

Social Graph

Relations in a Click



What is the problem

Many portals and services have to cope with Users, Contents and external sources and their relationships. In most cases the users need to have a clear view about the relations among these entities to better understand context at a glance:

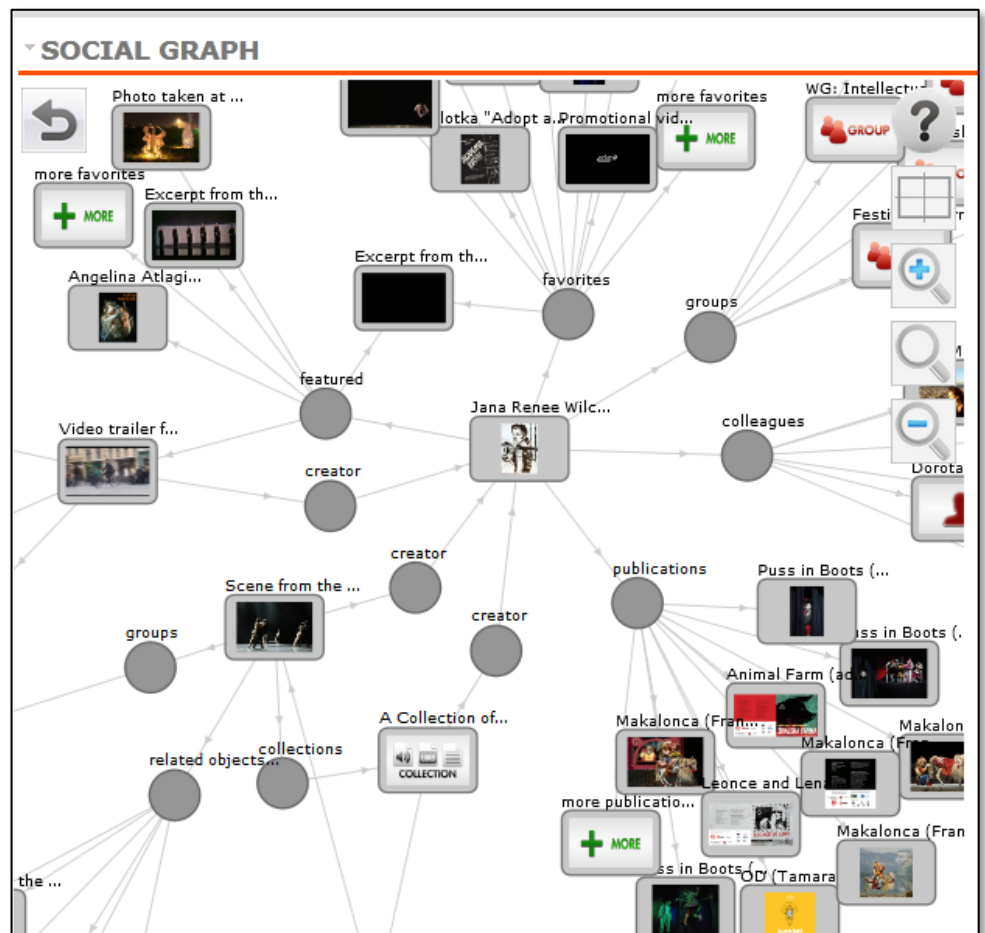
- Who has provided a given content: group, user, etc.
- How a given content has been used by other users: promoted, played, uploaded, updated, etc.
- Which are the geographical locations mentioned by a content, and where is located, may be connected with external geoname, and GPS coordinates
- Which are the person names cited into a content: vip names related to dbPedia, users of the portals, other person names cited in many other content
- Who has been contact with how, what they have done, etc.

The users need to discover and navigate among these relations by selecting those of interest for each specific case.

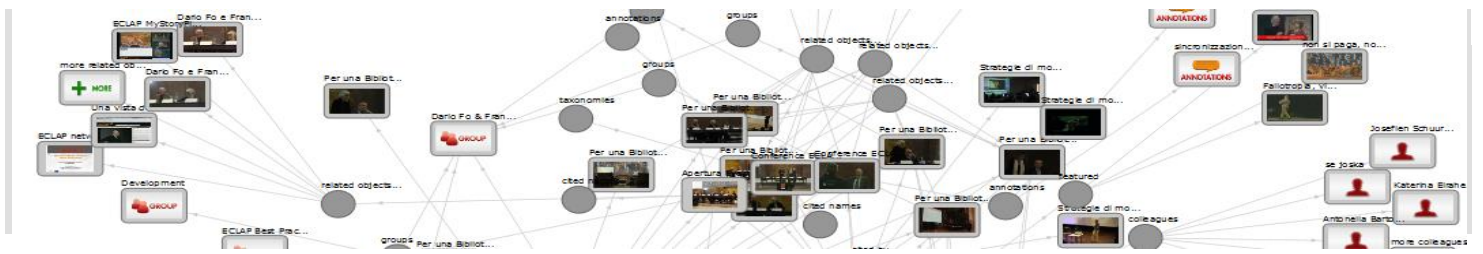
The SocialGraph is a tool and user interface to solve this problem dynamically showing the relationships and resolving cyclic connection. User can select with graph moving and zooming it, turning on/off connections, filtering and expanding, exploring and playing to see more information, exploiting connection with LOD, etc.

How it has been solved

The SocialGraph allows to display and to navigate the relations among the entities managed. The graph is made of two kind of nodes, rectangular shaped nodes represent entities (content, terms, users, etc.) while circular shaped nodes represent relations. Directed edges connect an entity node to a relation node and a relation node to an entity node. Examples of relations are shown in Figure. Regarding the user interactions the User is able to: **Expand** an entity node with its relations adding them to the graph; **Focus** on an entity, in this case the graph is cleared and only the focused node is shown with its relations; **Open**, that is the play of the page or content associated with the node; use the Back button to go back to previous states of the graph (e.g. after a focus); Zoom/Pan the view; Hide/show types of relations to reduce the complexity of the graph. A special node is the **'More'** node that is presented when in a relation are present many nodes (e.g., the content associated with a group). In this case, providing all nodes could be infeasible thus a limited number of nodes is provided and a 'more' node is added to the relation. Clicking on it other nodes are added to the relation in a way similar to classical pagination used to present long lists in HTML.



A special node is the **'More'** node that is presented when in a relation are present many nodes (e.g., the content associated with a group). In this case, providing all nodes could be infeasible thus a limited number of nodes is provided and a 'more' node is added to the relation. Clicking on it other nodes are added to the relation in a way similar to classical pagination used to present long lists in HTML.



How to work with:

The Social Graph consists of a Drupal Module providing information to a client tool. The Social Graph Client Tool can be easily interfaced with REST call to any other portal according to the protocol defined.

The Social Graph categories of nodes and relationships can be easily expanded and customized with few minutes of work.

Who is using it

The Social Graph is presently used on the Home page of ECLAP.EU and it is mentioned as a valuable tool by Europeana ThoughtLab page on new ways of searching and browsing (<http://pro.europeana.eu/web/guest/thoughtlab/new-ways-of-searching-and-browsing#SocialGraph>).

According to the users interaction analysis of the social graph and of the whole portal, the 5.8% of the unique users interacted with the social graph. The most requested operation has been to **Open** a node (43%, for example to access at a recommendation, to see the content of other users), then to **Expand** a node (29%, mainly a media object 17%) and then to see the **More** related content (18%), the **Focus** operation is at about 10% on the operations requested since the social graph was activated (2013-01-29) until the mid of September 2013.

The Social Graph is also used as administrator tool in APREToscana.org

Web links

<http://www.eclap.eu>

<http://www.eclap.eu/116088>

<http://www.eclap.eu/177623>

<http://www.apretoscana.org>

See also on Europeana ThoughtLab

Technologies

- JavaScript, LOD

Exploiting semantic computing:

- Person names recognition and disambiguation algorithms of DISIT
- Geographical names recognition and disambiguation of DISIT
- Natural language processing and data mining

Deploy and platform

- Tested on: Windows, Linux and MAC, any Browser
- Functional for PC, iPad, Android

Main features already available

- *MediaObject* → **creator** → *User* (who has uploaded the object)
- *MediaObject* → **groups** → *Group*, ... (the groups where the object is associated)
- *MediaObject* → **collections** → *Collection*, ... (the collections where the object is present)
- *MediaObject* → **places** → *Place*, ... (the geonames places referred by the object)
- *MediaObject* → **taxonomies** → *TaxonomyTerm*, ... (the taxonomy terms associated with the object)
- *MediaObject* → **annotations** → *Annotation*, ... (the annotations associated with the object)
- *MediaObject* → **comments** → *Comment*, ... (the comments associated with the object)
- *MediaObject* → **related objects** → *MediaObject*, ... (the objects that are 'similar' to an object)
- *MediaObject* → **cited name** → *VIPName*, ... (the names cited in the object metadata)
- *MediaObject* → **cited name** → *User*, ... (the user name cited in the object metadata)
- *User* → **featured** → *MediaObject*, ... (the objects that were featured by the user)
- *User* → **favourite** → *MediaObject*, ... (the objects that were preferred by the user)
- *User* → **publications** → *MediaObject*, ... (the objects uploaded by the user)
- *User* → **cited by** → *MediaObject*, ... (the objects that cited the user in the metadata)
- *User* → **colleagues** → *User*, ... (the other user that are colleagues of the user)
- *User* → **groups** → *Group*, ... (the groups subscribed by the user)
- *Group* → **members** → *User*, ... (the members of the group)
- *Group* → **administrators** → *User*, ... (the administrators of the group)
- *Place* → **formed** → *Place*, ... (the other geonames that are part of a geoname)
- *Place* → **belong** → *Place* (the geoname contains another geoname)
- *Place* → **objects** → *MediaObject*, ... (the objects associated with the geoname place)
- *TaxonomyTerm* → **broader** → *TaxonomyTerm* (the term that is broader than another term)
- *TaxonomyTerm* → **narrower** → *TaxonomyTerm*, ... (the terms that are narrower than the term)
- *TaxonomyTerm* → **objects** → *MediaObject*, ... (the objects that are associated with a term)
- *VIPName* → **cited by** → *MediaObject*, ... (the objects that cite the name in the metadata)
- *VIPName* → **synonymous** → *DBPediaURL*, ... (the resources on dbpedia with name)
- *Collection* → **objects** → *MediaObject*, ... (the objects that are part of the collection)
- *Comment* → **writer** → *User* (the user that wrote the comment)
- *Annotation* → **writer** → *User* (the user that created the annotation)
- *Annotation* → **reference** → *MediaObject* (the media object referenced in the annotation)

Test it !! <http://www.eclap.eu/super/sg/>



Contact

Paolo Nesi

DISIT Lab: Distributed Data Intelligence and Technology Lab
 DINFO: Dipartimento di Ingegneria dell'Informazione
 Universita' degli Studi di Firenze
 Faculty of Engineering
 Via S. Marta, 3; 50139 Firenze, ITALY
<http://www.disit.dinfo.unifi.it>
 E-mail: paolo.nesi@unifi.it
 Office: +39-055-4796523,
 DISIT Lab: +39-055-4796567