait, interview, report
Sportsman Selection	
Sportsman Name:	BETTINI Paolo

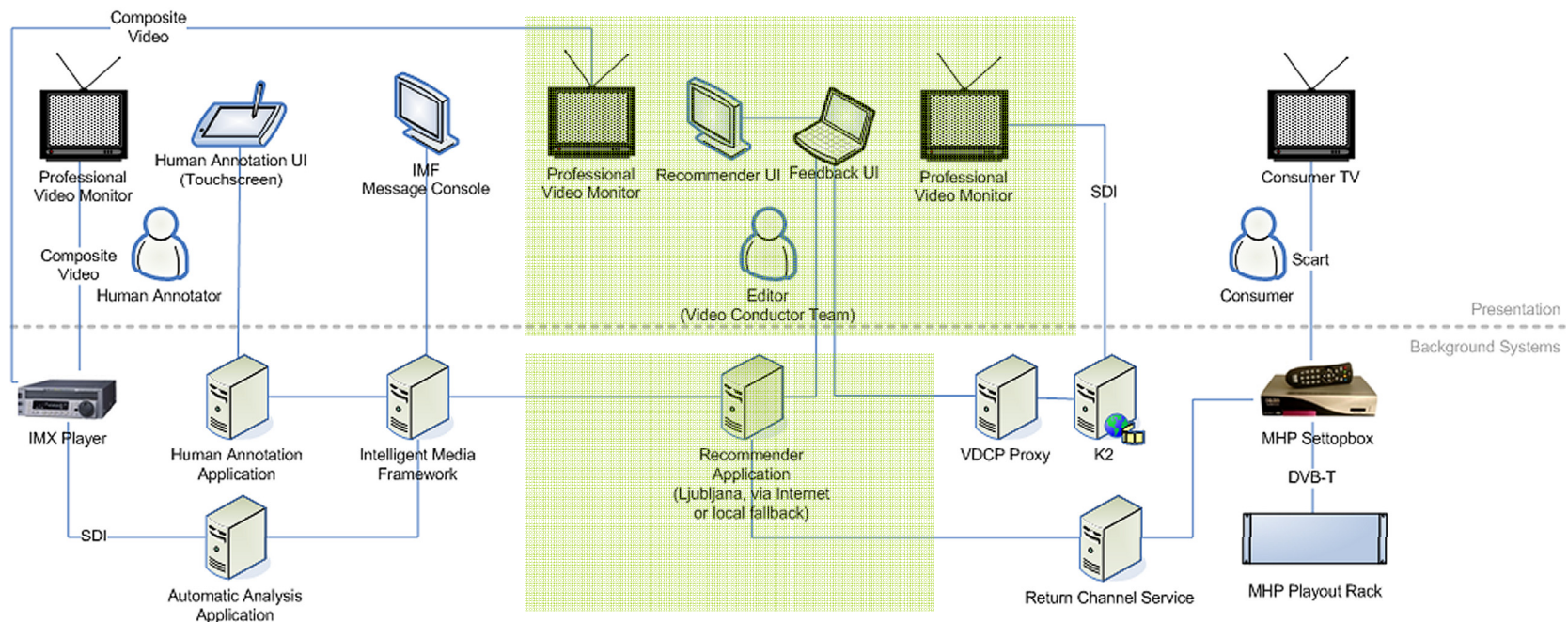
Basic Concepts

- **Personalisation of TV program to the target Audience:**
 - TV content (Clips) are selected according to the preferences of the target group of Consumers.
 - Examples: Austrian audience, Italian audience, Kids, Bicycling fans, etc.



System Development: The Recommender System

- **The Recommender System** is part of LIVE production system and has the following functionalities:
 - Through the Recommender User Interface the Editor can search for content and select content for the TV show. The Feedback UI presents him with information on the Consumers' feedback.
 - The Recommender Application (server) prepares content recommendations for the Editor and for the Consumers. The application collects and analyses Consumers' feedback and present the results to the production team.

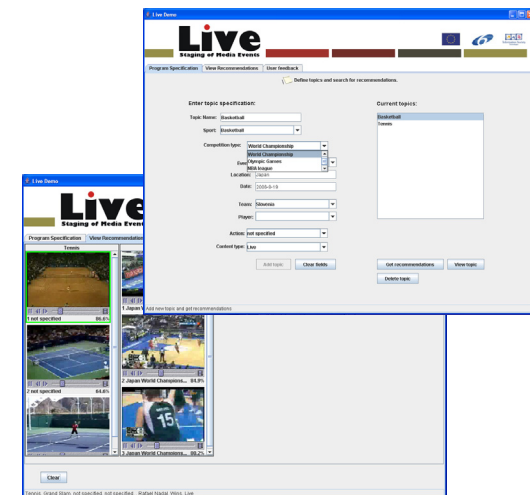


Development of Prototypes

- **Consumer recommendations Demo (July 2006):**
 - Designed to give Consumer the possibility to rate content (express feedback) and to receive personalized content recommendations (custom-made EPG).
 - MHP application on a Consumer set-top box is simulated.
 - First integration of existing technologies from UoL (Recommender server, EPG parser) and FhG (MHP authoring).



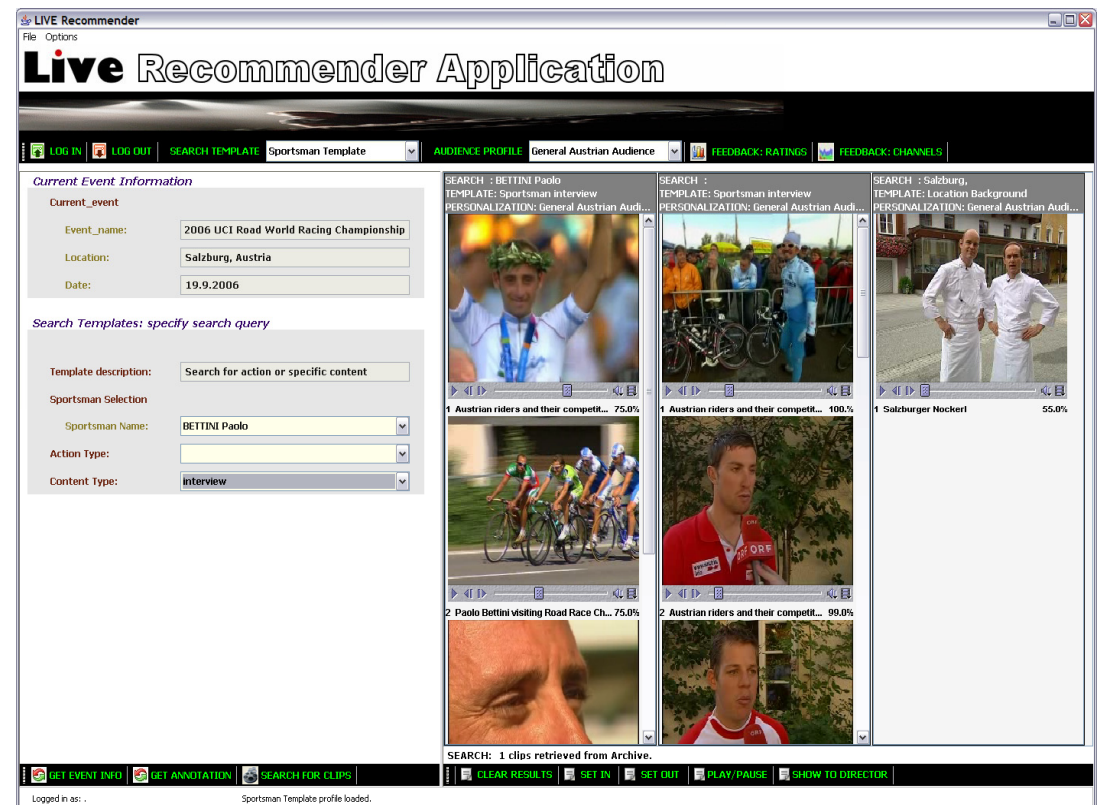
- **Recommender User Interface Demo**
 - Goal was to simulate UI for the Video Conductor / Editor to provide a first impression of the functionalities of the Recommender system.
 - Recommendation of archive content (AV clips) was simulated, clips were played by the application.
 - The demo application was presented and discussed at ORF. The goal was to get an early user evaluation of the design and proposed functionalities.



Development of Prototypes

- **Recommender User Interface:** User Interface for the professional user (the Editor) which enables him to use functionalities of the Recommender System:

- user interface is connected to the Recommender System as a client application and provides access to Recommender System services,
- specification of search terms and selection of predefined search templates,
- selection of personalization profiles (Audience profile),
- display of the event information,
- preview of the recommended content,
- selected content can be shown to the Video Conductor and inserted into broadcast stream.



Development of Prototypes

- **Feedback User Interface for the Video Conductor**
 - First attempt to introduce the results of on-line Consumer feedback into live TV production.
 - Real time analysis of programme ratings is displayed to the Video Conductor.
 - Real time statistics on the number of viewers for each channel.
 - Graphs are updated in regular intervals.
 - The Editor can select the time interval of the analysis: ranging from minutes to hours or even days.
 - The Video Conductor will be able to assess in real time the Consumers' acceptance of the program that he is producing: the unhappy Consumers will result in drop of channel viewers, while happy Consumers might rate the content as "Like it".

