

# MEDIACAMPAIGN - DISCOVERING, INTER-RELATING AND NAVIGATING CROSS-MEDIA CAMPAIGN KNOWLEDGE

H. Rehatschek\*

\* JOANNEUM RESEARCH Forschungsgesellschaft mbH, Institute of Information Systems & Information Management, Steyrergasse 17, A-8010 Graz, Austria.  
E-mail: Herwig.Rehatschek@joanneum.at

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## Abstract

Knowledge about which competitor company has invested how much money in a specific media campaign is very important for the highest management level of companies. Such information is gathered through global advertisement expenditure measurement, which is performed currently manually by media monitoring companies. MediaCampaign targets to automate the detection and tracking of campaigns.

## 1 Objectives

MediaCampaign's scope is on discovering, inter-relating and navigating cross-media campaign knowledge. A media campaign is defined as the universe of measures in order to fulfil a specific objective. The project's main goal is to automate to a large degree the detection and tracking of media campaigns on television, Internet and in the press. This will lead to new business cases in media monitoring and analysis, and positively impact the European media monitoring sector. In support of this goal, the project will address the following objectives:

- Modelling the knowledge present in campaigns and their related business and social processes;
- Analysis of tele-visual and image-based media streams and parallel focussed web analysis to extract features related to campaigns of all types;
- Fusion of the diverse evidence from the different media and different analysis methods;
- Delivery of the campaign data in an end-user pilot prototype.
- Fusion of the diverse evidence from the different media and different analysis methods, with innovative methods to exploit their complementarity.

## 2 Related research

There exist various EC funded projects in the area of semantic based knowledge systems. This chapter gives a brief

overview on the most relevant projects in connection with MediaCampaign and also outlines the main differences.

K-WF-Grid [1] addresses the development of a knowledge-based workflow system to improve operation of the future Grid environment. Semantic modelling methods are applied – aimed at development of workflow, Grid resources and service ontologies – to enable description of Grid processes and use these in the process of workflow construction, service selection and Grid behaviour prediction. Knowledge based workflow management methods might be also considered for MediaCampaign to enhance the flexibility of behaviour of MediaCampaign architecture and drive the campaign monitoring process.

The EU funded project Alert [2] has developed for demonstration a system that makes use of speech recognition technology to automatically detect specific topics in large databases of audio and video clips. Complementary to this project MediaCampaign will utilize multimodal analysis – combined visual, audio and text respectively – and apply a semantic store over the basic analysis results. Additionally MediaCampaign will also apply direct audio analysis procedures such as word spotting and jingle recognition.

The EC funded project AceMedia [3] focuses discovering and exploiting knowledge inherent to the content in order to make content more relevant to the user; to automate annotation at all levels; and to add functionality to ease content creation, transmission, search, access, consumption and re-use. MediaCampaign concentrates on discovery of specific knowledge and does not have content creation and adaptive transmission in its scope. In addition to AceMedia our project will focus on the creation of knowledge bases in order to cross-link gathered information over different countries and media. Where ever possible public results of AceMedia for transmission (if applicable) and automatic annotation will be utilized.

The DETECT [4] project aimed to automatically extract features of digital video streams. Based on the extracted features DETECT shall automatically generate statistics in real-time. In comparison to MediaCampaign DETECT is a real-time system, which works only on video streams. DETECT was mainly concentrated on logo detection within sports videos. MediaCampaign is an off-line system, which analyzes next to video also text and audio and still images.

Furthermore MediaCampaign aims at creating semantic relations between these kind of data and extract relevant information.

DIRECT-INFO is an ongoing research project which specifically targets the business case sponsorship tracking [5], [6] with a distributed multimodal analysis system. After the first year a prototype was set-up with first versions of all analysis components and an initial simple workflow. MediaCampaign will use DIRECT-INFO results and establish a close cooperation with this project.

### 3 Main innovations

For the pilot system developed within the project we will focus on a concrete example for a media campaign: advertisement campaigns e.g. a new car model is introduced into the market, however, the system will be designed in such a way that it can be extended to monitor and analyze also other campaigns such as political campaigns. Hence a major technical objective is to design the system architecture as flexible as possible by using well defined interfaces and utilizing standards for all components where possible.

Scientifically MediaCampaign will discover three main innovations as given below.

#### 3.1 Ontology for cross-media modelling of media presence and campaigns

Media Presence and Campaign Ontology (MEPCO) will be defined, allowing for modelling of media campaigns, including media presence information. MEPCO will have a general cross-media level, extended with fine-grained specifications for the different media. Overall, the project will exploit the advantage of the Semantic Web technologies to model, manage, query and navigate within multi-dimensional information spaces with non-linear dimensions.

#### 3.2 Semantic cross-market product data interlinking

Due to cultural differences and national market specifics similar or analogous products are branded and marketed differently across the countries. This will be handled through semantic representation and mapping of brand and product related data (catalogues, feature-related terminology, etc.). MEPCO will allow for (i) extension with domain ontologies specific to particular markets and (ii) cross-linking artefacts (e.g. products) between those.

#### 3.3 Identification & tracking of new media campaigns in different media and countries

This will be realized by (i) combined multimodal analysis of the media content (text, audio and video), (ii) usage of a semantic media store to consolidate and query the analysis results and all the related materials, (iii) detection and tracking of campaigns based on heuristic patterns and statistical analysis of "popularity" timelines and "media distance" metrics.

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