Exploratory-based interface for search

Overview

Professional media production requires cutting edge contextualization technology for the daily activities to shield users from the complexity and heterogeneity of the underlying media assets and repositories. In particular, new trends have marked the importance of designing visual tools to browse content by means of exploratory analysis. Different approaches have been followed to accomplish that objective:

On the one hand, an exploratory-based search interface has been designed to enabling better and faster information access due to the use of different configurable controls (e.g. the Ontology Relationship Viewer, Dynamic Facets) to enable the iterative expansion of queries with the aim of visually and progressively refining the result set. The advanced tools hide the technological complexity, offering an improved user experience, while providing swift and engaging exploration and discovery of the target information space. Regular users can rapidly gain access to the information they need, saving time and valuable resource, thereby reducing the time to find the proper media asset.

On the other hand, Semantic Web technologies have been exploited to support contextual search and navigation. The use of ontologies supports regular users by contextualizing traditional keywords, thus enabling a better understanding, description and matching of an asset with a user query by formalizing categories, concepts and relationships among them for a specific domain. The relationships connecting concepts within a domain have concrete meaning, which model the structure and organization's know-how in common and agreed upon fashion, ensuring consistent presentation, understanding and sharing of information. Users can easily navigate the graph-based structure of ontologies in search of a concept or set of concepts to directly refine the result set by indicating whether concepts should be added or removed from the result set.

In depth description

The Exploratory-based User Interface has been designed with the clear goal in mind of managing very large and disparate amounts of information, scattered across content repositories, whilst enabling better and faster information access, sharing and discovery.

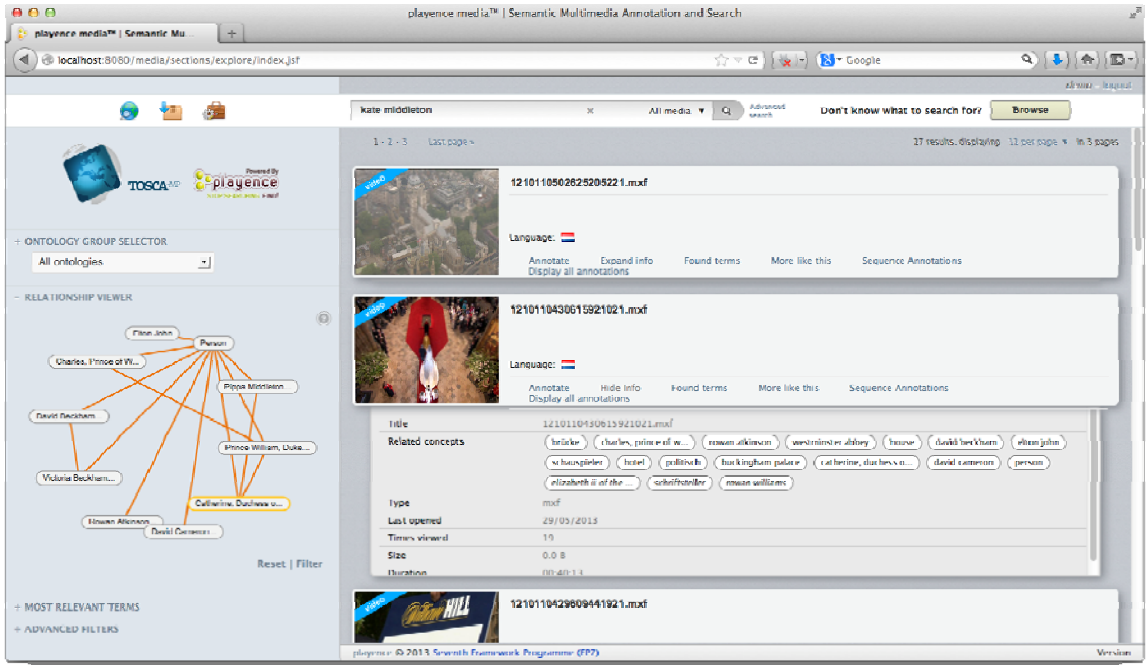

Figure 16: Exploratory-based interface for search

Ontology Relationship Viewer

Opposite to the classical one-shot search process, our approach brings the opportunity to include a graphical way of constructing structured queries in an exploratory and incremental way in further refinement and posing a number of constraints on the results of the query. The approach combines a graph-based approach with the use of domain ontologies in a graphical tool called Ontology Relation View where users can apply logical constraints in the query. In particular, the system allows building a complex query using the following logical operators:

- AND: To find media assets that have all the specified concepts (MUST be in the results),
- OR: To find media assets that have some of the specified concepts (CAN be in the results),
- NOT: The negation clause, to describe those concepts that they do not want in their results (MUST NOT be in the results).

Exploratory-based Ontology Navigation

In many occasions, users are not fully aware of the domain model and thus do not know what is feasible to obtain from the system. In those occasions, users might benefit from exploring the underlying knowledge model with the corresponding support. For these occasions, users can use the Exploratory-based Ontology Navigation in order to navigate through the domain knowledge and select pieces of it. As the number of concepts and instances is potentially high, the system provides different heuristics to simplify the information to be displayed.

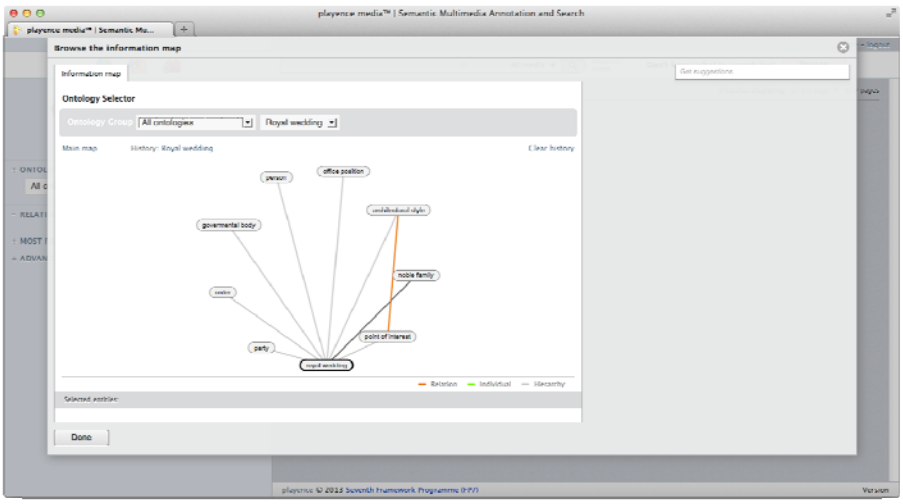

Figure 17 – Ontology Navigation

Potential fields of Application

Any field where the visualization of search results and complex data models is needed, e.g. Enterprise Search.

Possibilities for exploitation

The Exploratory-based interface for search is exploited in combination with the Networked Media Search engine. Moreover, individual components can be integrated with external tools for visualizing complex data models.

Further Information

For further information, check: www.playence.com

Contact Person

Sinuhé Arroyo (sinuhe.arroyo@playence.com)

Carlos de la Vega (carlos.delavega@playence.com)

Carlos Ruiz (carlos.ruiz@playence.com)