Smart Media Navigator: Visualizing Recommendations based on Linked Data

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Abstract. The growing content in online media libraries results in an increasing challenge for editors to curate their information and make it visible to their users. As a result, the users are confronted with the great amount of content, unable to find the information they are really interested in. The *Smart Media Navigator* (SMN) aims to analyze a platform's entire content, enrich it with Linked Data content, and present it to the user in an innovative user interface with the help of semantic web technologies. The SMN enables the user to dynamically explore and navigate media library content.

Content in most of today's online blogs and media libraries is arranged in chronological order, which means that the top entries receive the most attention and older yet relevant content remains hidden to the users. Linking current posts entries to older ones manually is one possibility, but contrariwise linking older content to current posts requires much time and effort and thus, cannot be achieved by most editors. In order to search and retrieve the content of multimedia platforms, manually edited tags are generally used, which lack completeness and often are ambiguous and heterogenous. A standardized vocabulary of tags may limit the editors in creativity and topics of interest that appear in future entries may not be considered. In case the user is interested in further information on a specific topic, which is actually not part of the platform, she usually has to leave the platform and may never return.

Recommender systems enable to complement the content dynamically and help the users find related and older but yet relevant information quickly. Traditional methods are based on logfile analysis, collaborative filtering, and content based filtering. The first two always rely on usage data and suffer from a generall cold-start problem, when they are applied to a new content library without an established user community. On the other side, content based filtering has its roots in information retrieval and is widely used with the vector space model in combination with machine learning techniques to estimate the propability if a user will like a similar content item or not. These approaches and their hybrid variations incorporate natural language processing and therefore have to cope with ambiguity. By making use of formal knowledgebases, e.g. provided as DBpedia, semantic technologies help to improve the quality of recommender systems for language processing, recommendation generation, and content enrichment.

The **Smart Media Navigator (SMN)** is an online *recommendation system* based on Linked Open Data. The main target groups for the SMN are broadcast-

ing companies with online media libraries, archives with multimedia content, or video-on-demand platforms. The SMN aims to improve the user's and author's experience while curating and navigating in blogs, multimedia platforms, and archives. The first showcase is the yovisto blog[1], which currently contains more than 800 daily articles consisting of texts, images, and videos. The SMN is integrated as a wordpress plugin. It analyzes and interlinks the platform's content based on semantic relationships among its contents. Its information is then used to automatically link articles with relevant entities from DBpedia. Thus, further articles on related topics, persons, locations or events are recommended to the user. A relation browser is implemented to visualize the relevant relationships, as depicted in *fig. 1*. Editors can take advantage of an integrated annotation tool, which helps to map entities with DBpedia as they write and thus, helps to reduce their workload. The additional information retrieved from DBpedia in combination with the relation browser will not substitute but improve traditionally arranged online multimedia libraries without altering their actual content. It increases the existing content's value and motivates the platform users to stay in the site.

A demonstration of SMN will be given at the conference. The SMN is a project supported by the MIZ Potsdam-Babelsberg[2], Germany, an institute funded by public-service broadcasters to support innovation in media. The project will be finished by February 2015.
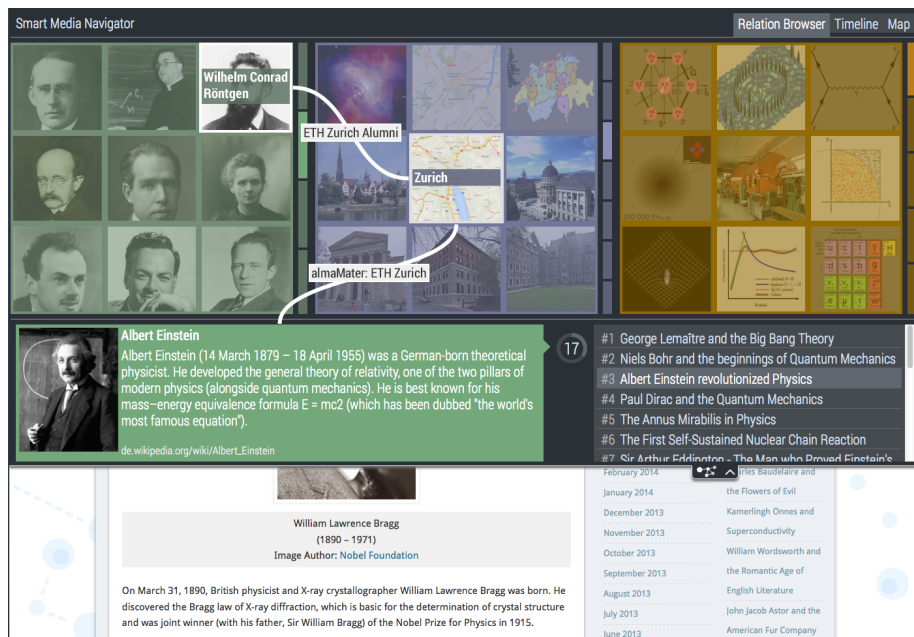

Fig. 1. Relation Browser