

Modelli Semantici e Gestione della Conoscenza: Social Network vs Knowledge Management Systems

seminario per il Corso di Dottorato 2013

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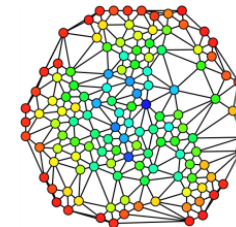
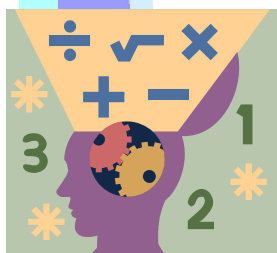
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Struttura del Seminario

- Social Networking and knowledge
- Semantic and Social Networks
- Recommendations and Suggestions
- Natural Language Processing System
- Knowledge Representation System
- Reasoning System
- Sistema OSIM
- Anatomy of a Social Network





Introduction to Social Networks

- With the *users demand* in collaborating and sharing information Social Networks have been created
- **Social Networks** (according to OECD, Organisation for Economic Co-operation and Development) are web portals that **allow users to:**
 - ♣ provide and share User Generated Content
 - ♣ valorize their creative effort: the content should be originally produced by the users -- e.g., take a picture, compose a set of images, sync. images and audio, etc.
 - ♣ users produce content by using non professional solutions and techniques
- Other solutions using UGC are Blogs, Wiki, Forum, etc.





Social Network Motivations

- **Creating Social relationships and contacts**
 - ♣ Finding new friends
 - ♣ Sharing content with friends
 - ♣ Get knowledge about what other people do in their life
- **Increasing Knowledge of users**
 - ♣ on specific topics, the subject of the UGC and of the SN
 - ♣ on how content can be created and shared
- **Personal advantages for the users**
 - ♣ Increasing visibility in the community and in the job
 - ♣ Taking the leadership, be observed by a community
- **Save money for the users**
 - ♣ Storing user content permanently and making it accessible for its own usage (making it public as side effect)
 - ♣ making content public for friends





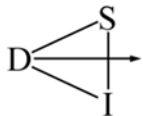
Best Practice Networking

- La conoscenza è su WEB.
 - ♣ Oggi su Web, tutto ruota intorno al Social Networking
- L'evoluzione delle SN, verso una gestione più completa della conoscenza sono le BPN
- Le BPN sono in modo sostanziale delle SN tematiche in cui la conoscenza viene **prodotta, catturata ed esternalizzata** attraverso strumenti di lavoro collaborativo quali:
 - ♣ **Groupware, blog, forum, commenti, chat, emails, wiki**
 - ♣ **Conoscenza indicizzata in db semantico, accessibile,**
 - ♣ **Formalizzazione del workflow**

BPN: Creazione & Gestione



g Mapping sul modello di Nonaka & Takeuchi, 1995





Content Searching in Social Network

- Traditional Classification based on Metadata
 - ♣ Faceted search
- Taxonomies
- Free Tags, as Folksonomy
- Geotagging, GPS data
- Annotations
- Votes





Sn: User Classification

- **Lurkers: passive users,**
 - ♣ take and do not contribute: no content, no other users,
 - ♣ can be even frequent users to read
 - ♣ they are typically invited and does not invite
- **Occasional users:**
 - ♣ sometimes they also contribute with UGC
 - ♣ marginal active in terms of invitations
- **Active users:**
 - ♣ frequently contribute
 - ♣ The first source of invitations of users and content
- **Pushers:**
 - ♣ Typically active users paid to stimulate activities with content, discussions, users, mailing, etc.



User Activities on Social Networks

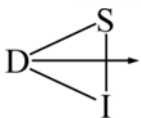
○ Wikipedia (2006)

- ♣ 68000: active users
- ♣ 32 millions of lurkers
- ♣ While the 1000 more active users produced the 66% of changes.

○ Similar numbers in other portals:

- ♣ 90% lurkers
- ♣ 9% occasional users
- ♣ 1% active users

- ♣ 90% is produced by the 1% of active users
- ♣ 10% is generated by the 9% of users including the occasional



Relevance of Users

○ Number of Connections with other users

Direct connections,

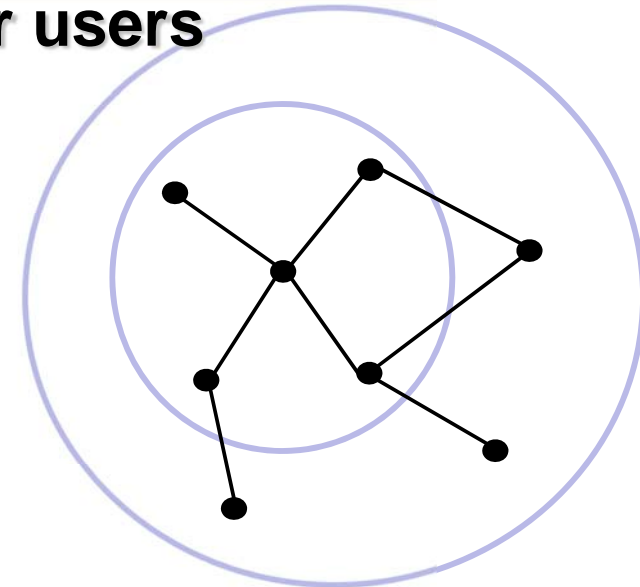
- ♣ Second and third level connections,
- ♣ Etc.

○ Number of accesses to their

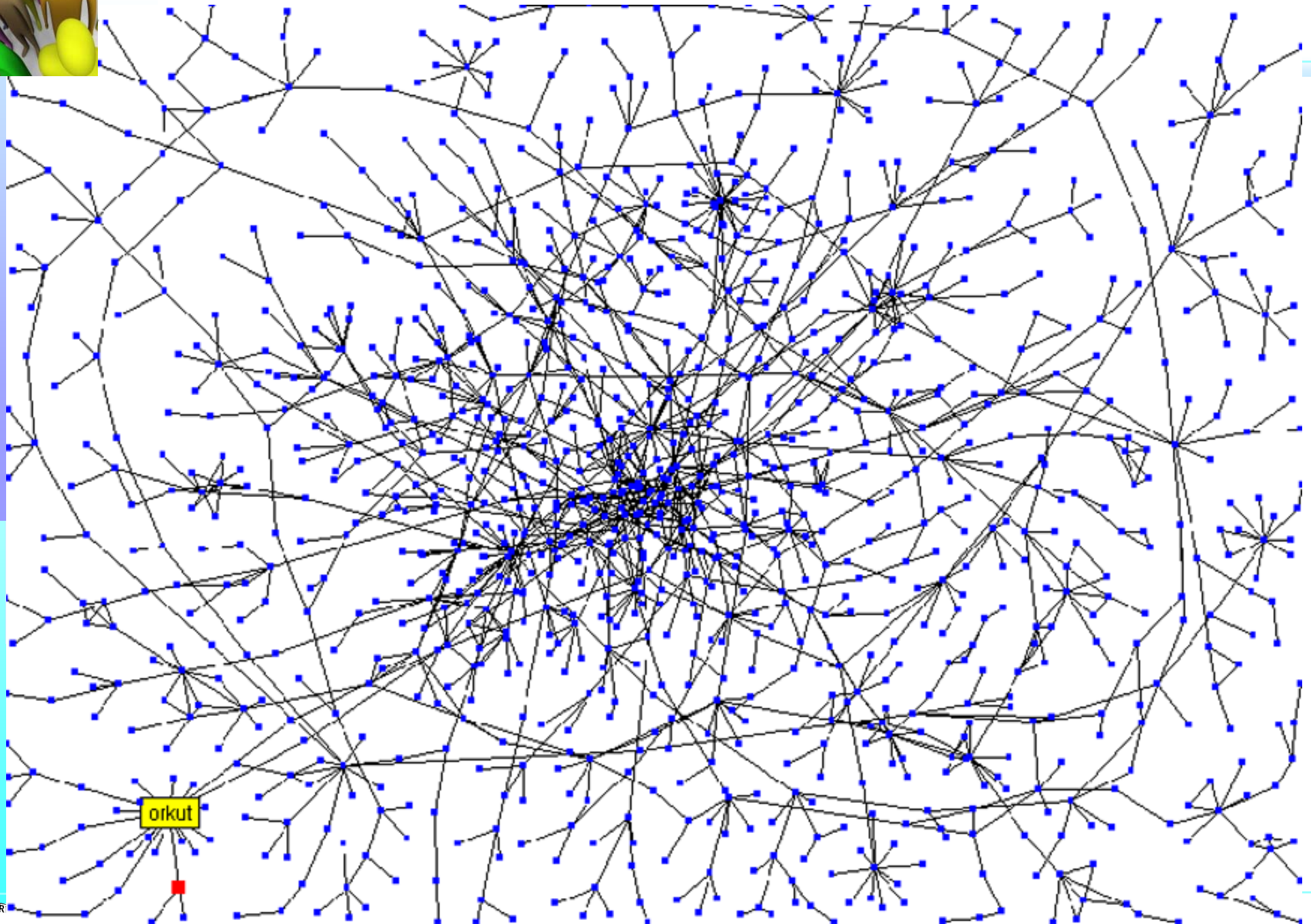
- ♣ profile page (if any)
- ♣ posted and/or preferred content
- ♣ Comments
- ♣ groups

○ Users' Activities

- ♣ Number of posted content in time
- ♣ Number of posted comments, on content, on area...
- ♣ Number of votes per content, per area, etc.
- ♣ Number of accesses to the network



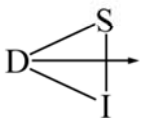
Stanford Social Web





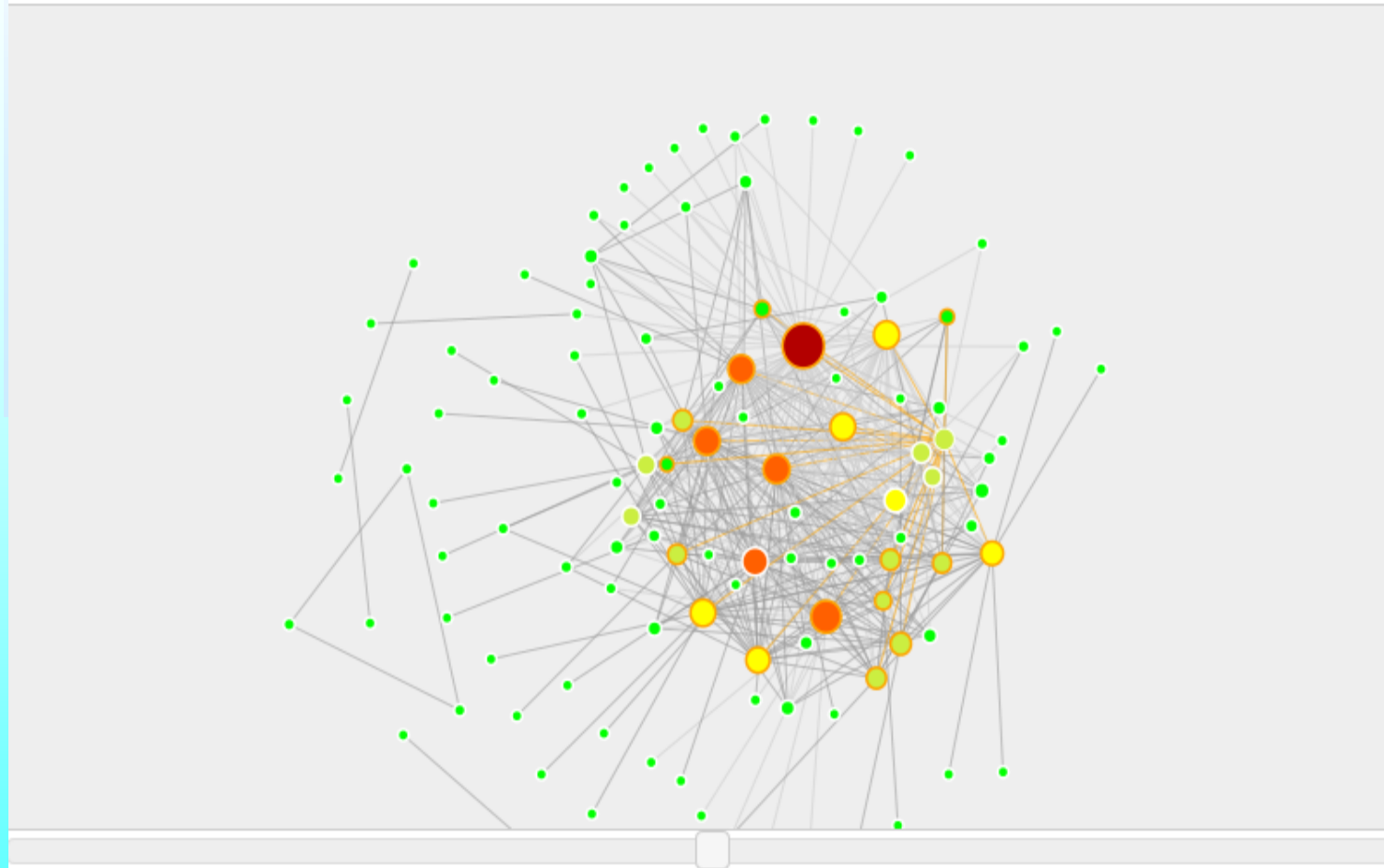
Issues on Community Graphs

- **Absence of not connected users that may be the majority**
- **Presence of a main Center of gravity**
 - ♣ Presence of dense groups with leader or reference users
- **Number of Connections**
 - ♣ Distribution of connections
 - ♣ Density of connections
- **Presences of remotely located small Groups**
 - ♣ Self connections among these people
 - ♣ Some of these smaller remote groups are linked with the rest via 1 or few more chains of single people
 - ➔ Depending on their activities, the risk of losing those communities is evident





User Metrics



Connection

Nodes: 1117
 Links: 418
 Isolated nodes: 1002

In this graph nodes represent the users of the entire social network and edges indicate friendship. The radius of nodes depends on the value of the metric. Click on the node which you want to know.

Links length: 120

Charge: -100

Gravity: 0.2

Friction: 0.4

Enter the rate of connected nodes to display in the graph, according to the metric value.

Color map

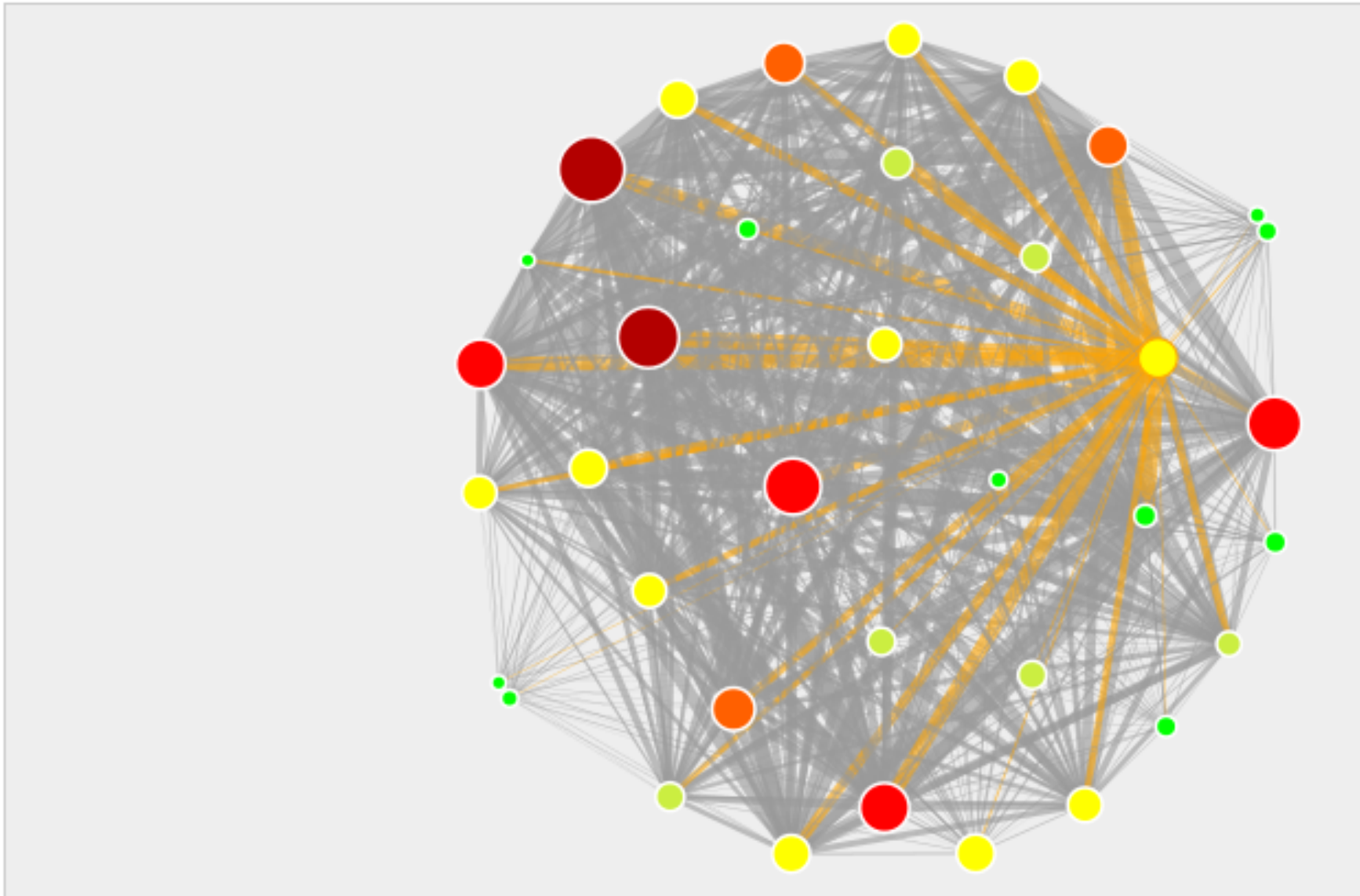
Color	Value range
	0 - 10.67
	10.67 - 21.33
	21.33 - 32
	32 - 42.67
	42.67 - 53.33
	53.33 - 64





Group Connectivity

Groups Graph





Centrality of User Profile

○ **Static**

- ♣ generically provided during registration.
- ♣ frequently not so much detailed in generic Social Networks, since users prefer to avoid filling in 'useless' forms and/or to provide false data.
- ♣ In small thematic and business oriented Social Networks the information is much more reliable.

○ **Dynamic**

- ♣ collected on the basis of the activities users perform on the portal elements,
- ♣ such as those on content, on other users:
- ♣ changed by users, Inferred by relationships

Profilo degli utenti

➤ Informazioni statiche:

• Informazioni generali:

- nome, cognome, sesso,
- foto, data di nascita,
- descrizione personale,
- località di provenienza (ISO 3166),
 - Nazione
 - Suddivisione
 - Provincia
- lingue parlate (ISO 369)

• Informazioni di contatto:

- lista di contatti di instant messaging

• Scuola e Lavoro:

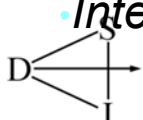
- scelta del livello scolastico,
- nome della scuola,
- tipo di lavoro,
- nome del posto di lavoro

➤ Informazioni dinamiche:

- Lista di oggetti preferiti
- Lista di amici
- Lista gruppi
- Voti positivi ad oggetti
- Commenti ad oggetti
- ...
- ...
- Informazioni sulle preferenze sulla base delle visualizzazioni degli oggetti
 - Format
 - Type
 - Taxonomy

• Interessi:

- Vettore contenente la lista di valori del campo





Direct Measures on User Actions

- **Given a temporal Window:** from date XX to date YY,
 - ♣ the following measures/distributions should be estimated
- Distribution of content **access** per
 - ♣ **Protocol:** download/streaming, progressive download, P2P
 - ♣ **Platform:** IE, FF, Chrome,
 - ♣ **Device:** PC, mobile, iPhone, iPad, etc..., ..
 - ♣ **nationality**, region, city
 - ♣ **language/locale** of the browser
 - ♣ **registered/not** registered on the portal
- Distribution of content **access** per **Portal Section**
- Distribution of content **access** per **Group, Person**
 - ♣ Privacy issues
- Distribution of content **Upload** per **Person/group**
 - Privacy issues



User Profile Problems

- **Different data types:**
 - ♣ Numbers: age, votes, #kids, ..
 - ♣ Enumerates/symbolic: language, nationality, etc.
- **Multiple Values / Selections:**
 - ♣ languages, nationalities, preferences, etc...
- **Non-Symmetrical Distances**, for instance:
 - ♣ Preferences: $Dim (\{Pref(A)\}) \neq Dim (\{Pref(B)\})$
- **Dynamic information**
 - ♣ related computational complexity
- **Different Languages** of comments, descriptions,
 - ♣ Language processing and understanding
 - ♣ Dictionaries, Semantics, Taxonomy, etc.



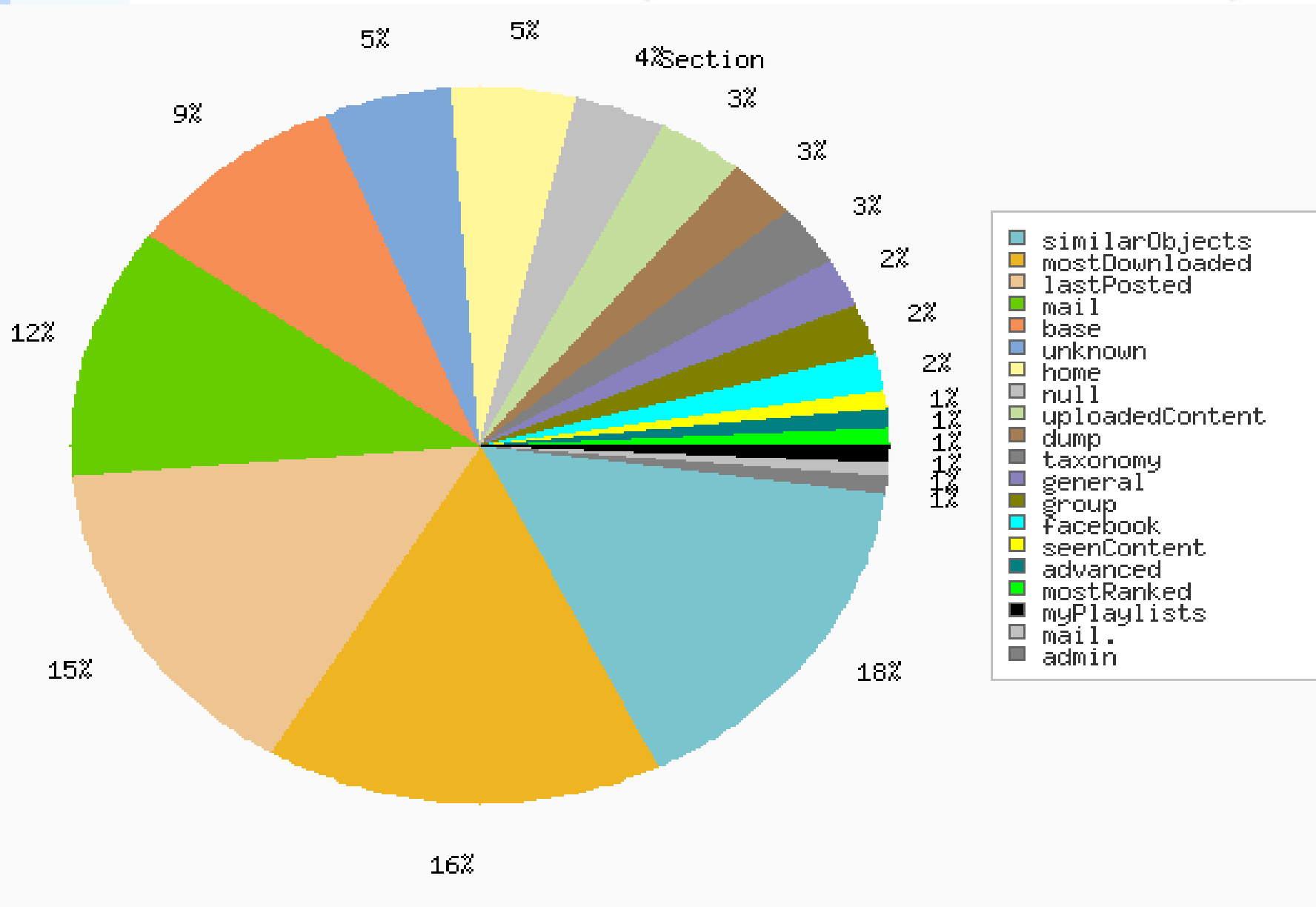
friendship propagation

- User links and friendship propagation....
- **Mechanisms for invitation**
 - ♣ User A invites N Users
 - ♣ Among these N Users, M Accept the invitation
- **Viral Indicator**
 - ♣ If $M > N$ a mechanism of viral grow is started
 - ♣ It can exponentially grow up or to simply produce a small pike
- **Users have:**
 - ♣ Direct Friends----- for example: 90
 - ♣ Indirect Friend of different levels -----: level 1: 900
 - ♣ Friends via groups (see LinkedIn) -----: 14000





Distribution of content access per Portal Section (from ECLAP.EU)





Business Models of UGC/SN

○ Advertising

- ♣ Publication of ads (banners) on the Social Network
- ♣ A value proportional to the number of users

○ Targeted Advertising

- ♣ Placement of ads on the basis of Users, context, content, etc.
- ♣ Cost per Click, cost per impression, etc.

○ Donations

- ♣ See Wikipedia

○ Pay per Item

- ♣ A small price for each item
- ♣ A license for each item, DRM, CAS

○ Subscription

- ♣ A monthly subscription to have more power, see Second Life

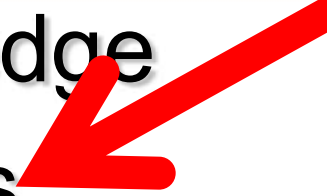
○ Selling of Services

- ♣ LinkedIn, Second Life, etc.





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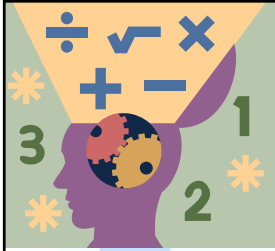




Semantic Descriptors and info 1/3

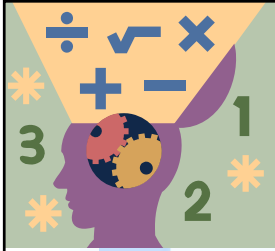
- **user profile descriptions** collected via user registration and dynamically on the basis of user actions, migrated also on the mobile:
 - ♣ selected content, performed queries,
 - ♣ preferred content, suggested content, etc.;
- **relationships among users/colleagues** (similarly to friendships, group joining) that impact on the user profile and are created via registration, by inviting colleagues, etc.;
- **user groups descriptors** and their related discussion forums and web pages (with taxonomic descriptors and text);





Semantic Descriptors and info 2/3

- **content descriptors** for simple and complex content, web pages, forums, comments, etc.;
- **device capabilities** for formal description of any acceptable content format and parameters, CPU capabilities, memory space, SSD space;
- **votes and comments on contents, forums, web pages, etc.**, which are dynamic information related to users;



Semantic Descriptors and info 3/3

- **lists of elements marked as preferred by users**, which are dynamic information related to users;
- **downloads and play/executions** of simple and/or complex content on PC and mobiles, to keep trace of user actions as references to played content, which are dynamic information related to users preferences;
- **uploads and publishing** of user provided content on the portal (only for registered users, and supervised by the administrator of the group). Each Content element has its own static metadata, descriptors and taxonomy; while the related action of upload is a dynamic information associated with the User who performed it. In addition, Content elements can be associated with Groups.



Group Descriptors

- **Groups** of users they may have specific descriptors and those inherited by the users:
- **static** aspects of the groups such as:
 - ♣ objectives, topics, web pages, keywords, taxonomy, etc.;
- **dynamic** aspects related to:
 - ♣ users belonging to the group; users may: join and leave the group, be more or less active over time;
 - ♣ content associated with the group: files, comments, etc., with their taxonomical classification, metadata and descriptors.



Content Descriptors

- **Static aspects** : more relevant since the content description is typically not changing over time. They are:
 - ♣ metadata, keywords extracted from description, comments, etc.;
 - ♣ technical description (as the Format in the following): audio, video, document, cross media, image,...;
 - ♣ content semantic descriptors such as: rhythm, color, etc.; genre, called Type in the following;
 - ♣ groups to which the content has been associated with;
 - ♣ taxonomies classification to which the content has been associated, taking into account also the general taxonomy;
- **dynamic aspects** are marginally changed and may be related to:
 - ♣ user's votes, user's comments;
 - ♣ number of votes, comments, download, direct recommendations, etc.;





Semantic Descriptors

- **Modeling descriptors with formalisms:**

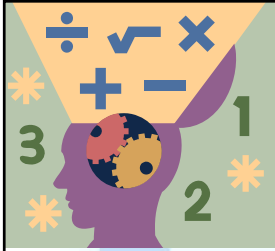
- ♣ XML
- ♣ MPEG-7, metamodel for descriptors and descriptors
- ♣ MPEG-21: item descriptor and/or package

- **Audio, Video, images:**

- ♣ **Low level** fingerprint/descriptors
 - Hash, MD5, etc.
- ♣ **High level** fingerprint/descriptors
 - Genre, rhythms, color, scenes/movements, etc.
 - Evolution of them along the time, along the file

- **Documents:**

- ♣ Keywords extractions, multilingual agnostic, ...
- ♣ Summarization
- ♣ Paragraphs modeling and descriptions



Usage/Prod of Semantic Information

- **content ingestion.** semantic tagging while technical descriptors about digital resources are added during the automated adaptation and icon production;
- **repurposing and publication for several kinds of end-user devices**
- **extraction of semantic technical descriptors** from simple and complex essences,
- **content indexing** to prepare and accelerate the process of search.
- **packaging content and semantics into MPEG-21/AXMEDIS** binary format: integrating digital essences with metadata and descriptors
- **exporting content** to other databases, or posting them on other social networks or portals, publishing on P2P networks
- **estimating similarities among users, objects/content**, to pose the basis of generating suggestions and reasoning;
- **producing suggestions** about potential colleagues, interesting content, and groups;





Content Enrichment

- The content, UGC, reaches the Social Network with partial information
- **Content Enrichment is needed** to get enough semantic information for
 - ♣ indexing/querying and producing suggestions
- **Content enrichment** may be performed by:
 - ♣ Addition/Extraction of semantic descriptors
 - ♣ Multilingual translation for metadata
 - ♣ Addition of annotations, textual and audiovisual
 - ♣ Association of SKOS/taxonomical terms
 - ♣ Association of Tags → folksonomy
 - ♣ **Comments, rating, citations, etc.**
 - ♣ **Creation of Aggregations: collection, courses, play lists**

Extraction of semantic descriptors

○ Technical Information

- ♣ duration, resolution, size, dimension, video rate, sample rate and size, file format, MIME type, number of included files, file extension, etc.
- ♣ libraries or tools can be used to extract information: FFMPEG for video and audio, ImageMagik for images, etc.

○ Context information:

- ♣ summary and extract keywords;
- ♣ Video processing to: segment in major scenes, understand them, identify objects, colors, etc.
- ♣ audio processing to extract tonality, rhythm, etc.
- ♣ Images processing to extract contained objects, etc.



High Level Reasoning Semantic Computing, 1/2

- **Linguistic processing:** assessment of intentions, understanding
 - ♣ Extraction of positive/negative impressions
 - ♣ Technical instruments:
 - ➔ Ontology production, integration, augmentation
 - ➔ Ontology merging, engines
 - ➔ Processing OWL
 - ➔ Triple database, Semantic SQL

- **Semantic meaning** of high level information
 - ♣ Dictionaries: to compare/infer multilingual keywords
 - ♣ Folksonomies: production of free keywords
 - ♣ Taxonomies: specialization relationships
 - ♣ Ontology: a range of relationships





High Level Reasoning Semantic Computing, 2/2

- **Taking decision** on the basis of Descriptors and their relationships

- ♣ Technical instruments:

- ➔ Taking decision engines
 - ➔ inferential engines such as Jena,
 - ➔ rules based systems,
 - ➔ script-based rules,
 - ➔ constraint programming,
 - ➔ First logic, temporal logic engine, etc.

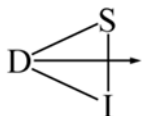
- **Recommendations/suggestions**, production of

- ♣ Technical instruments:

- ➔ Clustering among elements: content, users, groups, ..
 - on the basis of distances/similarities among descriptors
 - ➔ Clustering models: K-means, k-medoid, hierarchical clustering

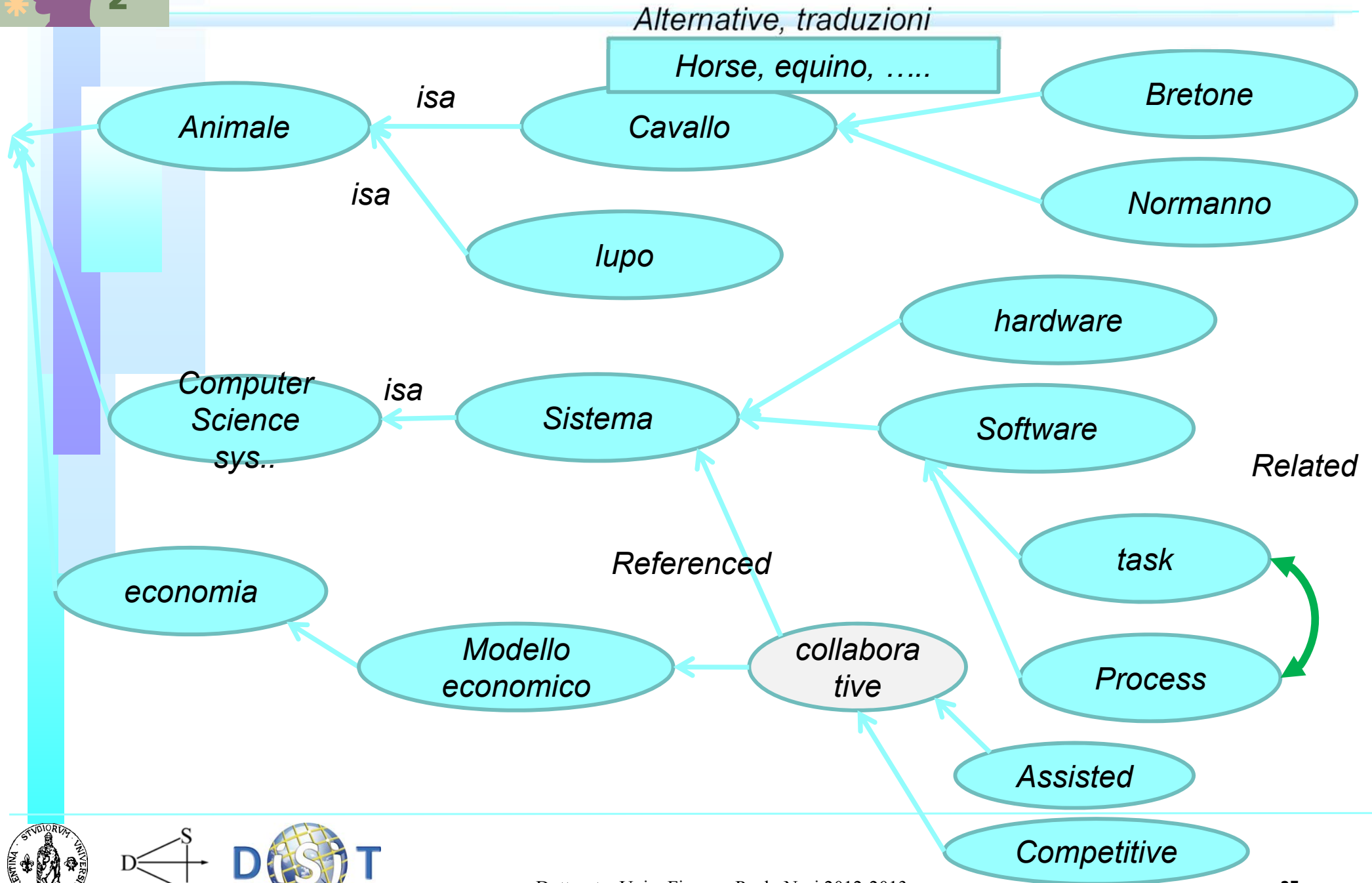
Esempio di Tassonomia

- Classificazione secondo vari assi
- Dominio Specifico
- Multilingua
- Istanze connesse a più nodi
- Preso da:
<http://mobmed.axmedis.org>





SKOS simple knowledge organization system





FOAF: Friend of a Friend

- **Friend of a Friend (FOAF):**

- ♣ A format for supporting description of people and their relationships
- ♣ a vocabulary in OWL for sharing personal and social network information on the Semantic Web
- ♣ **Based on AAA principle:**
 - ➔ Anyone can say anything about any topic

- **Modeling Information:**

- ♣ Organization at which people belong
- ♣ Documents that people have created/co-authored
- ♣ Images that depict people
- ♣ Interests/skill of people,...
- ♣

FOAF: Friend of Friend

```
<foaf:Person>
```

```
<foaf:name>Peter Parker</foaf:name>
```

```
<foaf:gender>Male</foaf:gender>
```

```
<foaf:title>Mr</foaf:title>
```

```
<foaf:givenname>Peter</foaf:givenname>
```

```
<foaf:family_name>Parker</foaf:family_name>
```

```
<foaf:mbox_sha1sum>cf2f4bd069302febd8d7c26d803f63fa7f  
20bd82</foaf:mbox_sha1sum>
```

```
<foaf:homepage rdf:resource="http://www.peterparker.com"/>
```

```
<foaf:weblog
```

```
  rdf:resource="http://www.peterparker.com/blog"/>
```

```
<foaf:knows> <foaf:Person>
```

```
  <foaf:name>Aunt May</foaf:name></foaf:Person>
```

```
</foaf:knows>
```

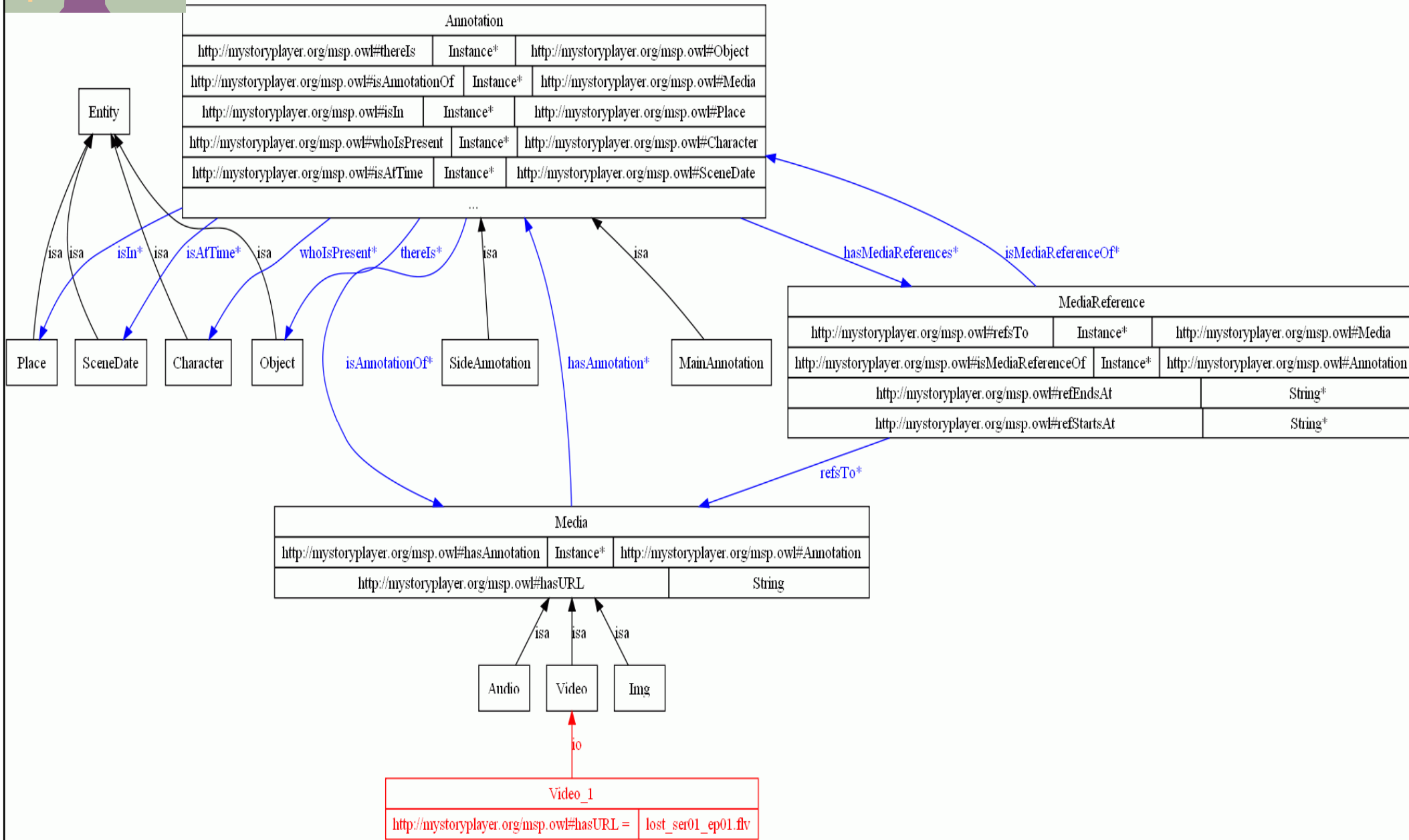
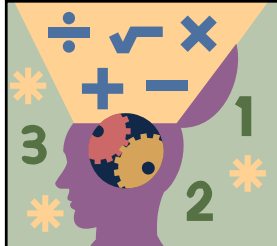
```
</foaf:Person>
```



Ontologie

- L'ontologia è una specificazione *formale esplicita* di una *concettualizzazione* di un *dominio*
- Rappresentano:
 - ♣ Concetti e oggetti: modelli, categorie, proprietà,..
 - ♣ Relazioni fra concetti e fra relazioni
- Idealmente mirano a modellare in modo “*esaustivo*” un dominio

Un Esempio



Base Ontologica

- Si può formalizzare in OWL (ontology web language), XML (Extensible Markup Language)
- Unifica/Generalizza modelli come:
 - ♣ Tassonomie
 - ♣ Tesauri
 - ♣ Vocabolari
 - ♣ SKOS: simple knowledge organization system
 - ♣ FOAF: friend of a friend



Base Ontologica

- Le ontologie sono specifiche di un dominio
- Spesso prodotte in team e formalizzate in OWL, vi sono strumenti di:
 - ♣ Editing, e.g., Protégé
 - ♣ Database semantici, e.g., Sesame in RDF (Resource Description Language)
 - ♣ Inferenza su database
 - ♣ Query semantiche, per esempio formalizzati in SPARQL (Simple Protocol and RDF Query Language)
 - ♣



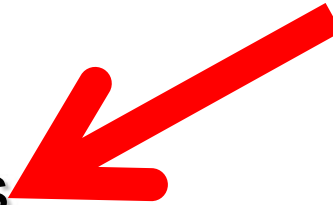
Base di Conoscenza

- Si può vedere come: Ontologia + istanze
- Le istanze dei concetti, delle relazioni, popolano la base di conoscenza connettendosi all'ontologia con la relazione di *instance-of (io)*, e.g.:
 - ♣ il documento **afkagf.pdf** connesso al nodo **Analgesia** della tassonomia **MobMed**
 - ♣ **Carlo Rossi** e' un **Paziente**
 - ♣ **Carlo Rossi** e' figlio di **Giovanni Rossi**



Struttura del Seminario

- Social Networking and knowledge
- Semantic and Social Networks
- Recommendations and Suggestions
 - Raccomandazioni / suggerimenti
 - Metrics Similarity Distances
 - Clustering algorithms comparison
 - Performances, Incremental Clustering
 - Suggerimenti $U \rightarrow U$ an improvement
 - Validazione del modello di suggerimento
- Natural Language Processing System
- Knowledge Representation System
- Reasoning System
- Sistema OSIM
- Anatomy of a Social Network





Recommendations

- **Different Recommendations/Suggestions**

- ♣ $U \rightarrow U$: a user to another user on the basis of user profile
- ♣ $O \rightarrow U$: an object to a user on the basis of user profile
- ♣ $O \rightarrow O$: an object on the basis of a played object of a user
- ♣ $G \rightarrow U$: a group to a user on the basis of user profile
- ♣ Etc...

- **Objects can be:**

- ♣ Advertising, Content, Events, etc.
- ♣ Some of them may have specific descriptors...





Different Recommendations

- **FOR YOU: Suggesting Users to another Users since they**

- ♣ have similar preferences
- ♣ like/prefer what you like/prefer
- ♣ are friends of your friends
- ♣ are in one or more of the your groups
- ♣ are new of the Social Network
- ♣ are the most linked, grouped, active
- ♣ etc.

- **FOR THE SN: Suggesting Users to another Users since they**

- ♣ *are important for the SN and do not have to left alone, the new entry*
- ♣ *are the only contact path for Connecting a remote group, if the path is left a peripheral group will be completely disjointed with respect to the rest of the SN*
- ♣ ...





Different Recommendations

- **FOR YOU: Suggested objects/contents/events/groups since they**
 - ♣ are the less, most viewed, most played, most played in your group, ..
 - ♣ are similar to your highest voted/ranked objects
 - ♣ are similar to what you usually play, pay, print, upload, etc.
 - ➔ The most played/..voted in absolute
 - ➔ The most played/..voted in the last Month/Day, week, etc...
 - ➔ The most played/..voted in your area, country, group, etc..
 - ♣ are new for the SN
 - ♣ belongs to the preferred of your friends, ...
 - ♣ have been posted/commented by your friends, in your group, ...
 - ♣ have been recommended by a your friend

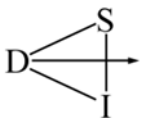
- **FOR BUSINESS: Suggested objects/.../groups since they**
 - ♣ are new for the SN, and thus are new for the market/business of the SN
 - ♣ are commercially proposed and have to be commercially promoted for the business of the SN
 - ♣ belong on the log tail of the content distribution/usage





Recommendations

		Recipient of the suggestions		
		User	Content (played by a user)	Group (leader or members)
Suggested elements	Users	Proposing to a user possible colleagues / friends	--no sense--	Proposing at a group responsible possible interested colleagues to be invited
	Contents	Proposing to a user possible interesting contents	Proposing at a play of a content similar content items	Proposing at a group members possible interesting content (not much different with respect to C-C combination)
	Groups	Proposing to a user possible interesting groups	Proposing at a play of a content possible interesting groups in which similar contents are discussed	--no sense--
	Ads	Proposing to a user possible interesting ads	Proposing at a play of a content the possible interesting ads	Proposing at a/all group member/s possible interesting ads





Similarity Distance

- The simplest solution for the recommendations/suggestion is to estimate the closest Users or Objects with respect to the reference User/Object
- The estimation of the closest entity between two entities described with multiple symbolic description is an instance of multidomain symbolic similarity distance among their descriptors.
- We can suppose for a while to have the possibility of estimating the similarity distance among descriptors.
- Some indexing tools, such as Lucene/Solr, may help in doing this with a query based on information of the reference user/object.





Complexity of Recommendation 1/2

- **Each day:**
 - ♣ N new users reach the SN
- The SN has 1 Million of users: $U=10^6$
- The SN has to suggest the possible friends to the new N users immediately:
 - ♣ Complexity is an $O(NU)$
 - ♣ $N*U$ distances should be estimated in real time/per day
 - ♣ If $N=10^6$ such as on YouTube
 - ♣ Thus: 10^{12} estimations of 10ms,
→ $10^{10}s$ → which are 317 years !!!





Complexity of Recommendation 2/2

- **Each day:**
 - ♣ M new UGC items are uploaded on the SN,
- The SN has
 - ♣ 1 Million of content: $C=10^6$
 - ♣ 1 Million of users: $U=10^6$
- The SN has to estimate the distance of that content with respect to all the other items/objects and users:
 - ♣ Complexity is an $O(MC+MU)$
 - ♣ $M \cdot C$ distances to be estimated in real time/per day
 - ♣ $M \cdot U$ distances to be estimated in real time/per day
 - ♣ If $M=1$ Million
 - ♣ Thus: 10^{12} estimations of 10ms, thus 10^{10} s, 2*317 years !!!





Technologies for Recommendations

○ Objective:

- ♣ To provide targeted elements on the basis of the elements descriptors

○ Technical solutions

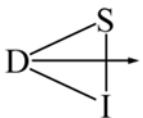
- ♣ **create distance matrices** and matching via direct distance or similarities estimations, very unfeasible for millions of elements would be too expensive
- ♣ **making queries on the basis of element profile** to get the most similar. For millions of elements with several aspects or dimensions in descriptors would be very complex
- ♣ **use some clustering to create group of elements**, also based on distances or similarities. If the groups are too many, the precisions can be low while the costs are contained.





Similarity Distances

		Recipient of the suggestions		
		User	Content (played by a user)	Group (leader or members)
Suggested element	Users	$D(U(s,d);U(s,d))$	--no sense--	$D(U(s,d);G(s,d))$
	Contents	$D(C(s);U(s,d))$	$D(C(s);C(s))$	$D(C(s);G(s,d))$
	Groups	$D(G(s,d);U(s,d))$	$D(G(s,d);C(s))$	--no sense--





General Distances Models

- Weighted Models:

$$D(U1; U2) = k_s \sum_{i=1}^{T_1} x_i Sd_i(U1, U2) + k_d \sum_{i=1}^{T_2} y_i Dd_i(U1, U2),$$

- Vector weighted models:

$$D(U1; U2) = \left\{ \begin{array}{l} K_s (x_1 Sd_1(U1, U2), x_2 Sd_2(U1, U2), \dots, x_n Sd_{T_s}(U1, U2)), \\ K_d (y_1 Dd_1(U1, U2), y_2 Dd_2(U1, U2), \dots, y_n D_{T_d}(U1, U2)) \end{array} \right\}$$

- The weights can be defined according to the SN goals.
- They can be determined by using multi-linear regressions techniques.





Visualizzazione di Suggerimenti e dist

Potential friends

[phistestasla](#)



26
ECUADOR, Orellana

[Add to your friends](#) [Details](#)

[shastu](#)



29
CHRISTMAS ISLAND

[Add to your friends](#) [Details](#)

[driphifras](#)



15
FRENCH POLYNESIA

[Add to your friends](#) [Details](#)

[kuslechi](#)



16
SRI LANKA, Kurunegala

[Add to your friends](#) [Details](#)

[hetheruno](#)



15
MALDIVES, Raa

[Add to your friends](#) [Details](#)

1 [2](#) [next >](#) [last >>](#)

phistestasla proximity details

languages:



favorites:



location:



interests:



friends:



activity:



age:

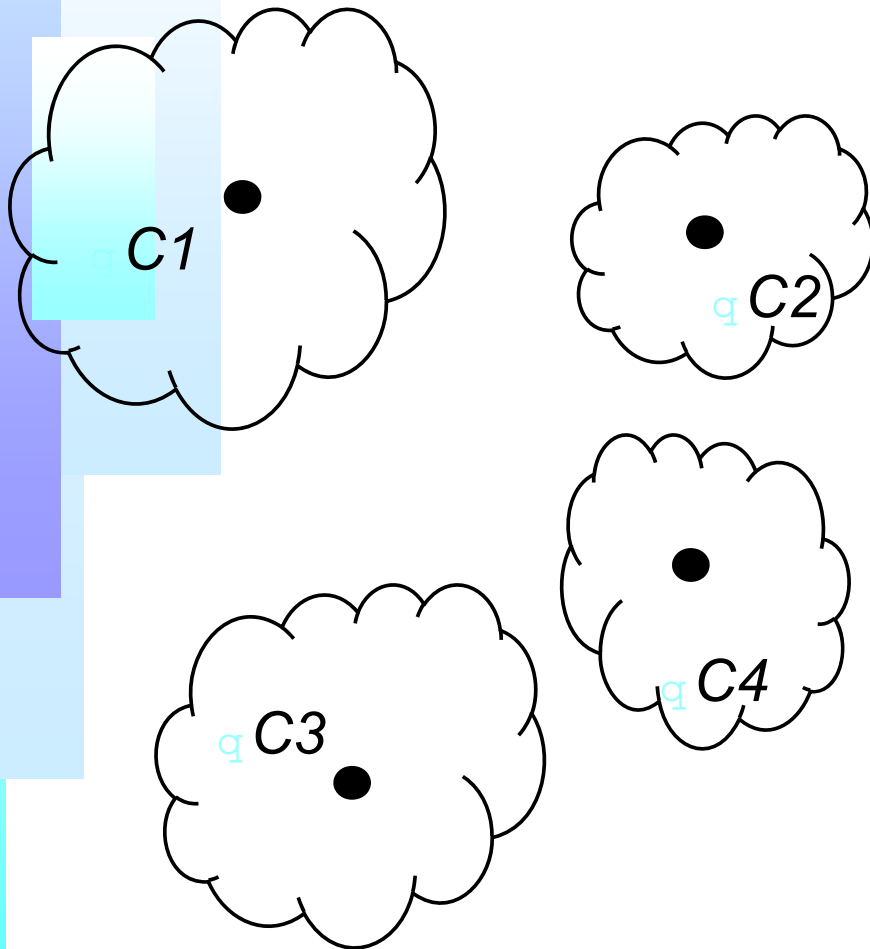


school_job:





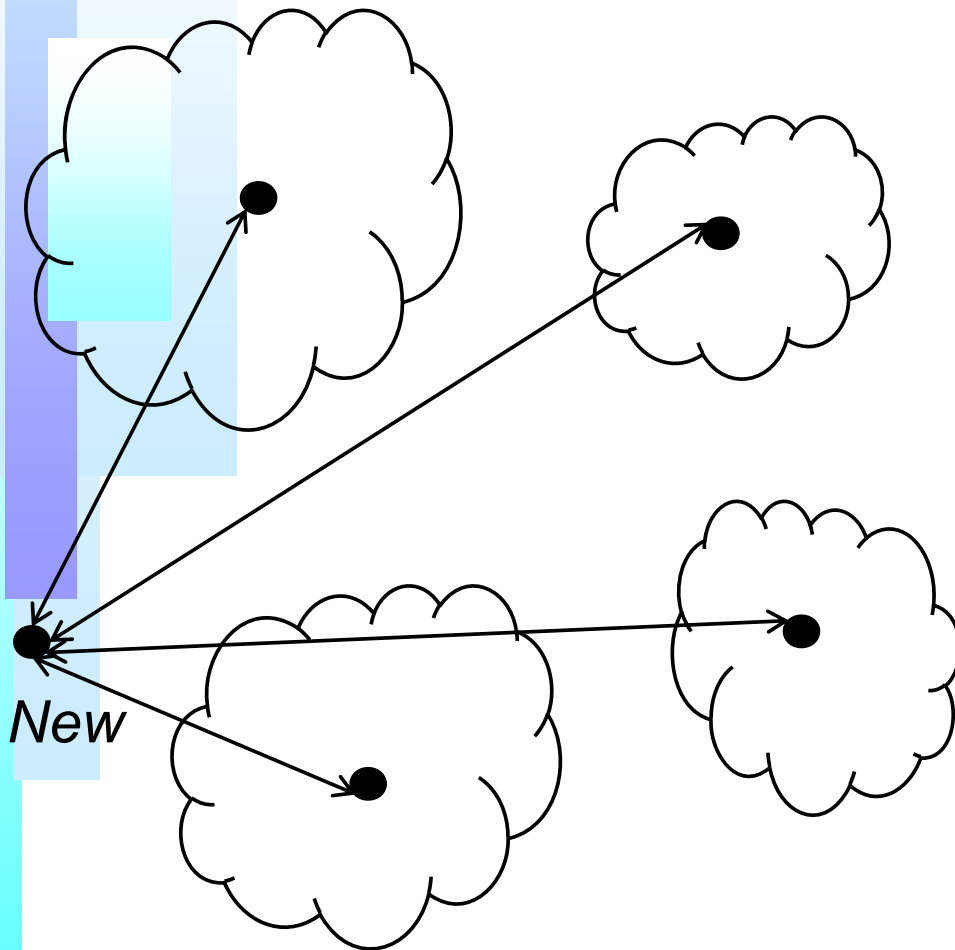
Clustering among descriptors



- *K-Means* clustering
 - ♣ Based on a multidimensional distance model among each other
 - ♣ Define the number of clusters
 - ♣ Estimation process to maximize the cohesion among clusters
- Some items can be spare
 - ♣ They are classified in any case
- Millions of content items, thousands of clusters, ...
- Periodic re-clustering taking into account all the content/objects/users



Clustering among descriptors



- Millions of content items,
- ONLY thousands of clusters
- At each New Object
 - ♣ Distance of the new object with respect to cluster Centers
 - ♣ Reduction of complexity
- Usable on recommendations:
 - ♣ UU, UO, OO, etc.



Clustering k-means

- Good performance in terms of scalability;
 - ♣ discovery of clusters with arbitrary shape;
 - ♣ ability to deal with noise and outliers;
 - ♣ insensitivity to order of input records;
 - ♣ support for high dimensionality.
- Complexity of an $O(NKI)$, where N is the number of elements, K the number of clusters and I the number of iterations.
- k-means has demonstrated the best performances when N is largely bigger than K and I (Everitt, Landau, Leese, 2001).





K-means problems

- **dependency on** the availability of numerical absolute distance estimations between two numerical values
- **Unfortunately elements descriptors are**
 - ♣ mainly symbolic and in some cases with multiple values,
 - ♣ coming from both the semantics and concepts they describe.





K-medoids clustering

- **K-medoids** adopts as a center of the cluster the element which has the minimal average (or the median) distance among the others involved in the cluster.
- This means that the complexity is grounded on $O(K(N-K)^2)$, that for $N \gg K$ is an $O(N^2)$.
 - ♣ N are the elements
 - ♣ K are the medoids/clusters
- initially the clusters centers are some selected elements (Xui & Wunsch, 2009).



Hierarchical Clustering

- Hierarchical clustering (Xui & Wunsch, 2009) are creating clusters on the basis of the distance among the single elements.
- The process starts by aggregating the closest elements to create smaller clusters of two elements and then aggregating these small clusters with other by following a sort a merging algorithm.
- The aggregation is based on the distance metrics
- Hierarchical algorithms may differ for the mathematical model used for the merging of subclusters: complete linkage, single linkage and averaged.





Cluster Based Recommendations

○ **Pros**

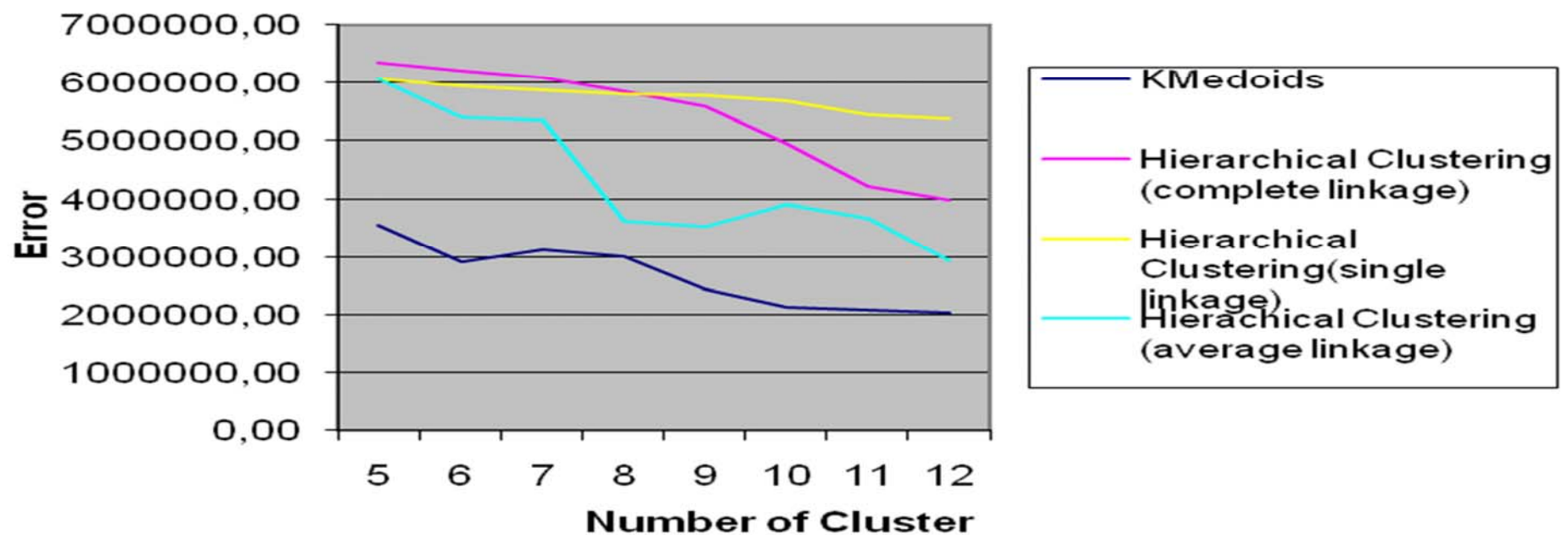
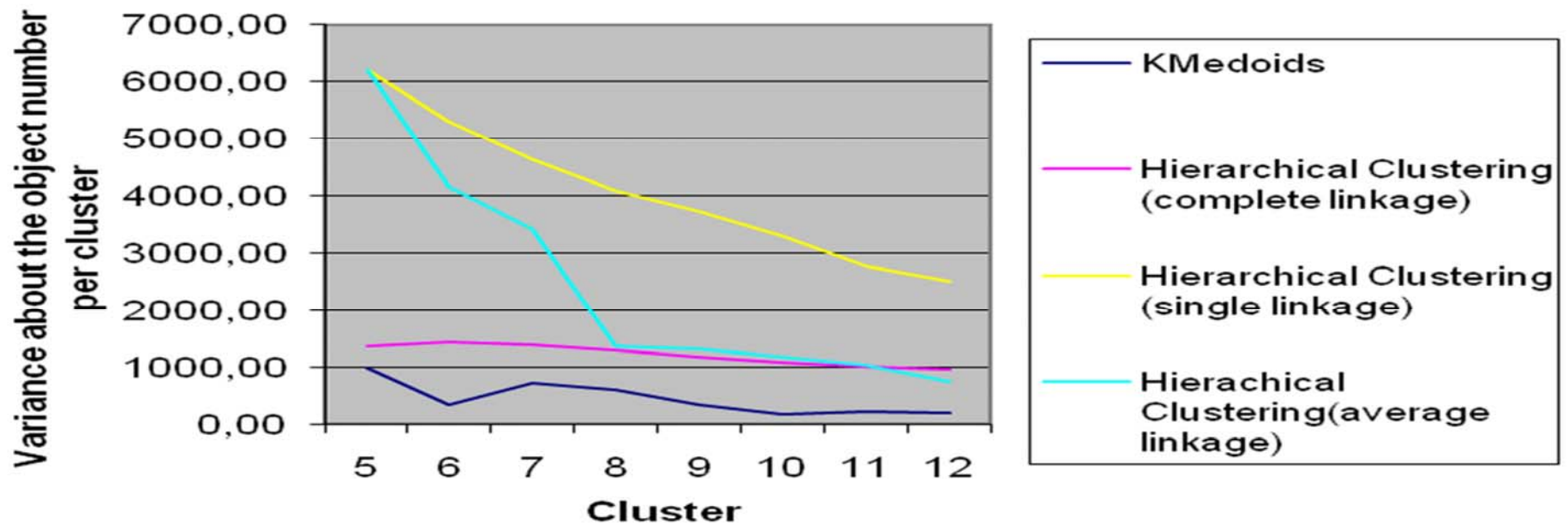
- ♣ Lower computational costs, clusters are numerically much less.
- ♣ At each new entry in users or content, the recommendation can be performed on the basis of the centers of clusters, or on cluster description
- ♣ For example in the case of before, with 1.000 clusters, the user recommendation:
 - ➔ $O(NK)$, $10^6 * 10^4 * 10ms \Rightarrow 3,8$ months,

○ **Cons**

- ♣ The proposed users/content/items are not those that are closest and neither the most similar.
- ♣ They are only some (a random selection) of items that are into the cluster that present the high similarity with respect to the item selected (user, content, etc.)



Comparison of Clustering algs





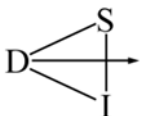
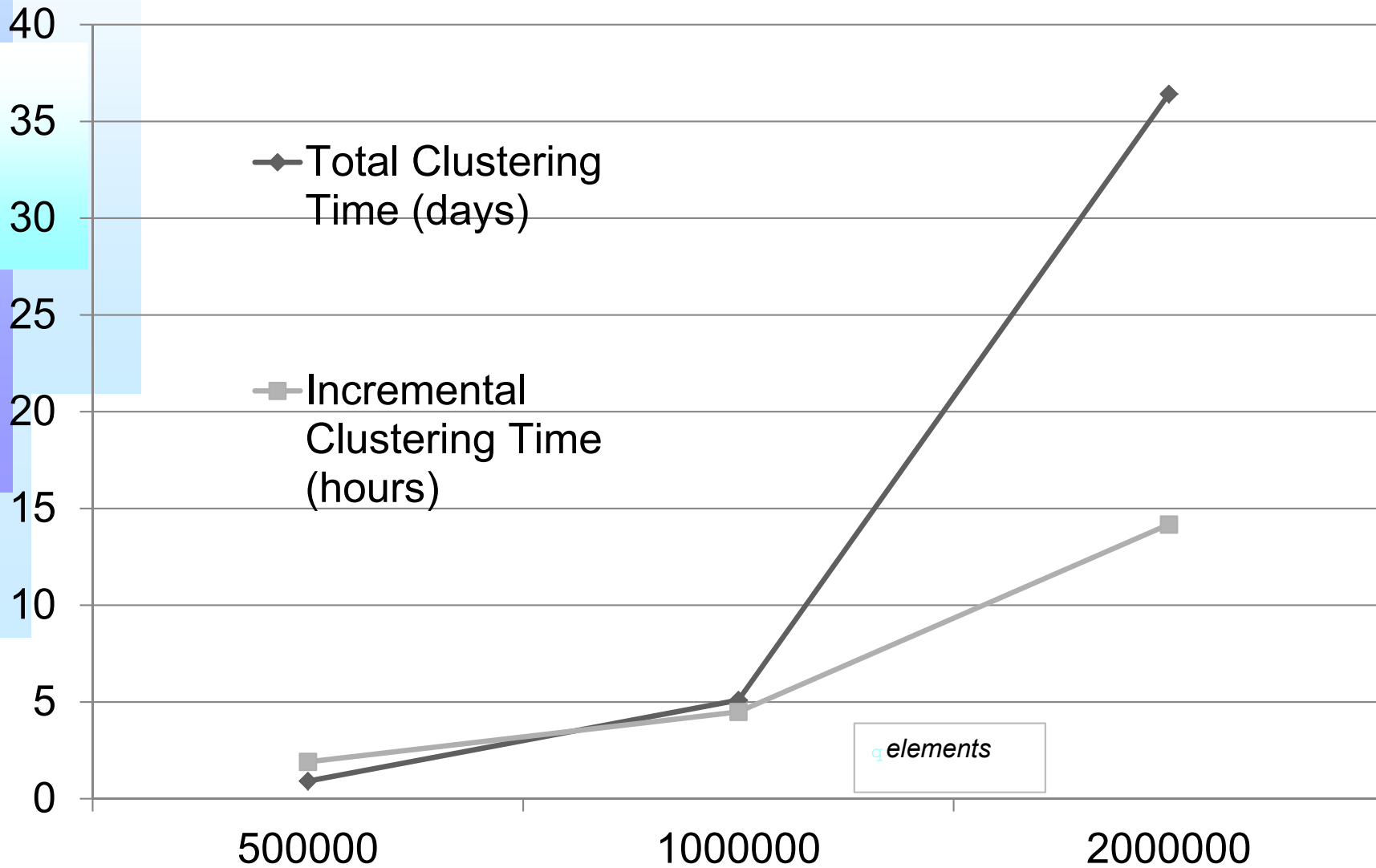
Consideration on Clustering algs

- **K-means** has good performance
 - ♣ it works only on absolute distance numbers
 - ♣ Not viable for complex domains
- **K-medoids** works on symbolic distances via taxonomies
 - ♣ Vector or scalar measures are viable
 - ♣ It is quite computationally heavy
 - ♣ Excellent in rejecting errors and on classification
- **Hierarchical clustering with average linkage**
 - ♣ Vector or scalar measures are viable
 - ♣ Very efficient in computation
 - ♣ Good in rejecting errors and on classification





Incremental Clustering





Raccomandazione Utente \Leftrightarrow Utente

- La raccomandazione sulla base della similarità tra utenti viene generata utilizzando due set di informazioni, le statiche e le dinamiche
 - ✓ Informazioni statiche: età, lingue parlate, tipi di oggetti di interesse...
 - ✓ Informazioni dinamiche: amici, preferiti, caratteristiche oggetti visti ...
- Calcolo similarità mediante confronto Utente \Leftrightarrow utente
 - ✓ Effettuato su dati eterogenei (lingue parlate, nazionalità...)
 - ✓ Dipendente dalle classificazioni tassonomiche degli oggetti visti

Informazione	Tipo	Metrica	Esempio
Località	Lista di elementi in formato ISO-3166	$v_{location}(A, B)$	IT
Lingua	Lista di elementi in formato ISO-369	$v_{language}(A, B)$	It-it
Età	Numero (Unix Timestamp)	$v_{age}(A, B)$	633420000
Gruppi di appartenenza	Lista di gruppi	$v_{groups}(A, B)$	[Digital Meets Culture, Italy, ...]
Connessioni comuni	Lista di utenti	$v_{friends}(A, B)$	[ivanb, ...]
Categorie di contenuti di interesse	Lista di categorie	$v_{interest}(A, B)$	«Gestione e organizzazione, ...»
Percentuali di visualizzazione delle categorie di contenuti	Array di numeri reali	$v_{taxonomy}(A, B)$	[1:0,4; 2:0,5; ...]





Obiettivi e percorso del progetto

- ❑ Rendere maggiormente dinamiche e accurate le raccomandazioni proposte agli utenti del social network ECLAP
- ❑ Studiare e implementare nuove politiche di raccomandazione utente-utente
- ❑ Verificare
 - ✓ l'efficacia delle tipologie di suggerimento
 - ✓ quali tipi di informazioni spingono gli utenti a stringere amicizia





La ristrutturazione





La struttura attuale:

- Migliorata la valutazione delle preferenze degli utenti
- Migliorato e riadattato l'algoritmo di calcolo per la similarità sulla base dei profili statici
- Introdotte altre tipologie di suggerimento diverse da quelle basate solo sulla similarità tra i profili degli utenti

□ Aumentata scalabilità considerando nel calcolo solo gli utenti attivi del sito

Informazione	Tipo	Metrica	Esempio
Percentuali di visualizzazione delle categorie di contenuti	Array di numeri reali	$v_{taxonomy}(A, B)$	[1:0,4; 2:0,5; ...]



Informazione	Tipo	Metrica	Esempio
 Viste	Stringa composta da termini della tassonomia	$proximity_{dynamic}(A, B)$	«Performing Art Danza Balletto, ...»
 Scaricati			«Performing Art Danza Balletto, ...»
 Aggiunti ai preferiti			«Gestione e organizzazione, ...»
 Promossi			«Performing Art Musica Blues, ...»





Modello di calcolo

$$proximity_{static}(A, B) = F(v_{language}(A, B), v_{location}(A, B), v_{friends}(A, B), v_{groups}(A, B), v_{age}(A, B), v_{taxonomy}(A, B))$$

- La vecchia procedura è stata privata delle metriche per il calcolo della prossimità dinamica.

Adesso si ha una funzione che stima la similarità esclusivamente sulla base delle informazioni statiche ed attribuisce ad ogni metrica un peso P_i , questa si va a combinare con la metrica per la prossimità dinamica per il calcolo della prossimità tra due utenti.

$$proximity(A, B) = proximity_{dynamic}(A, B) \times \gamma_d + proximity_{static}(A, B) \times \gamma_s$$

- È possibile assegnare pesi diversi alle diverse prossimità in modo da dare più rilevanza ai dati relativi alle preferenze o ai profili statici.

✓ Talvolta accade che i profili statici siano meno accurati perché gli utenti tendono a non riempirli. In questo caso la prossimità dinamica è usata come supporto.

- L'offerta dei suggerimenti è stata ampliata includendo la tipologia di raccomandazioni strategiche e la tipologia serendipity.

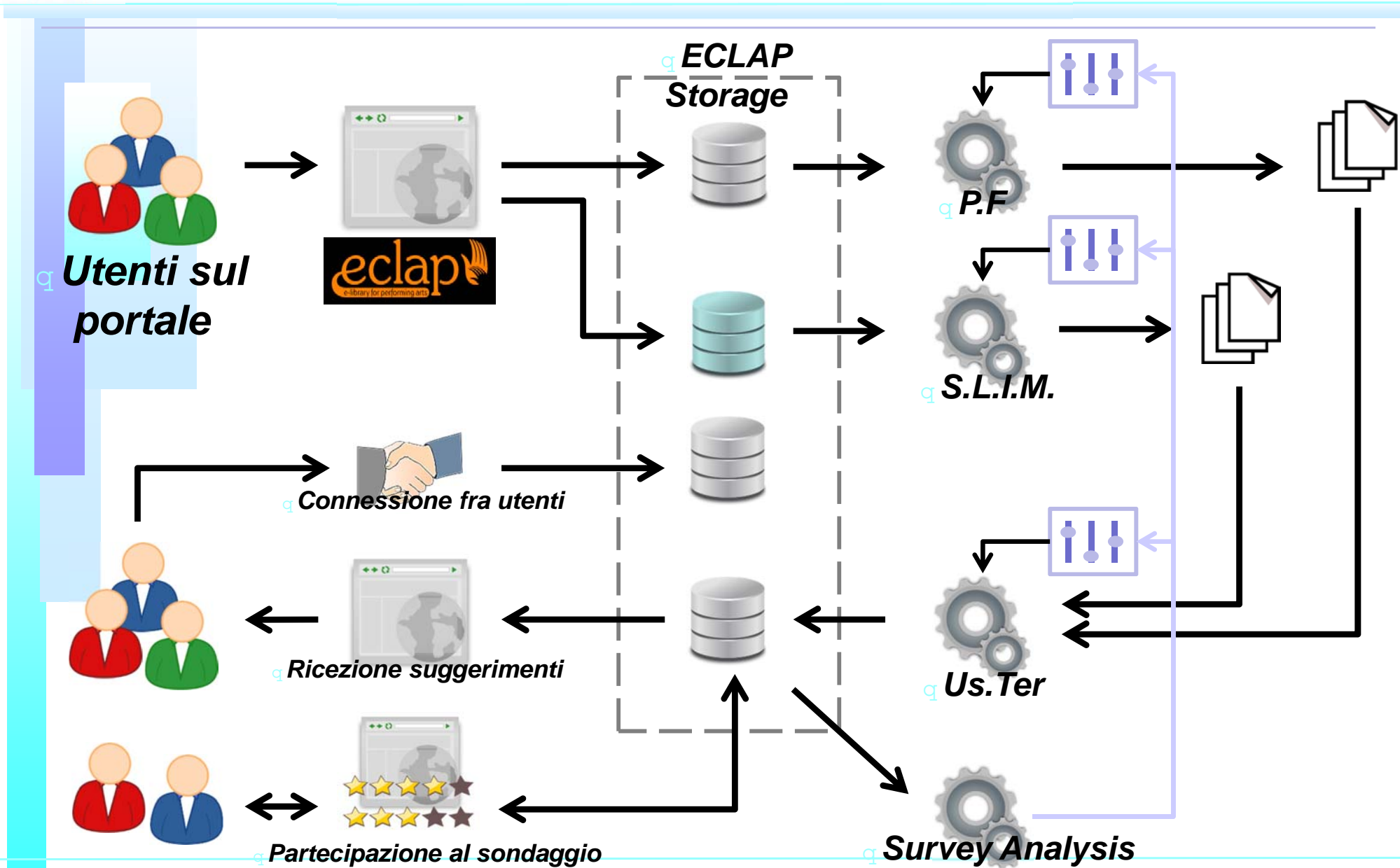
✓ **Raccomandazioni strategiche:** agli utenti che hanno pochi colleghi vengono suggeriti utenti con molti colleghi e viceversa. Questo per cercare di aiutare i nuovi utenti a socializzare e per "recuperare" gli utenti che non accedono al sito da molto tempo e hanno perso contatti con i nuovi utenti e/o interesse nei confronti del portale.

✓ **Raccomandazioni serendipity:** suggerendo un amico in maniera casuale (magari con interessi completamente diversi dai propri), l'utente, spinto dalla curiosità di nuovi contenuti, può creare contatti con il nuovo amico, ampliando la lista dei suoi interessi.





Architettura del sistema





La validazione

- I suggerimenti proposti nel sondaggio sono un sottoinsieme di quelli elaborati dal sistema e presentano una serie di informazioni relative agli utenti.
- ✓ Viene chiesto di votare quanto un suggerimento è ritenuto interessante.
- ✓ In questo modo non si valida la qualità delle metriche ma l'efficacia che hanno i suggerimenti sulla base delle informazioni che vengono fornite.

Attila Szabó



Attila Szabo, Maschile, 28
HUNGARY, Pest

Lingue parlate: English, French, Hungarian

Avete un profilo simile

Utente con molti contatti.

Aggiungi ai colleghi Dettagli



- *I parametri relativi alla generazione di una raccomandazione sono tutti tracciati e tramite i valori delle metriche e il voto lasciato dagli utenti si stima l'efficacia che ha mostrare un dettaglio relativo ad un utente o meno.*

✓ *Questo è possibile solo perché i dati sulla similarità sono stati calcolati tramite le procedure precedenti.*

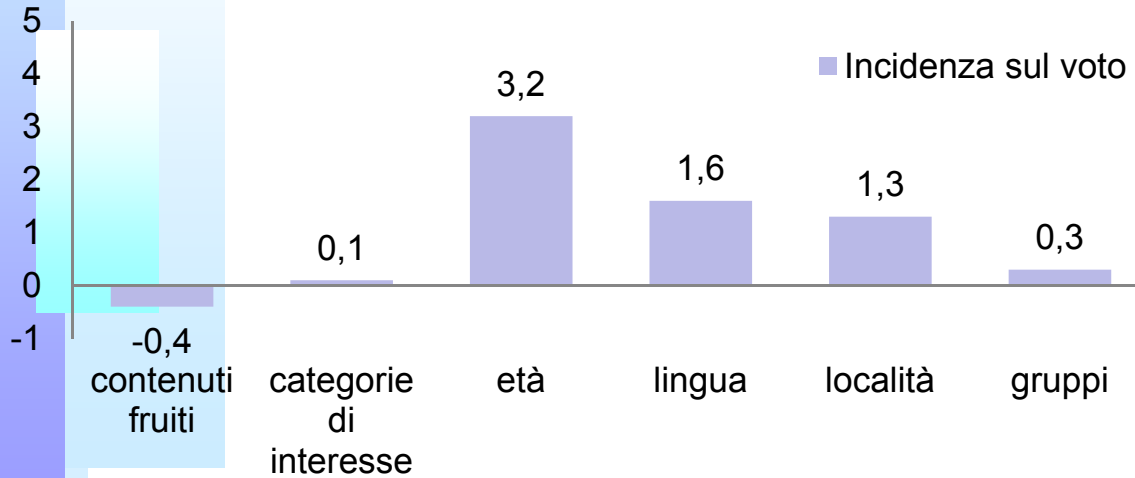
- *È possibile indagare quali sono le tipologie di raccomandazione che vengono gradite maggiormente.*
- *L'analisi dei dati viene effettuata tramite regressione multilineare per ottenere un modello nella*

forma

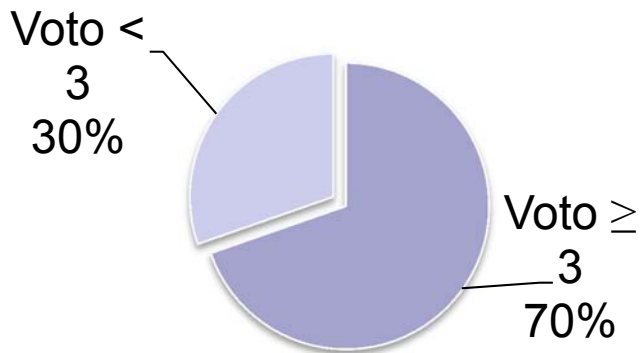
$$y(A, B) = v_{language}(A, B) \cdot P_{language} \cdot \gamma_{language} + v_{location}(A, B) \cdot P_{location} \cdot \gamma_{location} + v_{friends}(A, B) \cdot P_{friends} \cdot \gamma_{friends} + v_{groups}(A, B) \cdot P_{groups} \cdot \gamma_{groups} + v_{age}(A, B) \cdot P_{age} \cdot \gamma_{age} + v_{taxonomy}(A, B) \cdot P_{taxonomy} \cdot \gamma_{taxonomy} + v_{proximity_dynamic}(A, B) \cdot P_{proximity_dynamic} \cdot \gamma_{proximity_dynamic}$$



La validazione

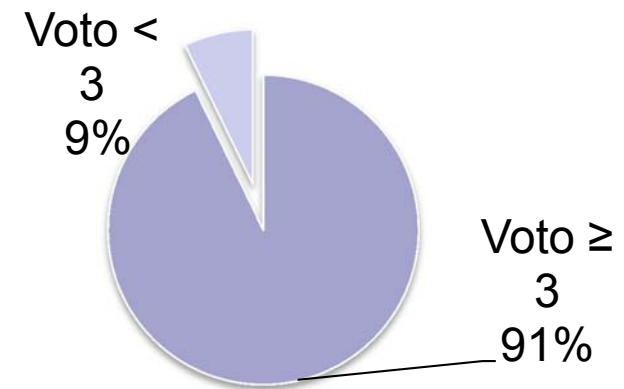


Statistica della regressione	
R multiplo	0,9624
F - Value	131,7795
Significatività di F	2,3389E-33



Tipologia Serendipity

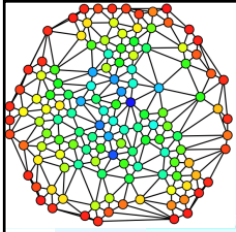
- ✓ Competenze
- ✓ Gruppi di appartenenza



Tipologia Strategici

- ✓ Popolarità

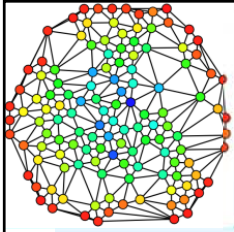




Struttura del Seminario

- Social Networking and knowledge
- Semantic and Social Networks
- Recommendations and Suggestions
- Natural Language Processing System
- Knowledge Representation System
- Reasoning System
- Sistema OSIM
- Anatomy of a Social Network





Natural Language Processing NLP (1)

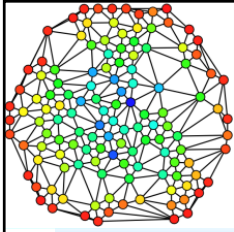
○ Scenario / Requisiti

- ♣ Dotare l'IA delle abilità linguistica proprie dell'essere umano
- ♣ Comprensione e generazione del testo
- ♣ Contesto multi-language: differenti regole e strutture a seconda della lingua

○ Applicazioni

- ♣ Generalizzazione delle query nei motori di ricerca
 - *"Chi si occupa di sistemi distribuiti nell'Università di Firenze ?"*
- ♣ Supporto automatizzato per Help-Desk
- ♣ Tutoring assistito (e-tutoring, e-teaching...)
- ♣ Summarization: creare compendi da una collezione eterogenea di documenti
- ♣ Machine translation: tradurre testi in lingue diverse





Ambiguità dei linguaggi naturali (1)

○ Scenario / Requisiti

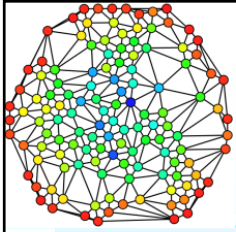
- ♣ I linguaggi sono purtroppo ambigui.
- ♣ Le ambiguità si possono avere a 4 livelli:
 - ✓ Ambiguità lessicale: «*attacco*» (verbo, sostantivo)
 - ✓ Ambiguità strutturale: «*leri ho visto l'uomo col telescopio*»
«*Una vecchia legge la regola*»
 - ✓ Ambiguità semantica: «*acuto*» (persona intelligente, tipo di suono)
 - ✓ Ambiguità pragmatica: «*se Buffon non gioca contro la Spagna, l'Italia perderà*»

L'intensione comunicativa viene recepita diversamente dagli interlocutori:

- interpretazione emotiva: *l'assenza di Buffon è psicologicamente fondamentale per i tifosi*
- Interpretazione referenziale: *l'Italia senza Buffon è più debole*

Ciò rende il processo di elaborazione del linguaggio naturale molto complicato





Fasi dell'elaborazione in Linguaggio Naturale (1)

Morphological Analysis: le parole vengono analizzate (distinzione dei morfemi che le compongono) ed i simboli (punteggiature) vengono separati dalle parole .

Syntactic Analysis: Le sequenze di parole sono trasformate in strutture che mostrano come le parole sono in relazione l'una con l'altra.

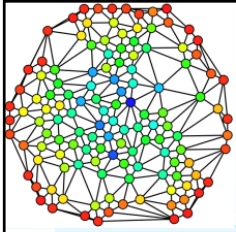
Semantic Analysis: Viene assegnato un significato alle strutture sintattiche trovate.

Discourse integration: il significato di una frase spesso dipende dalla frase che la precede e può influenzare quello della frase che la segue.

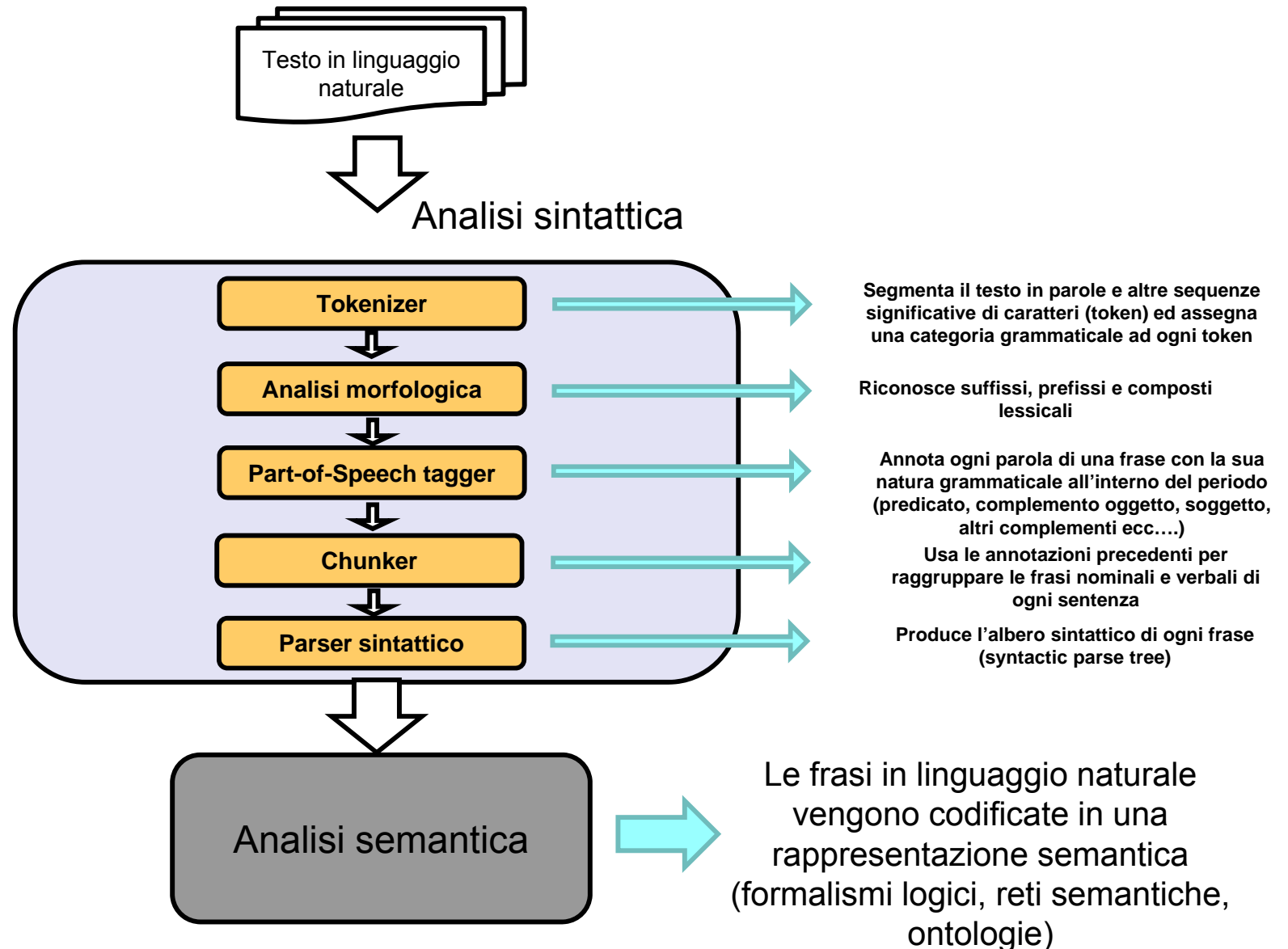
Pragmatic Analysis: la frase è reinterpretata per determinare il significato specifico della frase stessa.

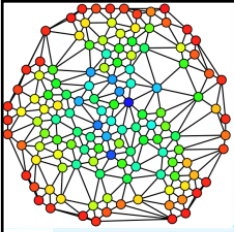
“la porta è aperta” necessita di conoscere quale è stata l'intenzione dell'interlocutore:

- Si è creata una corrente d'aria...
- Invito ad entrare liberamente...
- Richiesta affinché qualcuno chiuda la porta...



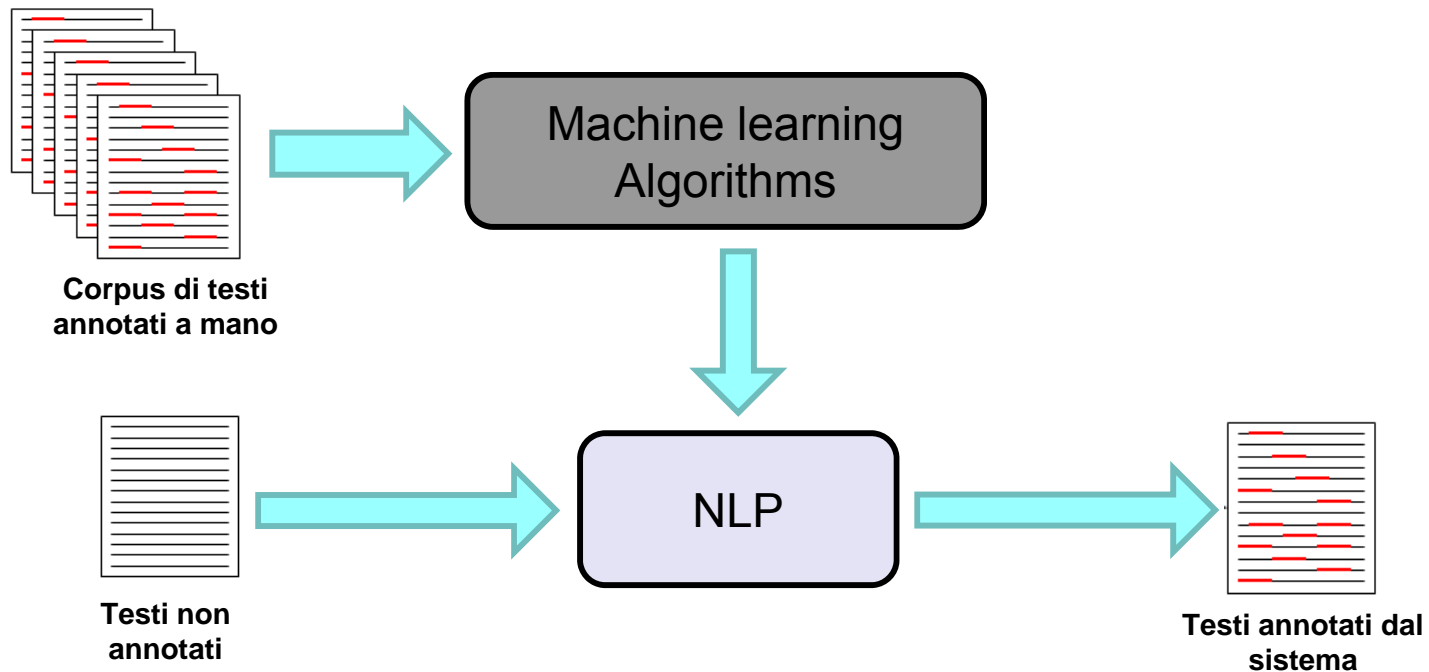
Fasi dell'elaborazione in Linguaggio Naturale (2)

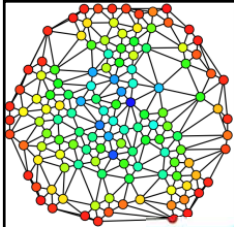




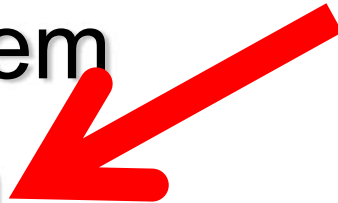
Machine Learning

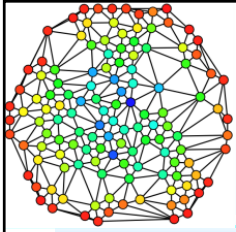
I sistemi di NLP usano principalmente algoritmi di machine learning addestrati su grandi corpus di testi annotati a mano





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Forme di conoscenza

Implicita

Posseduta dalle persone

Comunicabile in forma verbale o scritta

Tacita

Presente nelle menti degli individui

Difficile da comunicare verbalmente (*importante è l'esperienza sensoriale*)

Esplicita

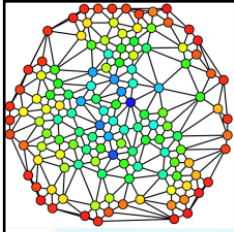
Strutturata (data base, XML+DTD, XML+Shema, ecc.)

Semi-strutturata (XML, ecc.)

Debolmente strutturata (HTML, testi tabulati, ecc.)

Non strutturata (documenti in linguaggio naturale)





Acquisizione e Conservazione

Fonti di Conoscenza

Esperienza diretta

Interazione del soggetto con il suo ambiente

Ragionamento

Deduttivo/inferenza (conclusioni premesse)

Abduttivo (possibili cause effetti osservati)

Induttivo (regole generali fatti specifici)

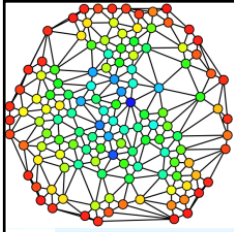
Comunicazione

Uso di sistemi di segni (*in particolare il linguaggio naturale*) per trasferire informazioni da un soggetto a un altro.

Funzione della memoria

Capacità di Conservare nel tempo elementi di conoscenza e soprattutto di reperirli con efficienza quando occorre farne uso.





La Logica simbolica

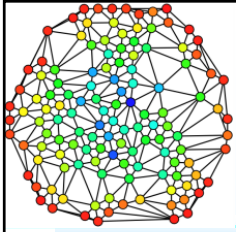
Problema

Rappresentare la conoscenza in formato **machine-readable** (*un computer può “leggere” tale conoscenza rappresentata e utilizzarla per eseguire compiti d’interesse applicativo*)

Soluzione

Rappresentazione dichiarativa tramite **logica simbolica** (*formale*), ed in particolare la **logica dei predicati del primo ordine** (*first order logic, FOL*)





First Order Logic

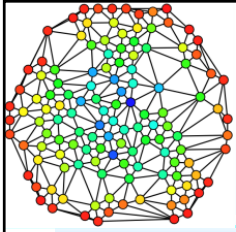
In **FOL** tutte le rappresentazioni riguardino un **insieme** non vuoto di **individui** detto **universo** (*o dominio*).

Di questi **individui** possiamo rappresentare **proprietà** oppure **relazioni** che li leghino fra loro. Un **fatto** è dato dal sussistere:

di una **proprietà** di un determinato individuo (*es. “Barbara è bionda”, “Luigi ha 21 anni”*)

oppure di una **relazione** fra più individui (*es. “Alberto è più alto di Barbara”, “Alberto ha dato il suo cellulare a Barbara”, ecc.*)





Linguaggi di rappresentazione

Un linguaggio per la rappresentazione di conoscenze è un **linguaggio formale**, con sintassi testuale o grafica, le cui espressioni sono utilizzate per rappresentare elementi di conoscenza.

Esempio: rappresentare il significato del termine “madre” come “donna con almeno un figlio”.

Linguaggio naturale:

$(x \text{ è una madre}) \text{ se e solo se } (x \text{ è una donna ed esiste almeno un } y \text{ tale che } x \text{ è genitore di } y)$

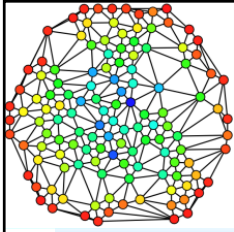
First Order Logic (FOL):

$\forall x (\text{MADRE}(x) \leftrightarrow \text{DONNA}(x) \wedge \exists y \text{GenDi}(x,y))$

Logic Programming (LP):

$\text{madre}(X) \text{ :- donna}(X), \text{genDi}(X,Y).$





La deduzione

Nel contesto in cui ci stiamo muovendo, per “**ragionamento**” s’intende il ragionamento **deduttivo** (*o deduzione*)

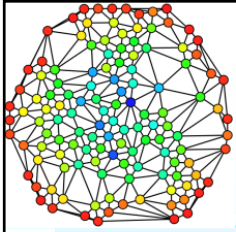
Una **deduzione** è un processo che fa passare da alcune espressioni (dette premesse o ipotesi) a un’espressione (detta conclusione o tesi), in modo tale da conservare l’eventuale verità delle premesse: in altre parole, se le premesse sono vere, lo sarà anche la conclusione.

Ad esempio, dati come premesse

1. la **definizione** di “madre”
2. il fatto che *laura* è una **DONNA**
3. il fatto che *laura* è **GenitoreDi** di *franco*

si può dedurre come conclusione che

laura è una **MADRE**



Le logiche descrittive

I sistemi di questo tipo hanno preso il nome di **logiche descrittive** (*description logic, DL*). Le DL utilizzano una sintassi semplificata rispetto a FOL.

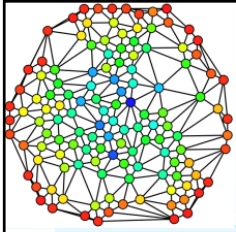
Ad esempio, le tre premesse

1. $\forall x (MADRE(x) \leftrightarrow DONNA(x) \wedge \exists y GenDi(x,y))$
2. $DONNA(laura)$
3. $GenDi(laura, franco)$

in logica descrittiva verrebbero rappresentate come

1. $MADRE \equiv DONNA \sqcap \exists GenDi$
2. $DONNA(laura)$
3. $GenDi(laura, franco)$

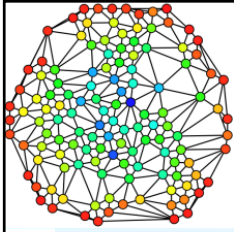




Risorse

- q *Tutte le cose descritte con espressioni RDF*
- q *vengono dette **Risorse**.*
- q *Una risorsa può essere:*
 - q *un'intera pagina Web (<http://www.pippo.it/pluto.html>)*
 - q *una parte di una pagina Web*
 - q *un'intera collezione di pagine (un sito Web)*
 - q *un oggetto non direttamente accessibile via Web (un*
 - q *libro stampato)*
- q *Le risorse sono sempre definite da URI*
- q *Qualsiasi cosa può avere associato un URI*

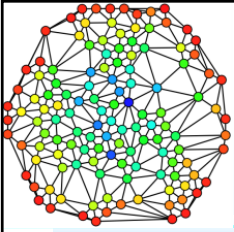




OSIM Ontology

- [Http://openmind.disir.org](http://openmind.disir.org)
- **L'ontologia di dominio di OSIM è composta da 4 ontologie diverse**
 - ♣ *Academy Life Ontology (Unifi)* modella l'ateneo fiorentino in termini di docenti, corsi, strutture di affiliazione, facoltà, gruppi di ricerca, laboratori, ecc...
 - ♣ *Friend of a Friend (FOAF)* modella le persone in termini di professori, ricercatori, phd e relazioni tipo nome, indirizzo, e-mail, settore scientifico, relazioni di conoscenza, di co-autore di pubblicazioni, ecc
 - ♣ *Simple Knowledge Organization System (SKOS)* che modella ed organizza semanticamente le competenze delle persone e dei corsi.
 - ♣ *Time Ontology (TIME)* che modella i concetti di intervalli ed istanti temporali per quantificare temporalmente i fatti asseriti nell'ontologia.

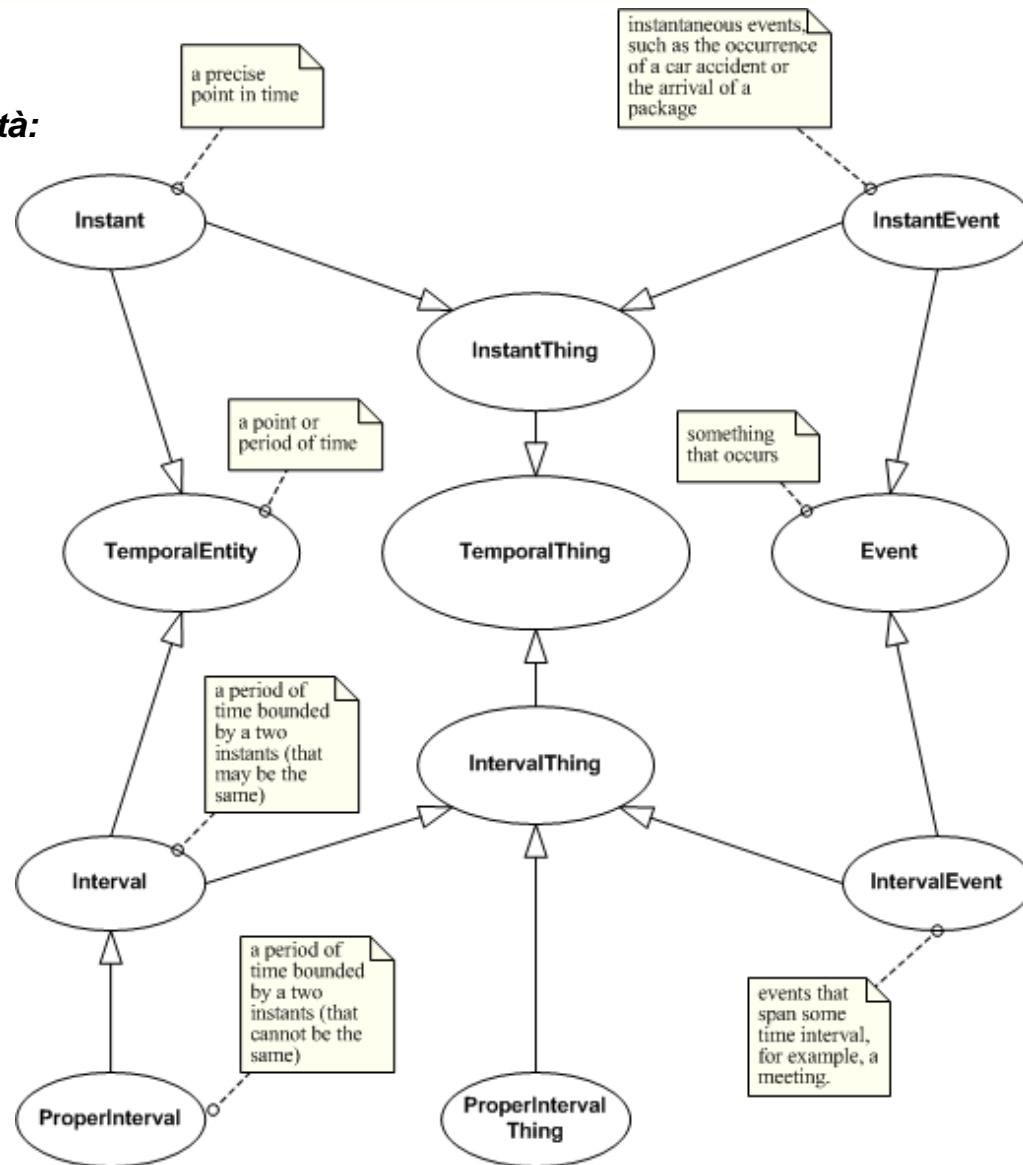
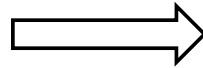


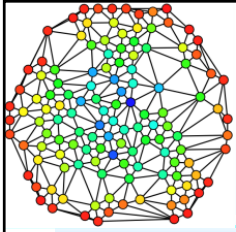


Time Ontology

Si specifica il valore di un istante ad una certa granularità:

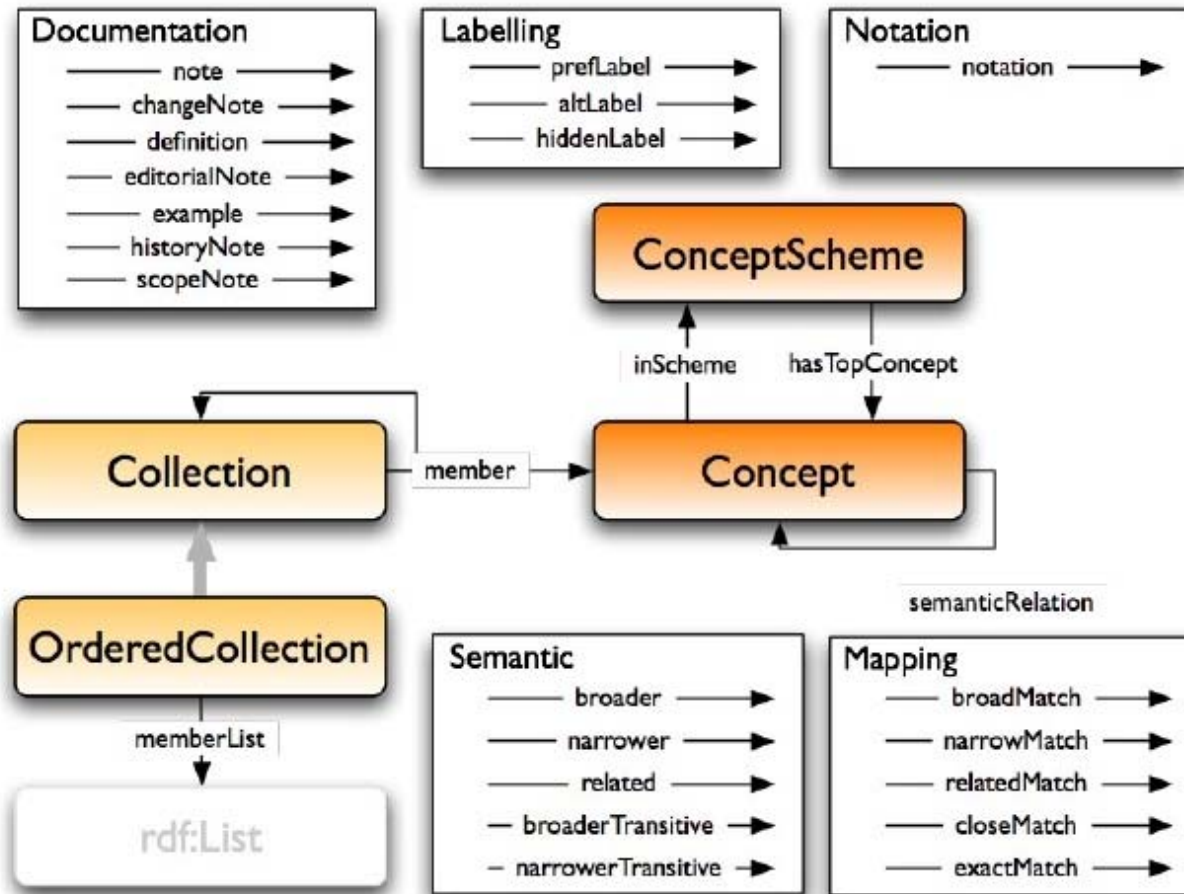
- Ora
- Giorno
- Mese
- Anno
- ...





Simple Knowledge Organization System (SKOS)

SKOS Model

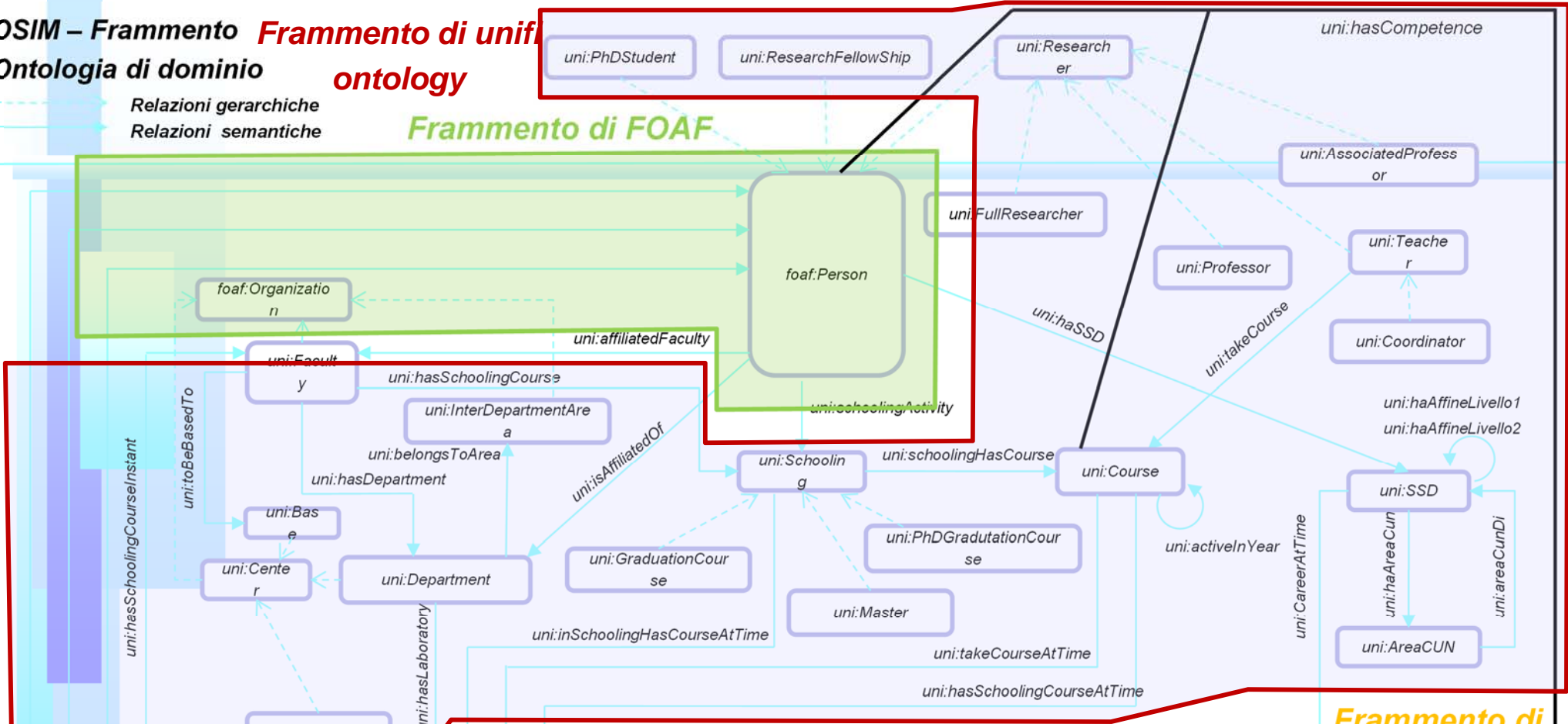


OSIM – Frammento Ontologia di dominio **Frammento di unificazione**

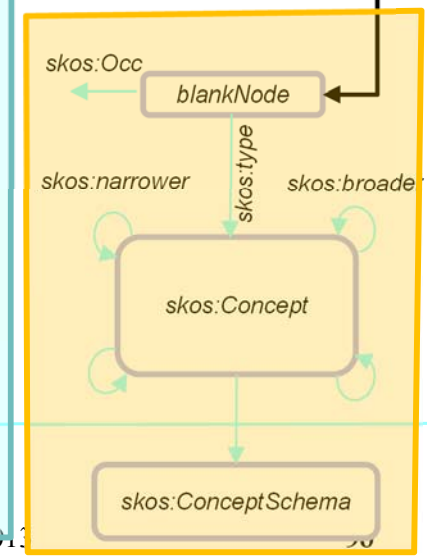
Relazioni gerarchiche
Relazioni semantiche

ontology

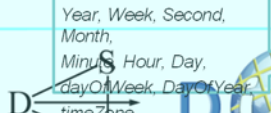
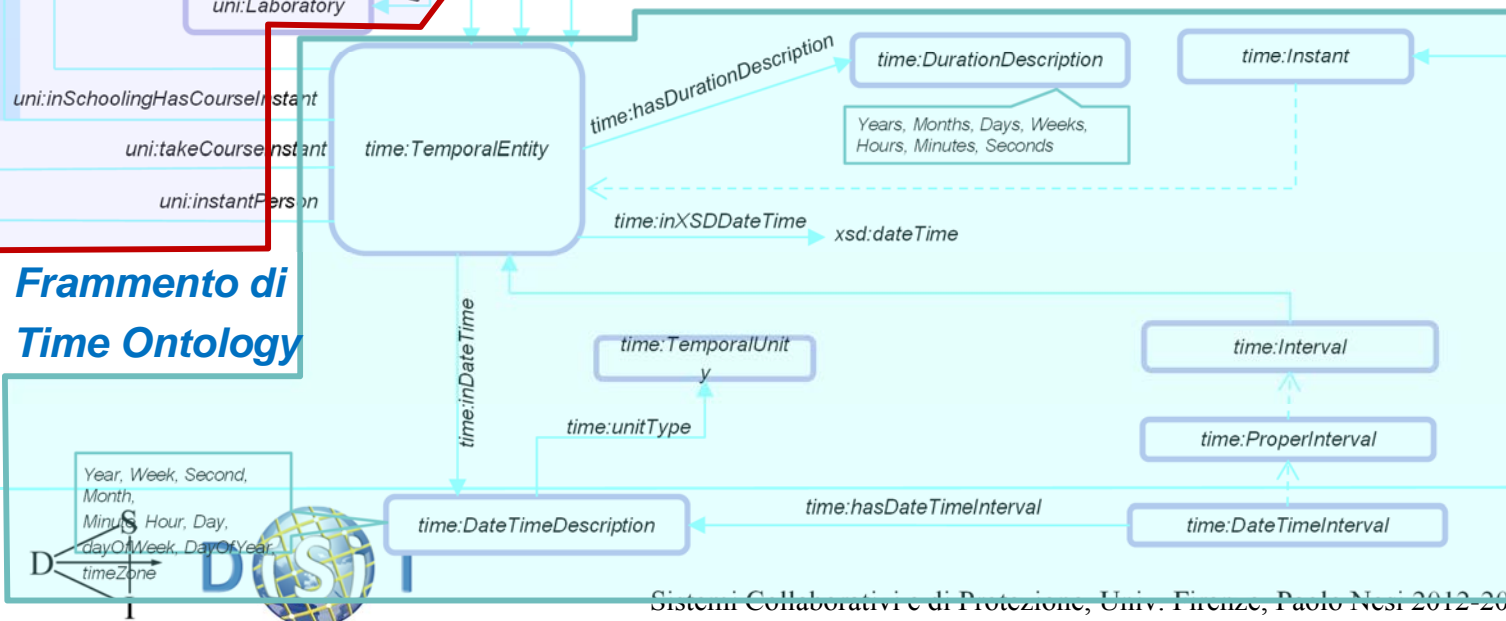
Frammento di FOAF



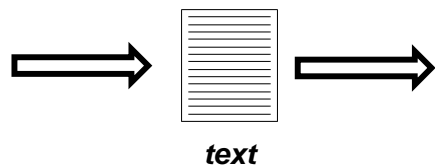
Frammento di SKOS



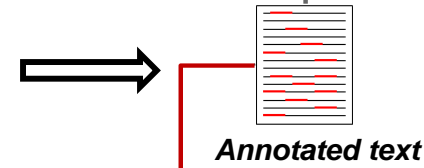
Frammento di Time Ontology



Crawler



NLP System



Semantic Repository

Concepts

- FullProfessor
- Department
- Course
- ConceptSkill
- Instant
- Interval

... **Relazioni tra entità nominali**

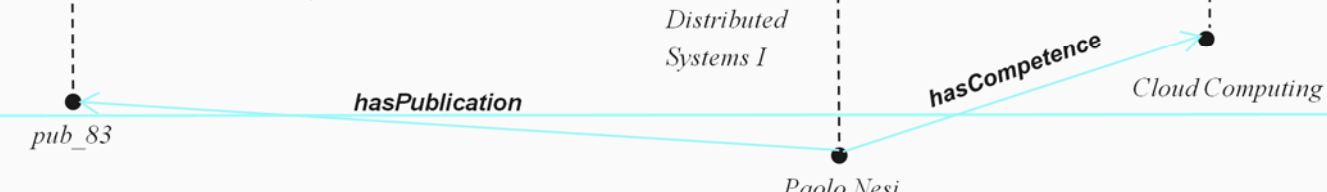
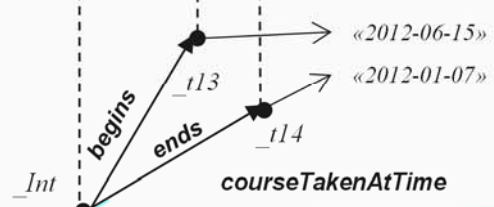
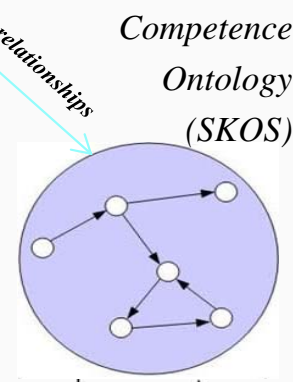
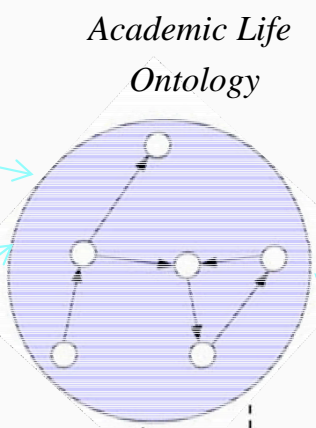
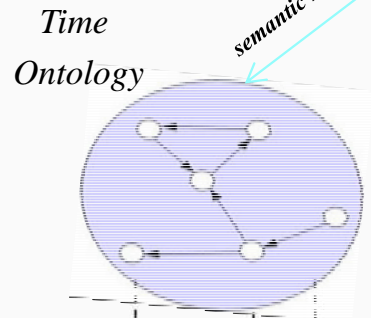
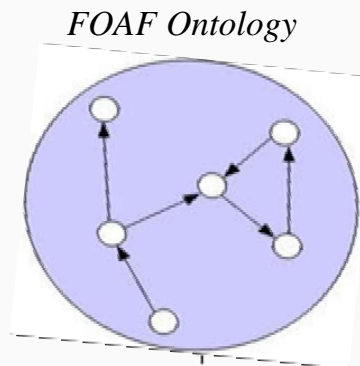
Roles

- Begins
- Ends
- courseTakenAtTime
- Subject
- hasCompetence
- hasPublication

Entità nominali annotate

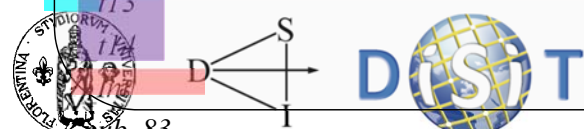
Individuals

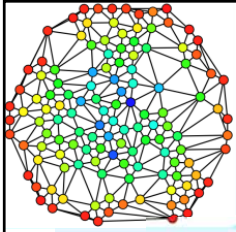
- Paolo Nesi
- Distributed Systems I
- Security Systems
- Cloud Computing




TBoxOSIM

ABoxOSIM

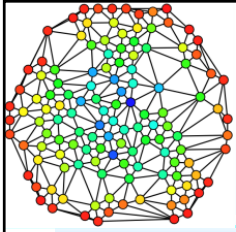




Struttura del Seminario

- Social Networking and knowledge
- Semantic and Social Networks
- Recommendations and Suggestions
- Natural Language Processing System
- Knowledge Representation System
- Reasoning System 
- Sistema OSIM
- Anatomy of a Social Network





Tipi di ragionamento

q **Compito di ragionamento (reasoning task)**

- q *è caratterizzato dal tipo di enunciati che si desidera dedurre da una base di conoscenze*

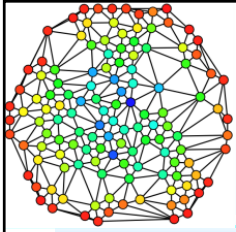
q **Procedura di ragionamento**

- q *l'algoritmo che consente la deduzione degli enunciati*

q **Servizio di ragionamento**

- q *un servizio effettivamente implementato da uno strumento e messo a disposizione delle applicazioni*
- q *che accedono alla base di conoscenze.*





Interrogare la conoscenza (3)

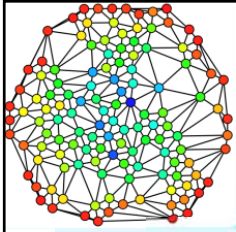
q **Built-in SPARQL**

- **Logical:** `!`, `&&`, `||`
- **Math:** `+`, `-`, `*`, `/`
- **Comparison:** `=`, `!=`, `>`, `<`, ...
- **SPARQL tests:** `isURI`, `isBlank`, `isLiteral`, `bound`
- **SPARQL accessors:** `str`, `lang`, `datatype`
- **Other:** `sameTerm`, `langMatches`, `regex`


q **E' possibile effettuare l'unione di più graph paths**

q **tramite la clausola UNION**

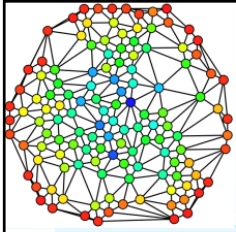




Struttura del Seminario


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OSIM: Conoscenza

<http://openmind.disit.org>

OSIM Open Space Innovative Mind **BETA** TESTING *Università degli Studi di Firenze* 

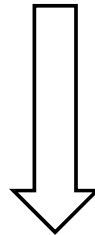
Home Documentation Search Managing Knowledge Browsing People & Publications Contact DISIT

Question Answer [Query Wizard](#)

sistemi collaborativi e di protezione

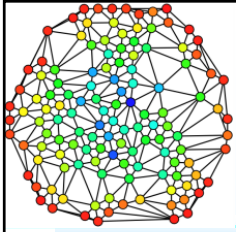
Results Displayed / Found: 1 - 3 / 3 in 368641 millisec

sistemi cooperativi e di protezione (course)	score: 3.14 Freqs: 1	Paolo Nesi (full professor)	Freqs: 0 score: 2.53
		systems and security solutions (skill)	score: 2.24 Freqs: 1



q **“navighiamo” la conoscenza relativa al corso**





OSIM: Conoscenza relativa alla competenza «programming»

programmazione (skill)

Competenze collegate

Concetti broader

[informatica](#)

Concetti narrower

[esperienza nella programmazione](#)

[espressioni regolari](#)

[fondamenti di programmazione](#)

[funzioni](#)

[lingua](#)

[linguaggio di programmazione](#)

[linguaggio macchina](#)

[livello di programmazione](#)

[modello di programmazione](#)

Concetti related

Nessun concetto presente

Persone

Persone con questa competenza

[Michele Boreale](#) (4/170)

[Michele Loreti](#) (1/170)

[Paola Cappanera](#) (1/170)

[Paolo Frasconi](#) (9/170)

[Paolo Nesi](#) (12/170)

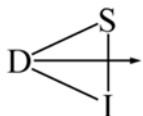
[Pierluigi Crescenzi](#) (7/170)

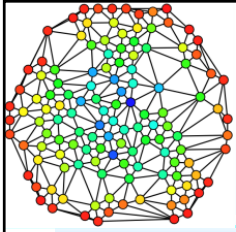
[Pietro Pala](#) (1/170)

[Rosario Pugliese](#) (9/170)

[Simone Marinai](#) (2/170)

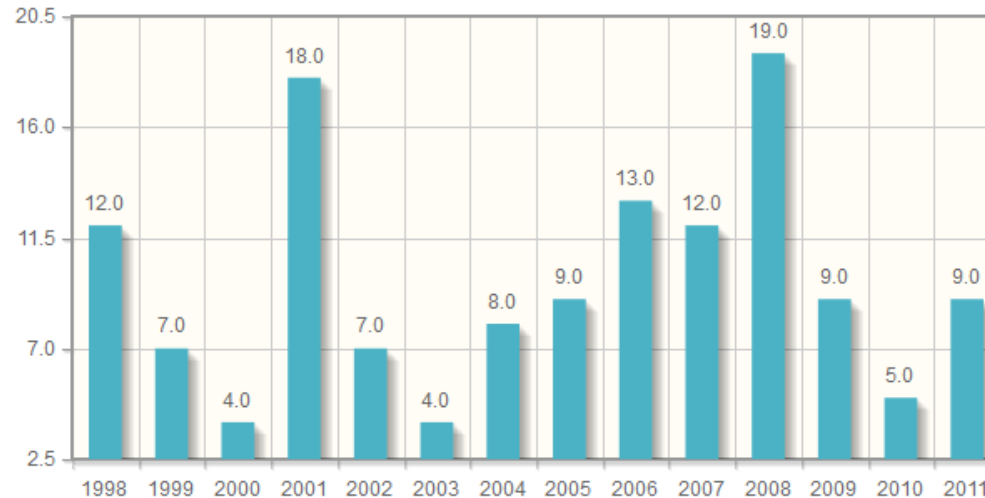
[Stefano Berretti](#) (13/170)





OSIM: Conoscenza relativa alle pubblicazioni e i coautori di «Paolo Nesi»

Totale pubblicazioni: 167



Anno:

[1998](#) (12) [1999](#) (7) [2000](#) (4) [2001](#) (18) [2002](#) (7) [2003](#) (4) [2004](#) (8) [2005](#) (9) [2006](#) (13) [2007](#) (12) [2008](#) (19) [2009](#) (9) [2010](#) (5) [2011](#) (9)

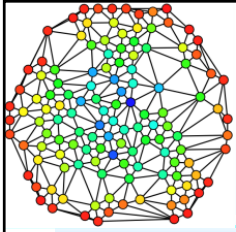
[Elenco di tutte le pubblicazioni](#) (167)

Autori che hanno lavorato con questa persona:

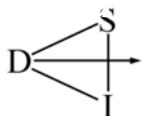
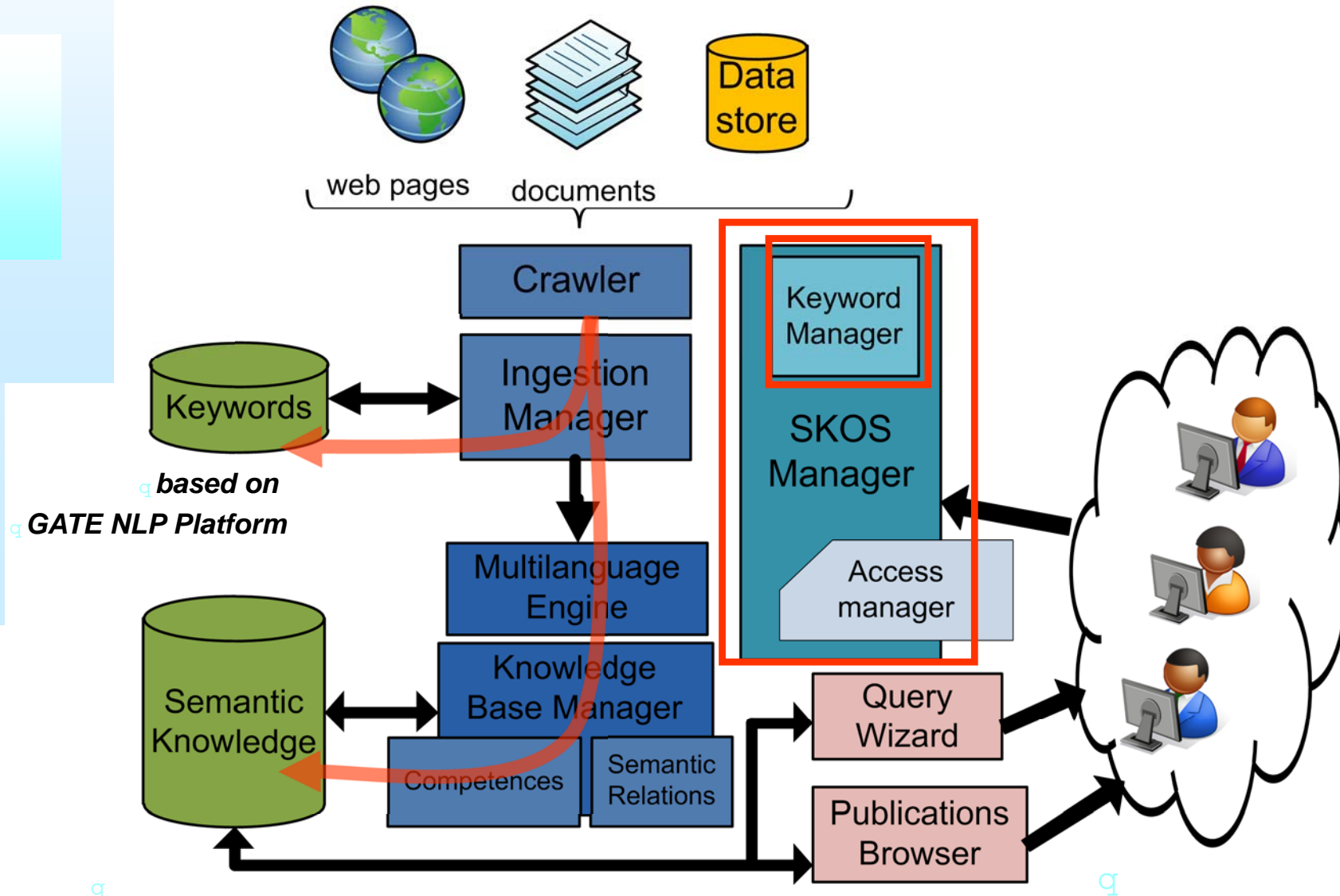
- [ARGENTI FABRIZIO](#) (Registrato CINECA)
- [BALDASSARRE ANTONIO](#) (Registrato CINECA)
- [BELLINI PIERFRANCESCO](#) (Registrato CINECA)
- [BRUNO IVAN](#) (Registrato CINECA)
- [BUCCI GIACOMO](#) (Registrato CINECA)
- [CENNI D.](#) (Non Registrato CINECA)
- [CENNI DANIELE](#) (Registrato CINECA)
- [DE LUCIA M.](#) (Non Registrato CINECA)
- [DE LUCIA MAURIZIO](#) (Registrato CINECA)
- [EVANGELISTI ATTILIO](#) (Registrato CINECA)

- [Visualizza le pubblicazioni in comune](#) (2)
- [Visualizza le pubblicazioni in comune](#) (1)
- [Visualizza le pubblicazioni in comune](#) (41)
- [Visualizza le pubblicazioni in comune](#) (22)
- [Visualizza le pubblicazioni in comune](#) (5)
- [Visualizza le pubblicazioni in comune](#) (3)
- [Visualizza le pubblicazioni in comune](#) (5)
- [Visualizza le pubblicazioni in comune](#) (1)
- [Visualizza le pubblicazioni in comune](#) (1)
- [Visualizza le pubblicazioni in comune](#) (1)



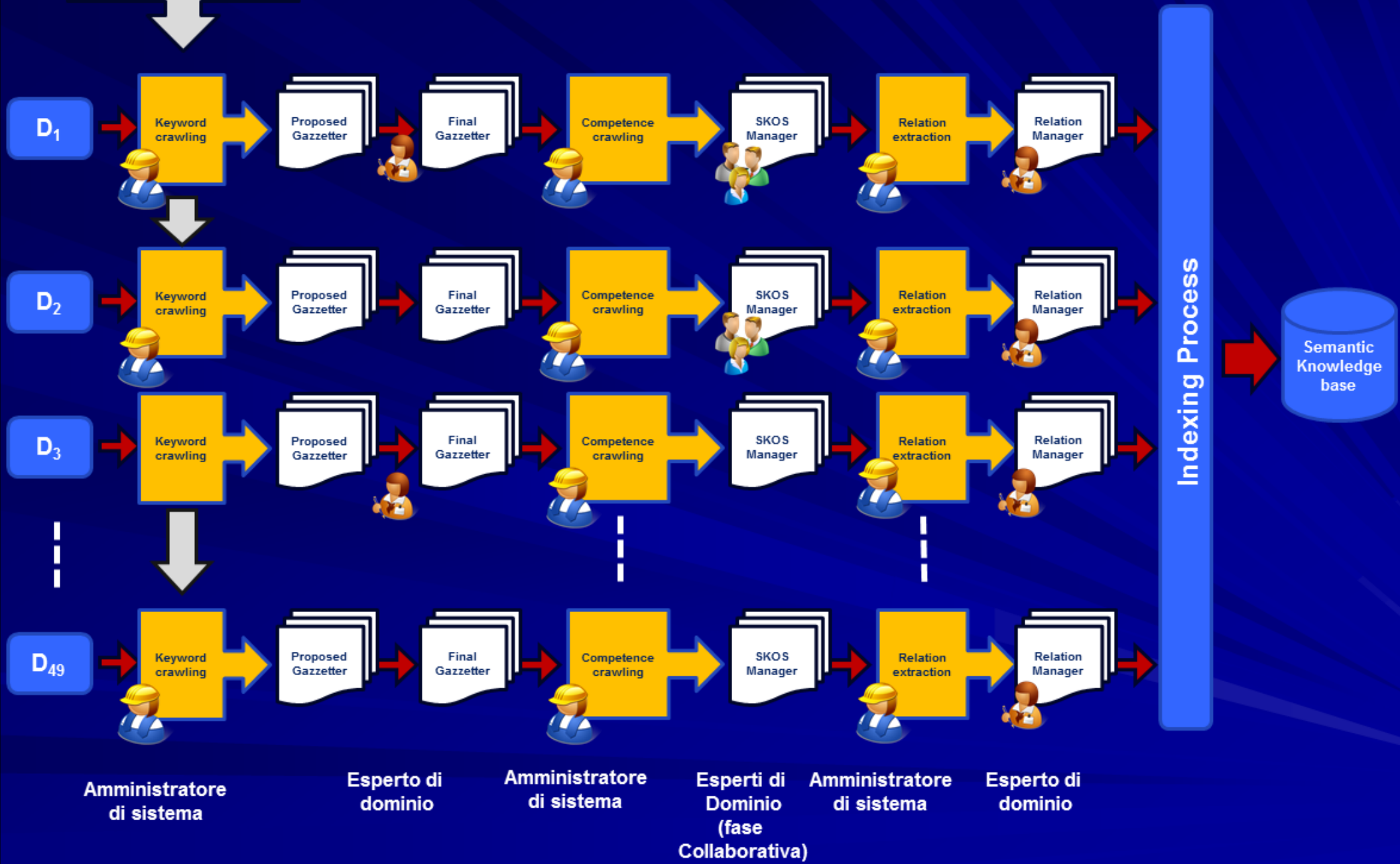


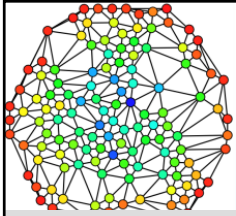
OSIM: Architettura



Knowledge Base Creation Process

Web pages, documents, publications, etc...





Keyword management

Welcome root [Logout](#)

[OSIM Managing Knowledge HOME](#)

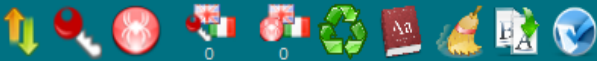
dipartimento di matematica per le decisioni - crawler is running

english

ONTOLOGY MANAGER

KEYS SELECTION

RELATIONS MANAGER

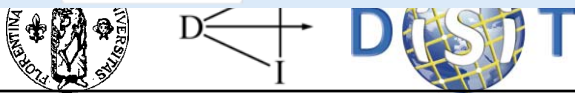


all

20/113 (#2258)

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9390	algebra	algebra	9	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	en	0
1201	complementary	complementare	9	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	en	0
9139	changes	variazioni	9	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	en	0
9143	horizon	orizzonte	9	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	en	0
7611	decomposition	decomposizione	9	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	en	0
9148	infinite	infiniti	9	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	en	0
7365	laboratory	laboratorio	9	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	en	0
8646	angles	angoli	9	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	en	0
8397	embrechts	embrechts	9	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	en	0
9427	bond	obbligazione	9	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	en	0
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9689	edition	edizione	9	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	en	0
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8426	year-old	anni	9	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	en	0

Trova: mate Evidenzia Maiuscole/minuscole



ONTOLOGY MANAGER

KEYS SELECTION

RELATIONS MANAGER



ISTANCES

filtered by black list 5

SKOS TREE

with frequencies

Concepts Repository

- 2
- A
- able (18)
- academic (25)
- access (20)
- access methods (5)
- acm (21)
- acm multimedia (9)
- acquired (54)
- acquired skills (48)
- acquisition (6)
- actions (8)
- addresses (5)
- addressing (5)
- agreement (7)
- allocation (26)
- analyze (27)
- and phase margin pulse crossing (5)
- applications (105)
- applied (6)

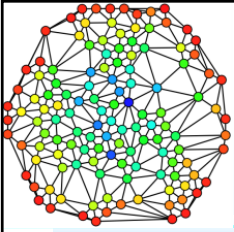
Concept Schema

- architectural (2)
- area of software engineering (1)
- artificial intelligence (2)
- automated control (0)
- computer science (0)
 - algorithm (95)
 - application (10)
 - code (8)
 - binary (4)
 - information (220)
 - notation (11)
 - xml (0)
- database (0)
- distributed systems (4)
- life cycle (0)
- programming (0)
- condition (0)
- e-commerce (0)
- e-learning (2)
- event (0)

LOG

1. skos tree node is re-loaded
2. skos tree node is re-loaded
3. **[INFO]: LOOKUP FOR acquisition (6)**
4. Related Subject:
5. http://www.unifi.it/off_form/insegnamenticc.php?cmd=2&cds=B070&cur=GEN&esa=B010480-FIRENZE&fac=200006<s=INGEGNERIA&AA=2009&codice=4480&bol=&coqnome=&nome=&f=s
6. http://www.unifi.it/off_form/insegnamenticc.php?cmd=2&cds=B070&cur=GEN&esa=B010480-FIRENZE&fac=200006<s=INGEGNERIA&AA=2010&codice=4480&bol=&coqnome=&nome=&f=s
7. Related Person:
8. Carlo Colombo (6)

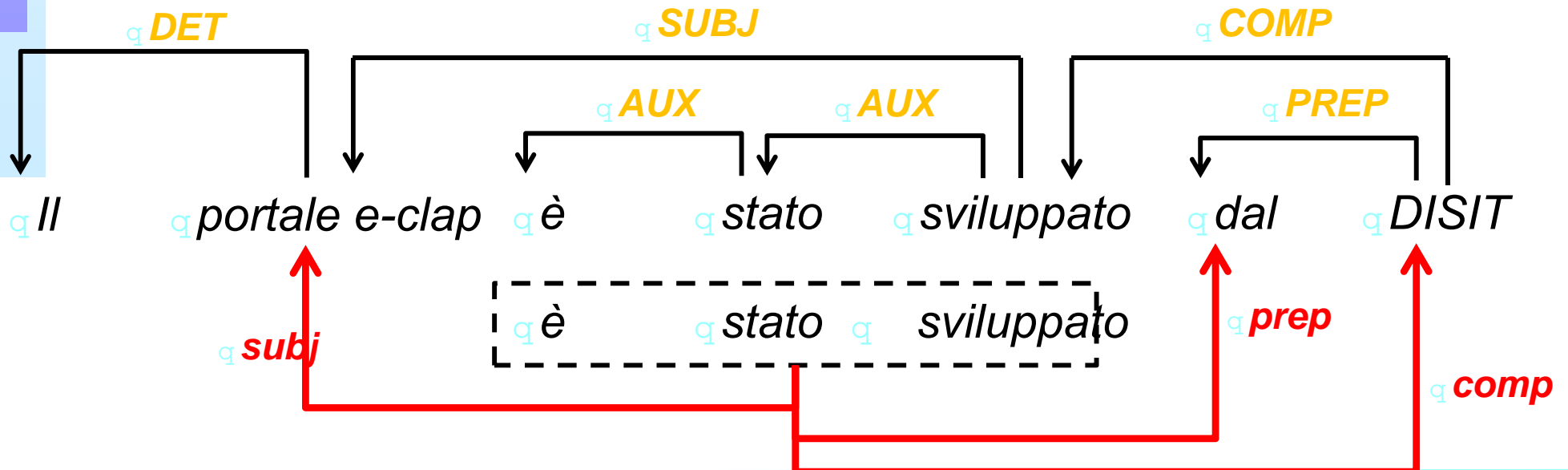


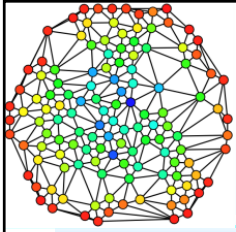


Relazioni verbali (1)

- Il sistema permette di estrarre relazioni semantiche non tassonomiche dalle pagine dell'Università di Firenze che riguardano i corsi e le persone
- Per estrarre le relazioni semantiche dai testi, il sistema analizza le frasi, genera un grafo a partire dall'albero delle dipendenze di ogni frase e individua eventuali **PATTERN PREDEFINITI** presenti sul grafo

Esempio: Il portale e-clap è stato sviluppato dal DISIT



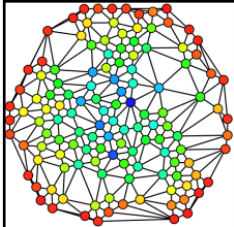


Relazioni verbali (2)

I **PATTERN PREDEFINITI** sono di 5 tipi

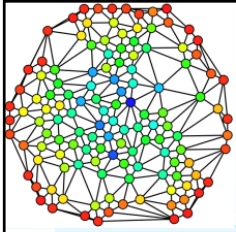
- Pattern basati sui **verbi sostantivizzati**: hanno lo scopo di individuare espressioni come «Analisi di tecniche di Information Retrieval». Generano relazioni del tipo «soggetto implicito - analizza - tecniche di Information Retrieval».
- Pattern basati su **verbi coniugati alla prima persona**: hanno lo scopo di individuare frasi del tipo «Abbiamo realizzato un progetto». Generano relazioni del tipo «soggetto implicito - realizza – progetto».
- Pattern basati su **verbi coniugati alla terza persona singolare**. Questi pattern si possono suddividere ulteriormente in due tipi:
 - ♣ il soggetto è specificato nella frase ed è individuato dal pattern: hanno lo scopo di individuare frasi del tipo «Tizio sviluppa in C++». Generano relazioni del tipo «Tizio - sviluppa - in - C++».
 - ♣ il soggetto non è specificato nella frase: hanno lo scopo di individuare frasi del tipo «analizza tecniche di Information Retrieval». Generano relazioni del tipo «soggetto implicito - analizza - tecniche di Information Retrieval»





Relazioni verbali (3)

- Pattern basati sui **verbi all'infinito**: hanno lo scopo di individuare frasi come «implementare algoritmi». Generano relazioni del tipo «soggetto implicito - implementa – algoritmi»
- Pattern basati sui **verbi passivi**: hanno lo scopo di individuare frasi come «l'algoritmo implementato da Tizio». Generano relazioni del tipo «Gianni - implementa – algoritmo».



Relazioni verbali - Manager

Welcome root [Logout](#) [OSIM Managing Knowledge HOME](#)

dipartimento di matematica per le decisioni - crawler is running

english

ONTOLOGY MANAGER

KEYS SELECTION

RELATIONS MANAGER



L'amministratore avvia la fase di estrazione delle relazioni verbali



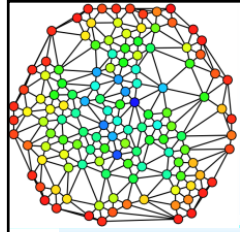
18/40 (#392)

Subject	Verb	Object	Frequency	Sentences	Enable/Disable	Delete
Luigi Vannucci	impiega	simulazione	4		✗	
Domenico Menicucci	attua	scienze	3		✗	
Domenico Menicucci	calcola	numeri	3		✗	
Augusto Bellieri Dei Belliera	insegna	scienze	3		✗	
Augusto Bellieri Dei Belliera	modella	analisi economica	3		✗	
Augusto Bellieri Dei Belliera	assicura	finanziarie	3		✓	
Andrey Sarychev	modella	dinamica	3		✗	
Andrey Sarychev	opera	insiemi	3		✗	
Andrey Sarychev	risolve	intervallo	3		✓	
Andrey Sarychev	insegna	cognomi	3		✓	

RELATION DETAILS VIEWER of Augusto Bellieri Dei Belliera

Infinite form	Third person form	Competence	Sentence
modellare	modella	analisi economica	un modello per l'analisi economica, finanziaria e gestionale di operazioni di leasing.





Relazioni verbali - Query

Question Answer [Query Wizard](#)

Wizard

Quale Persona o Struttura ha questa competenza ?

Quale ha questa competenza ?

Elenca le competenze relazionate con

Elenca le competenze

Elenca le Persone del di

Elenca le pubblicazioni

dal al

Elenca con area CUN

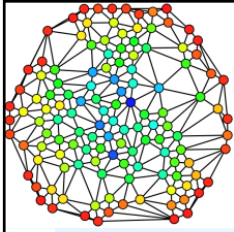
e settore scientifico disciplinare (SSD)

dal al

Chi ?

Quale competenza ?





Validazione (1)

- OSIM è stato validato e confrontato con Marsilius
 - ♣ La performance dei due sistemi, su un sottoinsieme di 8 dipartimenti, è stata misurata e confrontata
- Per sistemi di IR viene tipicamente utilizzato lo standard di validazione TREC (Text REtrieval Conference)

$$Precision = \frac{\#(\text{relevant items retrieved})}{\#(\text{retrieved items})}$$

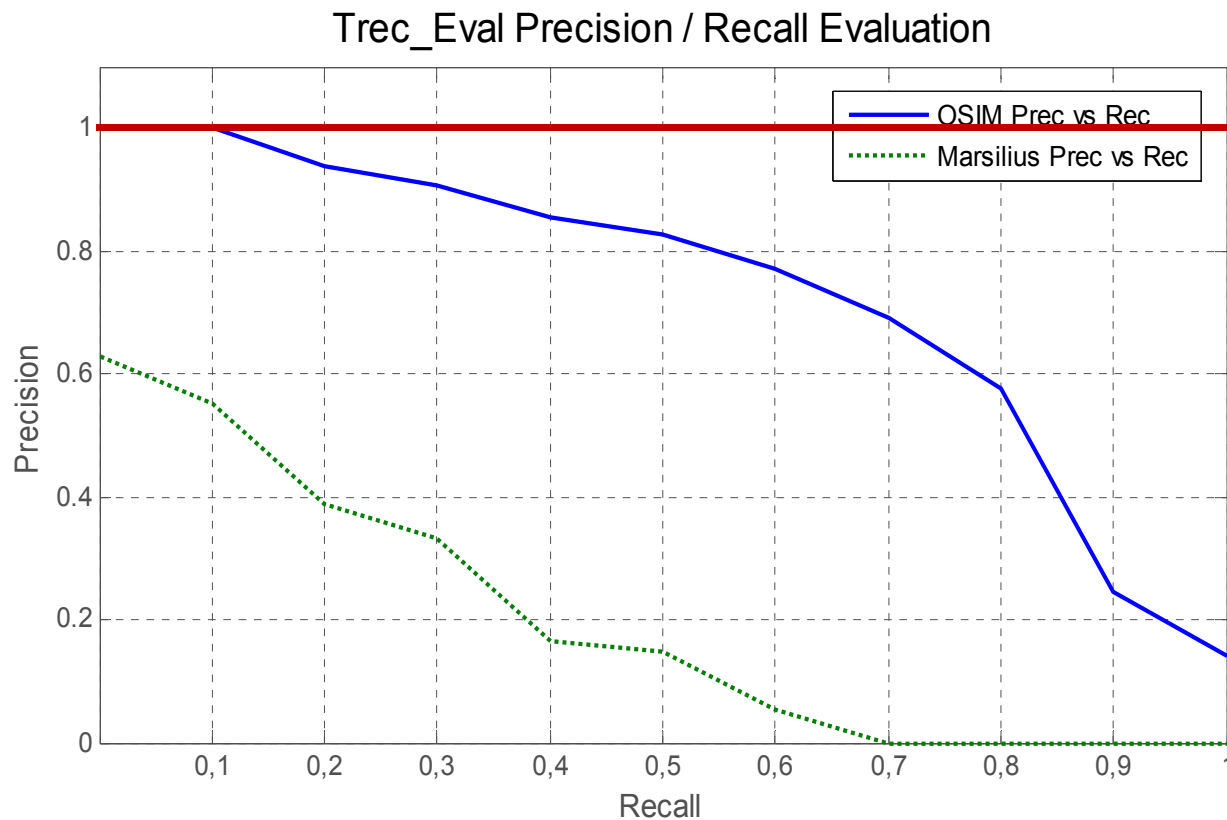
$$Recall = \frac{\#(\text{relevant items retrieved})}{\#(\text{relevant items})}$$

- I documenti / risultati sono considerati rilevanti se soddisfano il tipo di informazione richiesta, non solo perché contengono tutte le keywords immesse nella ricerca.
- Query di validazione eseguite da esperti dei vari domini di conoscenza analizzati

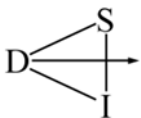


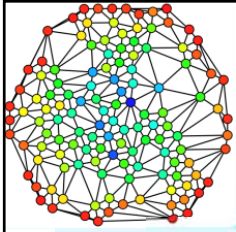
Validazione (2)

- Set di query su un sottoinsieme di 4 dipartimenti
- Profondità dei risultati fissata $N = 20$
- Curva *Precision – Recall* ottenuta con il software standard *Trec_Eval*

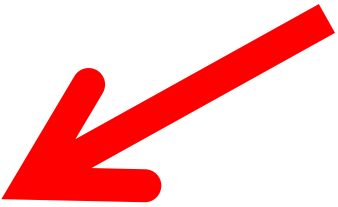


q **Ottimo ideale**





Struttura del Seminario

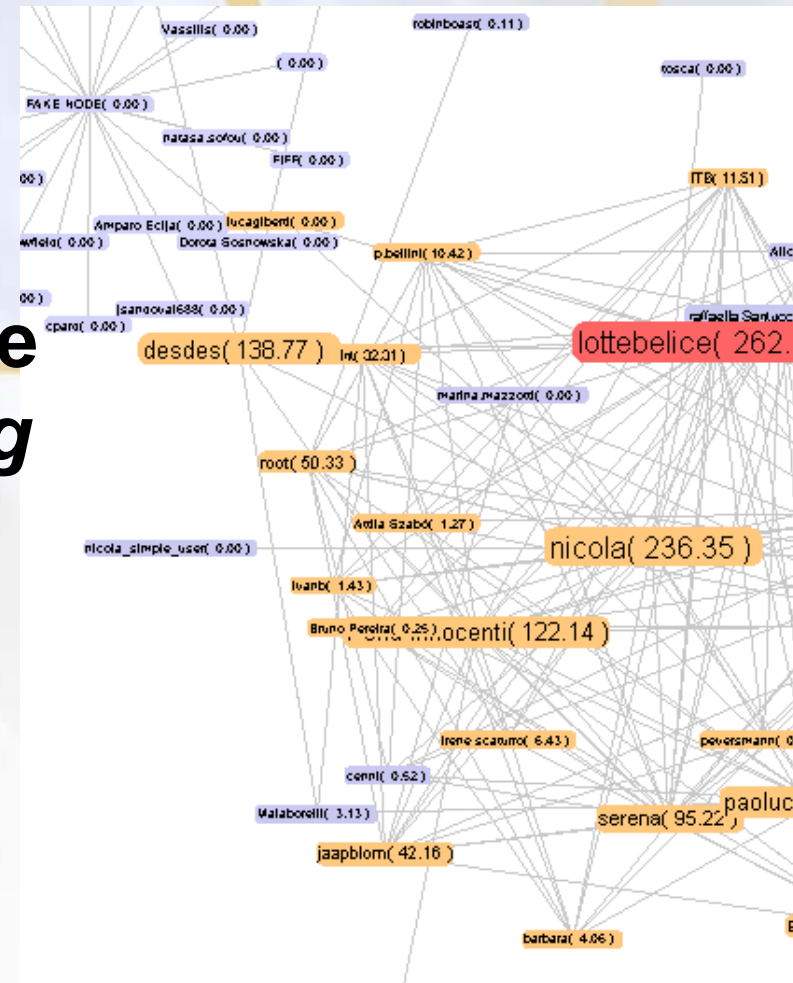
- Social Networking and knowledge
- Semantic and Social Networks
- Recommendations and Suggestions
- Natural Language Processing System
- Knowledge Representation System
- Reasoning System
- Sistema OSIM
- Anatomy of a Social Network 



Agenda Overview

- Objective and overview ←
- Networking & Tools
- Content & Tools
- ECLAP Architecture
- Comparison with other Social Networks

- **Content aggregators to**
 - Aggregate and Enrich content
 - prepare content for Europeana, and
 - distribute content to ECLAP users
- **Working Groups on best practice reports about *tools for performing art content for:***
 - Education and Training
 - Intellectual Property and business models
 - Digital libraries and archiving



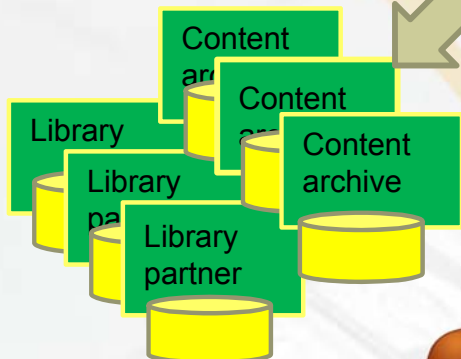
Automated
Back office



ANY content



ANY content



UGC, web page,
comments



Metadata

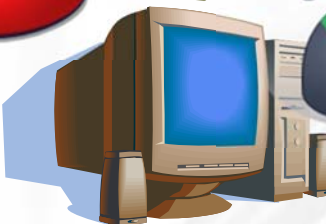


-PC, MACos, linux, ...
-iPhone, iPod,
Windows Mobile,

Search/Query



Agg. Content
Content
Services





FEATURED

(1-10 of 192 in 12365 ms)



A Cinema Lesson by Carole Roussopoulos

Swiss video director Carole Roussopoulos talks about her work and her life.

12 Hits Rating ★★★★★

Actions



Scene from the performance Pippi No.2/2

Scene from the performance Pippi

2 Hits Rating ★★★★★

Actions



Trasmisione forzata, 4° puntata

Dario Fo e Franca Rame tornano in Tv nel 1988, un quarto di secolo dopo essere stati cacciati da "Canzonissima", e ne mimano l'occupazione con una compagnia di

teatranti fra i quali Enzo

6 Hits Rating ★★★★★

Actions



Lucinda Childs / Maggiodanza THE CHAIRMAN DANCE...

Video with excerpts from the dance performance "The Chairman Dances - Largo - L'Uccello di Fuoco" by Lucinda Childs for Maggiodanza within Festival Fabbrica Europa

2005 / choreographies: Lucinda

14 Hits Rating ★★★★★

Actions



film dokumentalny pt. Okno pamięci

film dokumentalny pt. Okno pamięci Leszka Mądzika, w reżyserii Andrzeja Matyni, którego premiera odbyła się w 1989 roku

1 Hits Rating ★★★★★

Actions



Scene from the performance Bartleby, the Scrivener

Bartleby The Scrivener is a surprisingly current short story by the American classical writer, Herman Melville, known almost exclusively for his novel Moby Dick. Bartleby, or "the most famous

8 Hits Rating ★★★★★

Actions

▶ MEDIA RELATIONSHIP

▶ CONTENT

- *Featured*
- *Popular*
- *Popular in the period*
- *Last Posted*
- *Top Rated*
- *Location*
- *Upload new content*

▶ ORGANIZE PERSONAL COLLECTION

▶ COMPOSE PLAYLIST

▶ ROOT

▶ KEYWORD CLOUD

▶ QUERY CLOUD

▶ CLASSIFICATION

▶ GROUPS

▶ POTENTIAL COLLEAGUES

▶ STATISTICS ON YOUR ACTIVITIES

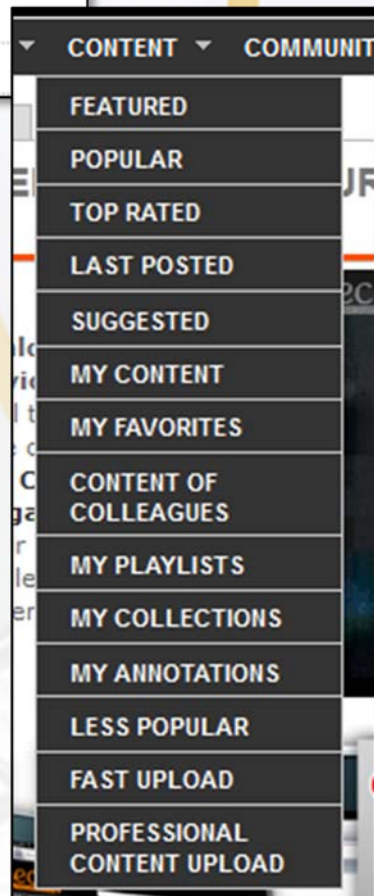
▶ STATISTICS ON YOUR GROUPS

▶ STATISTICS ON DOWNLOADS

▶ STATISTICS ON QUERIES

▶ STATISTICS ON ACTIONS

Content lists



- From block and menu
- Pre-calculate
 - Usage
 - Locality
- Personal
 - Favourites
 - Featured
 - Playlist
 - Collections
 - Suggested
 - Uploaded
 -

▼ KEYWORD CLOUD

ahds arts **collection** company cooper
copyright database design **designing**
donald educational holder images **museum**
music performing production purposes royal
shakespeare

▼ QUERY CLOUD

artaud bajo **bene** brook **carmelo**
dario desconegut
conference dance europeana fandub filippo gizi grotowski gyula
harangozó koreográfus magyar meeting
metadata music nemzeti operaház peter rossi
servillo **shakespeare** színház **teatro**
theatre

▼ CLASSIFICATION

List of Terms

- ▶ *Genre (717)*
- ▶ *Historical period (4276)*
- ▶ *Management and organisation (8412)*
- ▶ *Movements and Styles (29)*
- ▼ *Performing Arts (70671)*
 - ▶ *Cinema and Film (2106)*
 - ▼ *Dance (287)*
 - Ballet (2)*
 - Ballroom (0)*
 - Recreational (0)*
 - Traditional (31)*
- ▶ *Music (1513)*


Indexes

- Keyword cloud
- Query Cloud
- Taxonomical Classification

Numbers

- >30 partner from Europe + Chile, Russia, South Africa
- >100.000 content, 300.000 items
- Descriptive metadata in 13 languages
- Interface in 21 languages
- Accessed from 184 Countries
 - Mainly from: Italy, UK, Spain, US, NL, B, SI, Hu, Fr, Pl, Pt, Gr, D, Bz, Ind, Sw, Au, Rs, Ca, etc.
- More than 35 groups
- More than 500 different file formats

Agenda Overview

- Objective and overview
- Networking & Tools 
- Content & Tools
- ECLAP Architecture
- Comparison with other Social Networks

■ **Networking and Social Services**

- User groups, discussion, forums, mailing lists
- Connection with social network for share and contact gathering
- Suggestions and recommendations to ECLAP users
- Events setup and management
- Mailing notifications

■ **Content Distribution** toward several channels

- For: PC/Mac/Linux, iPad, mobiles
- Providing content towards Europeana
- ...

Working groups and groups

The screenshot shows the eclap website interface. At the top, there is a search bar with the text "any types" and a "deep search" button. Below the search bar is a navigation menu with options: HOME, ABOUT, PROFILE, CONTENT, COMMUNITY, SEARCH, SERVICES, EVENTS, HOWTO. The user's name "paolo" and a language selector "Exit" are visible in the top right corner.

The main content area is titled "GROUPS" and includes a search box for groups by name. Below this is a table listing several groups with columns for Group, Description, Director, Posts, and Members.

Group	Description	Director	Posts	Members
Digital Meets Culture, Italy	Digital Meets Culture is accounted as a remarkable meeting point for collecting and sharing information and events about the digital culture.	root	4	6
Department of Information Systems for Arts and Humanities, DISAH, St. Petersburg, Russia	The Department of Information Systems for Arts and Humanities is meant for the bachelor programme Information Technologies for Arts and Humanities.	borisov	3	6
Associazione Culturale Onlus ICT Ad Duas Lauros, Rome, Italia	The Associazione Culturale Onlus ICT Duas Lauros with Associazione Ecomuseo Casilino Ad Duas Lauros, is realizing the project of research, development, production, diffusion of theatrical activities, the music exhibitions and conferences.	duaslauros	7	11
Theatrical Events Working Group	This group has been created for members of the Theatrical Event Working Group of the FIRT/IFTR to explore ECLAP and to use this ECLAP working group as a space for working together.	Josefien Schuurman	6	20
Teatro Napoletano, Napoli, Italia	The archive Teatro Napoletano was founded on January 29 in 2001 under the patronage of the university of salerno and carried out by the University of Salerno.	alezza	6	31

On the right side of the page, there is a sidebar with a "CONTENT" menu and a "GROUPS" section. The "GROUPS" section lists various thematic working groups and workshops, such as "WG: Intellectual Property and Business Models for Content" and "WG: Performing Arts Education and Training tools".

- Over than 35 Groups
 - Thematic groups
 - Groups and channels of content provider
- Forum, news, events, content
- Best practice white papers

GROUP OBJECTS LIST: DEVELOPMENT



ECLAP Kick-off meeting partners photo

Photo of the kick-off meeting with all ECLAP project partners (University of Florence, 13th July 2010)

1614 Hits Rating ★★★★★ 2

Actions



playlist CTA

A demo playlist using CTA video content

286 Hits Rating ★★★★★

Actions



ECLAP Best Practice Network User Manual, This porta...

User manual of the ECLAP BPNET, updated version. It includes user manual of the tools on the ECLAP portal and mobiles devices.

4950 Hits Rating ★★★★★

Actions



Taormina theatre

Photo of Taormina theatre

49 Hits Rating ★★★★★

Actions



Europeana v1.0 - User and Functional Testing. Final re...

Europeana v1.0 - User and Functional Testing. Final report

39 Hits Rating ★★★★★

Actions



MINERVA -

MINERVA - Handb...

26 Hits Rating ★★★★★

Actions



Malan Bredemeyer

Malan Bredemeyer

24 Hits Rating ★★★★★

Actions



EuropeanaC

EuropeanaConnect

19 Hits Rating ★★★★★

Actions

CONTENT

ORGANIZE PERSONAL COLLECTION

ROOT

KEYWORD CLOUD

QUERY CLOUD

CLASSIFICATION

GROUPS

STATISTICS ON YOUR ACTIVITIES

STATISTICS ON YOUR GROUPS

STATISTICS ON DOWNLOADS

STATISTICS ON QUERIES

STATISTICS ON ACTIONS

SOCIAL NETWORK ANALYSIS

WHO ONLINE

DEVELOPMENT

USER SWITCH

Windows Phone Marketi, have a good ECLAP mo



Il primo miracolo di Gesù Bambino - camera frontale



ACTIONS

RELATED OBJECTS BY TEXT

- Gesù e le donne - 24 maggio 2007
- Gesù e le donne - 12 dicembre 2006
- Gesù e le donne - 12 dicembre 2006
- Gesù e le donne - 27 gennaio -2007
- Gesù e le donne - 8 gennaio 2001
- Gesù e le donne - 30 gennaio 2001

Dear root, you have been entitled to be a Query Validator. If this role has been assigned to you erroneously please send an email to info@eclap.eu. If you are interested in helping us to improve the query service, please tick ALL the contents you consider relevant to the performed query. Each tick is automatically registered. You can change them as you like. Thanks a lot in advance!

Sort by Relevance Sort by Upload Sort by Update

SEARCH RESULTS

(1-10 of 105599 in 2433 ms)



Manifestazione "Il Treno della Memoria" e relativa ca...

Fotografie a colori della manifestazione itinerante "Il treno della memoria" sulle stragi di Stato, da Brescia a Roma, svoltesi il 12 e 13 dicembre 1999.

7 Hits Rating ★★★★★

Actions Relevance 20



Mistero buffo - 1969, Giullarata popolare

Lettera a Dario Fo dell' "Asociacion cultural Caballo de Bastos" di Madrid (Spagna): invito a presentare "Mistero buffo" al Primo Festival Internazionale di Teatro a Madrid (Spagna).

6 Hits Rating ★★★★★

Actions Relevance 20



Gli arcangeli non giocano a flipper - 1959, Commedia i...

Manifesto della commedia in tre atti "Gli arcangeli non giocano a flipper" di Dario Fo, messa in scena dalla Comedie de l'Ouest (Francia) in varie città francesi. Les Archanes ne jouent pas au ...

3 Hits Rating ★★★★★

Actions Relevance 20



Dario Fo e...

...dedicati a Darwin.

Relevance 20

METADATA

Metadata languages



Title

Il primo miracolo di Gesù Bambino - camera frontale

Subject

Prologo del Primo miracolo di Gesù bambino. D. Fo Il primo miracolo di Gesù bambino in idem, "Storia di una tigre e altre storie", Milano, La Comune, 1980, pp. 63-120.

Description

Prologo del Primo miracolo di Gesù bambino, estratto dei primi 6 mn. Fo accorda la recitazione sulle reazioni del pubblico e prepara gli spettatori a riconoscere gli appuntamenti logici della storia che sta per narrare. Cfr. D. Fo, Manuale minimo dell' attore, Torino, 1987.

Technical

Classification

IPR information

Location

ACTIONS

CONTENT

COMMENTS

POST NEW COMMENT

Your name:

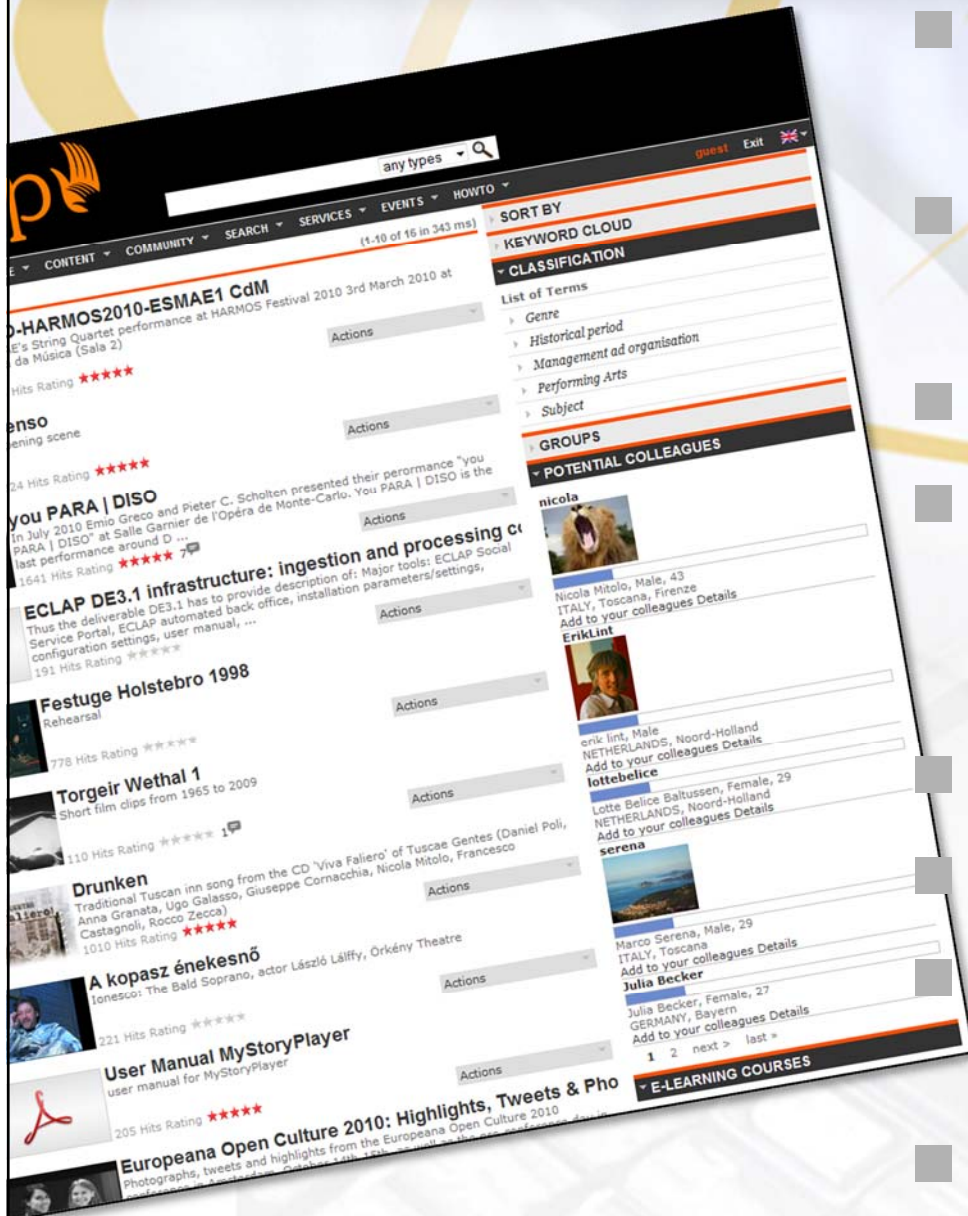
root

Subject:

Comment: *

Group Designer

ECLAP Social Networking



- User groups, discussion, forums, mailing lists
- Connection with social network for share
- Contact gathering
- Suggestions and recommendations to ECLAP users
- Events setup and management
- Mailing notifications
- Custom look and feel with group designer
- ...

▼ POTENTIAL COLLEAGUES

rosariaguerra



rosaria guerra, Female, 41
ITALY, Lazio
Spoken languages: Italian
You have a similar profile
Are you interested in getting in contact?
[Add to your colleagues](#) [Details](#)

Cristina Riccati

Cristina Riccati, Female, 42
ITALY, Piemonte, Torino
Spoken languages: English,French
You have a similar profile
Are you interested in getting in contact?
[Add to your colleagues](#) [Details](#)

carolinamadriz

Ana Carolina Madriz Zuniga
COSTA RICA
Spoken languages: Catalan,English,Spanish,French
You have a similar profile
Are you interested in getting in contact?
[Add to your colleagues](#) [Details](#)

SS5NemboKid

Roberto Bandini
ITALY
Member of: ECLAP Best Practice Network, WG:
Intellectual Property and Business Models for Content
Work as: Student
Are you interested in getting in contact?
[Add to your colleagues](#) [Details](#)

«first <previous 1 2 3 4 5 6 7 8
9 ... next > last »

Suggested Colleagues



- Why ?
 - They have the same age
 - Access to the same content
 - Have the same interests
 - ...



Newsletter

- Profiled
- On the basis of:
 - Group
 - Taxonomy
 - ..



Sun, 2012-07-15 13:40e

HOME ABOUT PROFILE CONTENT COMMUNITY SERVICES EVENTS

Greetings paonesi,
These are your messages:

Updates for Page: Embed demo

- Embed demo by [p.bellini](#). Description: This page demonstrates the embedding capabilities of ECLAP content in a web page, third party web page. ECLAP content can be embedded in external web portals. Embedded content can be viewed also on iphone/ipad. In order to embed an ECLAP content you have to follow the following instructions. More.... Read more at [link](#)

Updates for Page: Expositing references to ECLAP content in WEB pages, Using COPY HTML Feature

- Expositing references to ECLAP content in WEB pages, Using COPY HTML Feature by [root](#). Description: In order to refer or promote your ECLAP content in web pages or documents, it is very important to have the possibility of copying the citation to an ECLAP object in an easy and simple manner. To this end, ECLAP provides you different solutions: Citations via QR code, see the related web Read more at [link](#)

New Blog has been submitted

- Embedding and Citing ECLAP Content in your web pages has never been so easy by [root](#). Description: The support for embedding and citing ECLAP content in third party web portal is completed! You can find information about HOW to Promoted ECLAP Content in your web pages via simple references or embedding the ECLAP players by using the following web pages: copy html page and exampl.... Read more at [link](#)

- Seminario/Workshop ECLAP ad AGORA di Polis, 17 Luglio 2012, 15:30, Le Murate Firenze by [root](#). Description: European Collected Library of Artistic Performance <http://www.eclap.eu>, a AGORA di POLIS, Firenze, 17-18 Luglio 2012 ECLAP: la piu' grande library e social network sulle arti performative. (seminario/workshop 15:30, 17 Luglio 2012, Le Murate, Firenze) Con la p.... Read more at [link](#)

New Page has been submitted

- University of Rome Tor Vergata by [root](#). Description: University of Rome Tor Vergata TorVergata University, established in 1981, is located in the south-eastern part of Rome in a 600 hectare campus far from the hectic city centre,

CONTENT

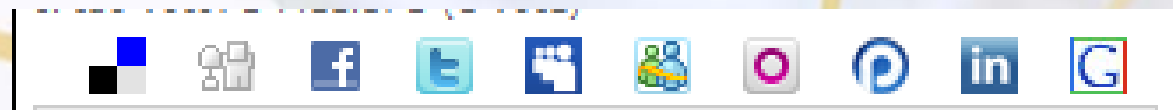
- [Featured](#)
- [Popular](#)
- [Less Popular](#)
- [Last Posted](#)
- [Top Rated](#)

GROUPS

- [Working Groups & Workshops](#)
- [WG: Intellectual Property and Business Models for Content](#)
- [WG: Performing Arts Education and Training tools](#)
- [WG: Digital Libraries Tools](#)
- [Centre de Documentació Museu de les Arts Escèniques Institut del Teatre de Barcelona, ITB](#)
- [Centro Teatro Ateneo, University of Rome La Sapienza](#)
- [Dario Fo & Franca Rame Archive](#)
- [Department of Theatre Studies, University of Amsterdam, UvA](#)
- [Escola Superior de Música, Artes e Espectáculo do Porto](#)
- [Festival International de Films de Femmes de Créteil \(FIFF\)](#)
- [History of Art at University of Glasgow](#)
- [La Maison du Spectacle La Bellone](#)
- [Museum of Archaeology and Anthropology](#)
- [Muzeum, Institute of Art Production, Mediation and Publishing](#)
- [ODIN](#)
- [OSZMI](#)
- [Sound & Vision \(Beeld en Geluid\)](#)
- [The Institute of Polish Culture University of Warsaw, IKP](#)
- [TWM](#)
- [UCL](#)

■ Recommendations

- Direct: emails and messages
- Towards Social network, social icons



■ Acquisition of contacts from other Social Network


- [Build your net in ECLAP](#)
- <http://www.eclap.eu/drupal/?q=user/openinviter>
- Once imported the content,

- ECLAP will help you in verifying if they are on ECLAP
- If yes, you can connect them to you
- If not, you can automatically invite them to join you on ECLAP.

Content Embedding/ promotion

- ECLAP Content can be embedded and promoted in other WEB Portals via “Copy HTML” function
- ECLAP generates the code to be included for

- **Citations:**




you PARA | DISO
In July 2010 Emilio Greco and Pieter C. Scholten presented their performance "you PARA | DISO" at Salle Garnier de l'Opéra de Monte-Carlo. You PARA | DISO is the last performance around Dante's Divina Commedia. Similar to the last part of the book the subject of this performance is paradise. In the run up to the première of you PARA | DISO they will take you along their journey to paradise. But what is it that we call paradise? By means of ten questions, with which they have also been confronted in their artistic process, they try to get closer to the essence of paradise. Let's all go to Paradiso!

- **Embedding (insert ECLAP player):**



Agenda Overview

- Objective and overview
- Networking & Tools
- Content & Tools 
- ECLAP Architecture
- Comparison with other Social Networks

ECLAP Content

- Content kind
- Metadata model
- Metadata Editor
- Indexing and Search
 - Faceted, multilingual
- Content IPR modeling and CAS
- Content Aggregation: playlists, collections
- Courses as Content
- AudioVisual relationships among content MyStoryPlayer

Scalable back office, AXCP

- **Semantic model:**
 - Cross media content, any content kind
 - Multilingual indexing and faceted search with ordering
 - Content Aggregations
- **Semantic reasoning:**
 - Suggestions, recommendations
- **Automated and Scalable content management**
 - Content file ingestion, repurposing for any device
 - Cope with more than 500 file formats

■ **See IEEE Multimedia, 2012**

ECLAP ANY content kind

■ Informative Content

- Video, audio, images, documents
- 3D, animations, Braille
- Slide, Video-Slide, courses
- eBook, ePub, Mpeg21, intelligent

■ Aggregated Content:

- Playlist, Collections
- Annotations, Synchronization

■ Support and networking content:

- Blog, WebPage, Events, comments, forum, votes, messages, ...

- Performance
- Master classes
- Scene Sketches
- Scenography
- Scenes
- Private lives of artists
- Scores
- Braille
- BackStage Stills
- Choreography
- Morals
- Poster
- Booklets
- Magazines Music
- Audio ballets

comments

rating

relationships

technical

Dynamic

recommend

.....

- **Describe the ECLAP content**
 - **Dublin Core:** general, multilingual and multi-instances (e.g., title, authors, description, subjects, ..)
 - **Semantic:** content description, taxonomy, tags, annotations, etc., multilingual & multi-instances
 - **Groups:** one or more groups
 - **Technical:** duration, file format, dimension, editor, publisher, any IDs, etc. etc.
 - **Augmented Reality:** GPS, QR,..
 - **Intellectual Property:** IPR, licences for MD, licences for profiling the conditional access
 - Workflow metadata: status, dates, versioning, etc.
 - Etc.

Vittorio Gassman Macbeth nascosto/3



00:15 / 12:48

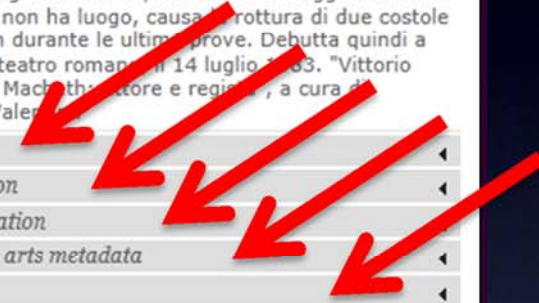
METADATA

Metadata languages

Title
 Vittorio Gassman Macbeth nascosto/3

Description
 Colore Videoregistrazione in tempo reale delle prove per la messinscena del Macbeth di Shakespeare tradotto, diretto e interpretato da Vittorio Gassman. E' probabilmente l'unica registrazione del metodo di lavoro di Gassman, dalla prima prova a tavolino fino alla prova generale in costume. La prima dello spettacolo, prevista per il 30 giugno a Firenze, Palazzo Pitti Maggio Musicale Fiorentino, non ha luogo, causa rottura di due costole di Gassman durante le ultime prove. Debutta quindi a Verona, al teatro romano, il 14 luglio 1983. "Vittorio Gassman - Macbeth: attore e regista", a cura di Valentina Valentini

Technical
 Classification
 IPR information
 Performing arts metadata
 Location



ACTIONS

All tags: None

Login or register to tag items

Average: ☆☆☆☆☆
 Your rating: None

RELATED OBJECTS BY TEXT

Vittorio Gassman Macbeth nascosto/4
 Vittorio Gassman Macbeth nascosto/2
 Vittorio Gassman Macbeth nascosto/5
 Vittorio Gassman Macbeth nascosto/1
 Vittorio Gassman prova Macbeth/1

POPULAR IN THE PERIOD

(1-10 of 387 in 2276 ms)

C. Bene, E. De Filippo: Incontro con gli studenti/1
 Colore Stereo Videoregistrazione in tempo reale dell'incontro-dibattito con Carmelo

Technical

N° accesses 28

Format video

Type video

Duration 00:12:48.0

Video quality available LD MD

Available platforms PC, iPhone/iPad, Android, Windows Phone 7, Windows Mobile 6.5

Upload date Sun, 2012-01-15 04:08

Group

Centro Teatro Ateneo, University of Rome La Sapienza, UNIROMA, Italia

Published by CTA-UNIROMA

Upload user marcomaci

Original filename ITUR1CTAVGA09074.mov

Workflow type Europeana

Content-url link to this content

QR code



axoid urn:axmedis:00000:obj:03b7454d-6b7f-464a-9050-1d42e98cff88

Classification

IPR information

Technical

Classification

Type Videosintesi e materiali di prove dello spettacolo, a cura di Valentina Valentini

Language Ita

Source BVU

isPartOf Vittorio Gassman

Original metadata language it

IPR information

Rights

Ferruccio Marotti, Centro Teatro Ateneo - "Sapienza" Università di Roma, Eredi Gassman

IPR owner page link to page

Europeana rights Europeana: Unknown copyright status

Public No

PC permission

	Public	Group	Educ.	Trusted
Download HD PC	No	No	No	Yes
Play HD PC	Yes	Yes	Yes	Yes
Download LD/MD PC	No	No	No	Yes
Embed	No	No	No	Yes
Play LD/MD PC	Yes	Yes	Yes	Yes

Mobile permission

	Public	Group	Educ.	Trusted
Download mobile browser	No	No	No	Yes
Play mobile browser	Yes	Yes	Yes	Yes
Download mobile app	No	No	No	Yes
Play mobile app	Yes	Yes	Yes	Yes

Performing arts metadata

Location

Performing arts metadata

First performance date 1983-07-

Performance place Teatro Ateneo

Performance city Roma

Performance country Italia

Performing Arts Group Compagnia del Teatro Manzoni diretta da Vittorio Gassman, con la collaborazione del 46° Maggio Musicale Fiorentino, della Bottega Teatrale di Firenze e dell'Estate Teatrale Veronese

Performers and crew Riprese: A. Muschietti; Tecnico audio e video: S. Casaluci; Interpreti e personaggi: Alessandro Esposito (Duncan, re di Scozia, un portiere), Danilo De Girolamo (Malcom), Roberto Medina (Donalbain), Vittorio Gassman (Macbeth), Carlo Montagna (Banquo), Luciano Virgilio (Macduff), Gian Franco Baroni (Lennox), Stefano De Sando (Ross), Luca Lazzareschi (Angus), Sergio Basile (Seward, conte di Northumberland, un capitano, un sicario), Lorenzo Gioielli (figlio di Seward, Fleance, figlio di Banquo), Alessandro Nisivoccia (un medico), Sergio Meogrossi (primo sicario), Federico Grassi (un sicario), Annamaria Guarnieri (Lady Macbeth), Giovanna Carcasci (Lady Macduff), Regina Senatore, Gabriella Chiari, Francesca Tardella, Franco Concilio, Franco Felici, Federico Grassi, Luca Lazzareschi, Stefano Molinari, Guido Paternesi (streghe). Scene e costumi: Paolo Tommasi; Musiche: Gianandrea Gazzola; Regia: Vittorio Gassman

Genre Teatro

Historical period XX Secolo

Location



Augmented reality features: QR and GPS accesses

- **Objects may have GPS locations:**
 - Shown on WEB and used on Mobile
 - **GPS coordinates have been extracted from Symbolic Locations on metadata**
- **All the objects have a QR**
 - It can be used to access and download the content from mobile, by using the Camera.
 - Applied on museum, position, objects, user manual, tapes, boxes, etc.
 - ID shortcut for cataloguing

LOCATION MAP



Federal Republic of Germany (1-10 of 26 in 4163 ms)



Tutta casa, letto e chiesa -1977, Monologhi satirici sull...

Manifesto dello spettacolo "Tutta casa, letto e chiesa" Nur Kinder, Küche, Kirche

1 Hits Rating ★★★★★

Actions



Disegni, bozzetti e dipinti non collegati a opere particol...

Dario Fo: serie di disegni raffiguranti le sorelle Monteros, note ballerine di flamenco. Le sorelle Monteros.

1 Hits Rating ★★★★★

Actions



rejestracja akcji Miasta Równoległe/ Ciudades Paralela...

rejestracja akcji Miasta Równoległe/ Ciudades Paralelas/ Parallele Staedte. Edycja: Berlin. Koncepcja projektu: Lola Arias / Stefan Kaegi. Opis projektu: ...

1 Hits Rating ★★★★★

Actions



Estero - Documenti vari e corrispondenza relativa a Pa...

Dario Fo e Franca Rame incontrano il pubblico del teatro tedesco Berliner Ensemble in una conversazione con il regista Peymann Claus.

1 Hits Rating ★★★★★

Actions

CONTENT

- Featured
- Popular
- Popular in the period
- Last Posted
- Top Rated
- Location
- Upload new content

ORGANIZE PERSONAL COLLECTION

ROOT

KEYWORD CLOUD

QUERY CLOUD

CLASSIFICATION

GROUPS

POTENTIAL COLLEAGUES

boloska

stefania bolognesi, Female

ITALY

Add to your colleagues Details

Alessandra

Alessandra MARFOGLIA, Female, 38

ITALY

Add to your colleagues Details

carolinamadriz

Ana Carolina Madriz Zuniga

COSTA RICA

Add to your colleagues Details

@borja

Carol Borja, 33

MEXICO, Michoacán

Add to your colleagues Details

Valentina Valentini

Valentina Valentini, Female

ITALY

Add to your colleagues Details

1 2 3 4 5 6 7 8 9 next > last >

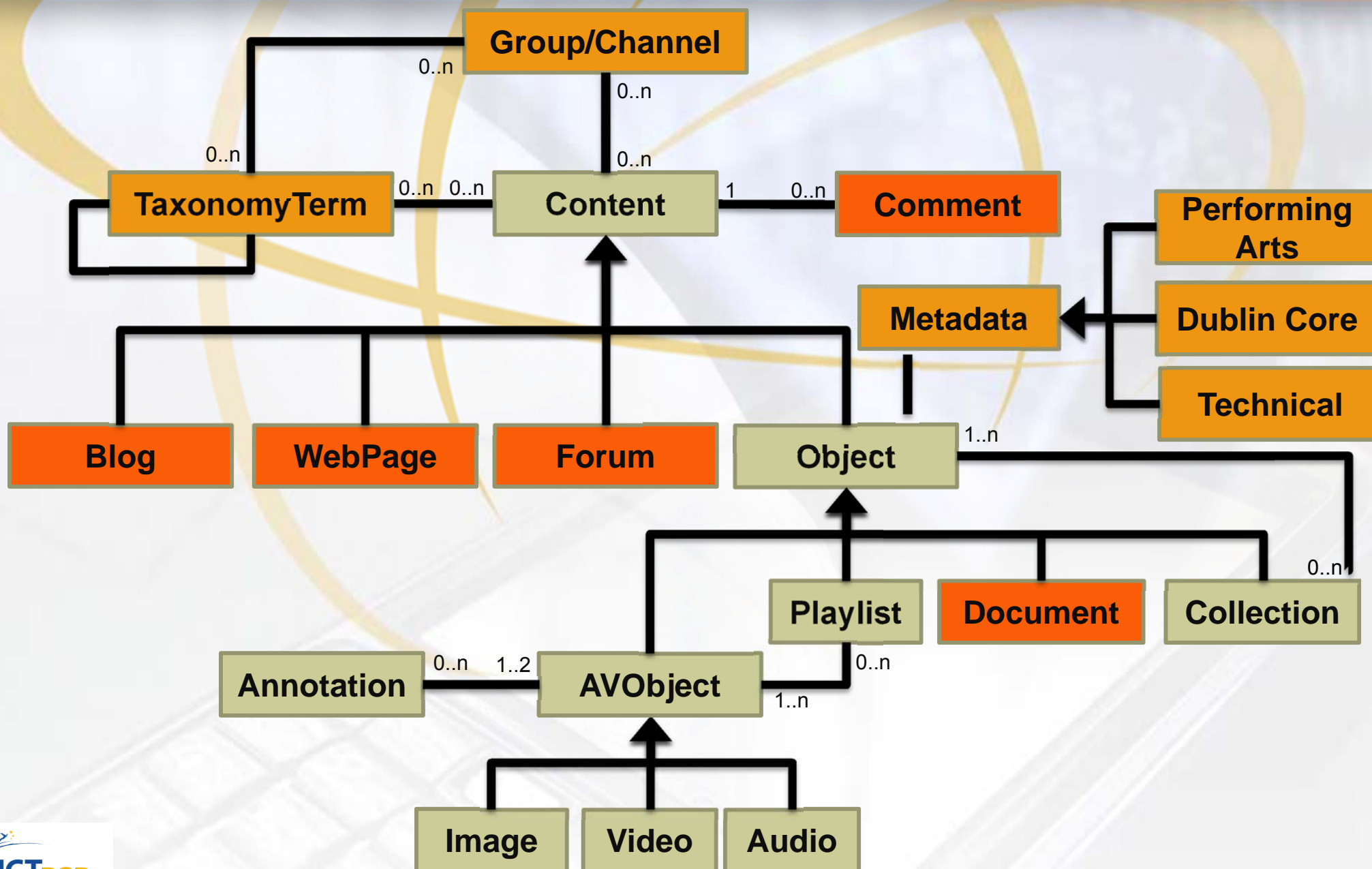
STATISTICS ON YOUR ACTIVITIES

STATISTICS ON YOUR GROUPS

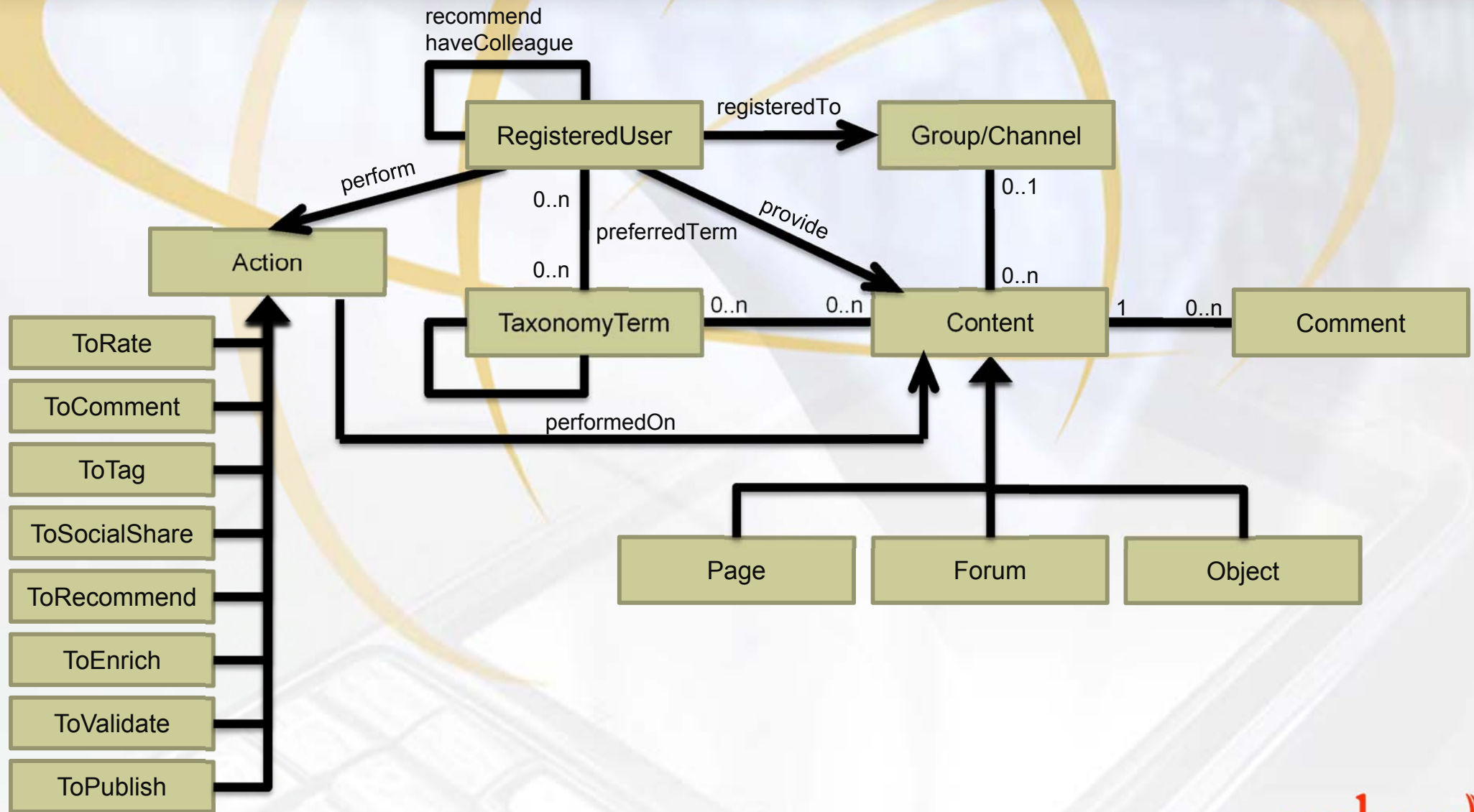
STATISTICS ON DOWNLOADS

STATISTICS ON QUERIES

ECLAP semantic model

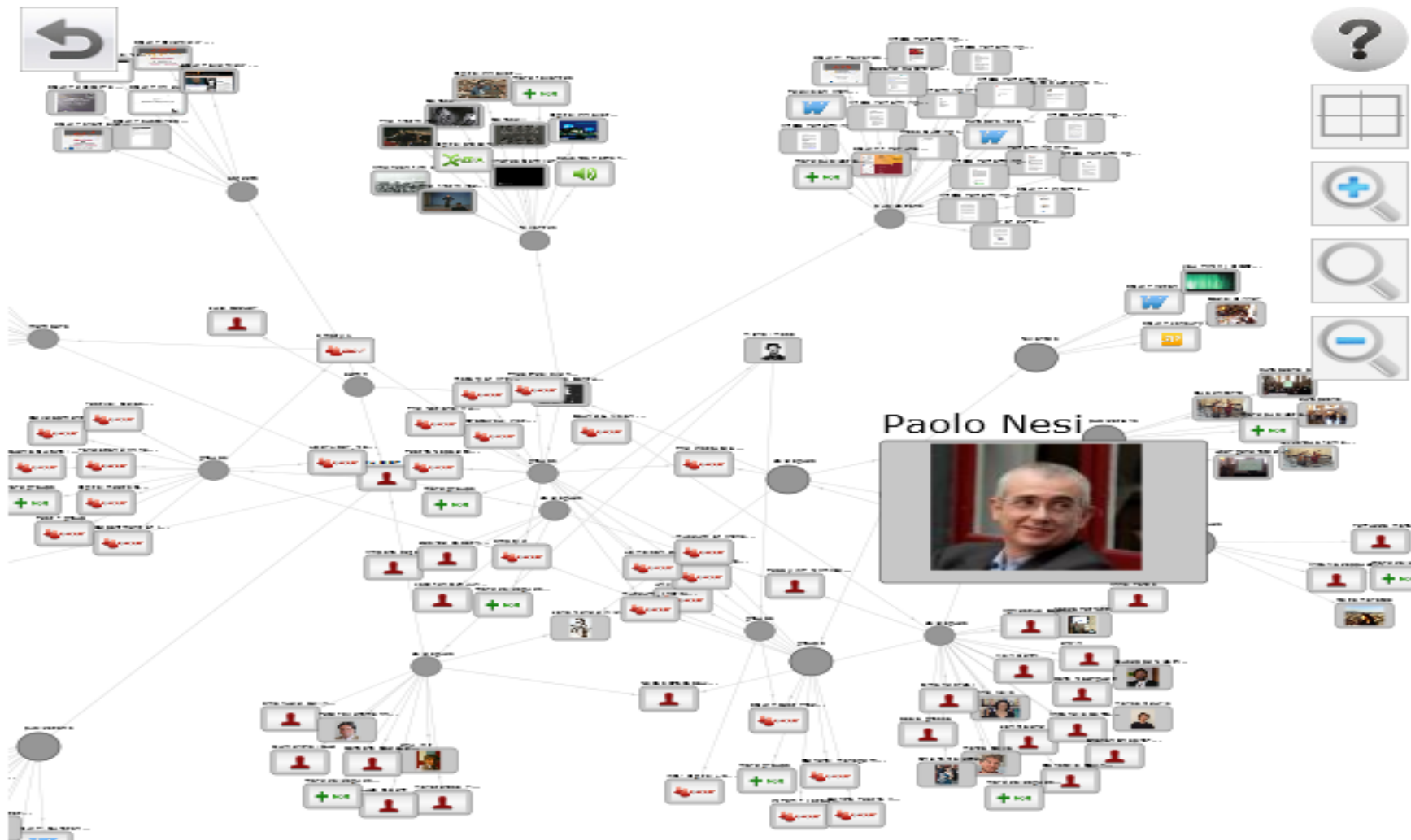


BPN: User based semantic model



Social Graph

SOCIAL GRAPH



Type of relations

Select all

Deselect all

- Creator
- Collections
- Colleagues
- Administrators

- Groups
- Annotations
- Publications
- Writer

- Favorite
- Comments
- User's favorites
- Object list

- Taxonomies
- Related Objects
- Group member

Metadata Editor

METADATA EDITOR

Search Panel

Metadata Panel

Apply Changes

Content to be processed

History

Workflow

Close Metadata Editor session

WORKFLOW

State	Under-Enrichment
Type	EclapWorkflow
Target	Test
Last User	root
Last Access	2012-07-15 20:06:05
Native Metadata Number	10
Total Metadata Number	46
Validated Metadata	0
Enriching Activities	2
Last Comment	

PREVIEW



METADATA PANEL

DCMI TAXONOMY GROUPS PERFORMING ARTS PROPERTIES

Reference

en ca da de el es fr hu

dc.Title:
DSI DISIT in trouble for the snow ! By: root

dc.Creator:
paolo By: root

dc.Description:
DSI DISIT in trouble for the snow !
Do not be afraid, everithing will be
fine for the verification meeting of By: root

dc.Subject:
DSI DISIT in trouble for the snow ! By: root

dc.Publisher:
DISIT By: root

dc.Contributor:
paolo By: root

Changes

en ca da de el es fr hu

dc.Title:
DSI DISIT in Schwierigkeiten für
den Schnee!

dc.Creator:

dc.Description:
DSI DISIT in Schwierigkeiten für
den Schnee!
 Haben Sie
keine Angst, everithing wird gut für:

dc.Subject:
DSI DISIT in Schwierigkeiten für
den Schnee!

dc.Publisher:

dc.Contributor:

- **Indexing & Search system**
 - Based on Apache Solr
- **Multilingual aspects**
 - Translate the metadata or translate the query?
 - We use metadata translation
- **Indexing schema**
 - Dublin Core + DCTerms (multi language)
 - Performing Arts
 - Technical (provider, content type, GPS, IPR, duration, quality, ...)
 - Groups associations (multi language)
 - Taxonomy associations (multi language)
 - Comments & multi language tags
 - FullText of the textual digital resources

Indexing

Media Type	DC (ML)	Tech	Perf. Arts	Full Text	Taxnmy, Group (ML)	Comment, Tags (ML)	Votes
Audio/Video/ Image	Y	Y	Y		Y	Y	Y
Document (pdf, doc, ...)	Y	Y	Y	Y	Y	Y	Y
CrossMedia (html, MPEG21,...)	Y	Y	Y	Y	Y	Y	Y
Aggregations (playlist, collection, ...)	Y	Y	Y		Y	Y	Y
Info text (blog, web pages, forum, events, ...)	(Y)			Y		Y	

Sort by Relevance Sort by Upload Sort by Update

SEARCH RESULTS

(1-10 of 210 in 336 ms)



Il Comico, Seminario di Dario Fo g.1/2

Colore Stereo Seconda parte della prima giornata. Dario Fo racconta la storia della "Parpaja topola" e recita un brano del racconto. Ferruccio Marotti fa una domanda sull'uso del ...

0 Hits Rating ★★★★★

Relevance 88.23



Il Comico, Seminario di Dario Fo g.1/1

Colore Stereo Ferruccio Marotti introduce il terzo ciclo di seminari sul comico (dopo quelli con Alberto Sordi e con Roberto Benigni), dedicato a Dario Fo. Partecipa Maurizio Grande e Franca Rame.

0 Hits Rating ★★★★★

Relevance 88.2



Il Comico, Seminario di Dario Fo McA g.2/4 tot

Colore Stereo Seconda parte del secondo seminario di Dario Fo a cura di Ferruccio Marotti (4 febbraio 1985) con la partecipazione di Maurizio Grande e Franca Rame.

0 Hits Rating ★★★★★

Relevance 88.04



Il Comico, Seminario di Dario Fo McB g.2/7 pp

Colore Stereo Seconda e ultima parte della seconda giornata del seminario di Dario Fo sul comico a cura di Ferruccio Marotti (primi piani), con la partecipazione di Maurizio Grande e Franca Rame.

0 Hits Rating ★★★★★

Relevance 88.01



Il Comico, Seminario di Dario Fo McA g.2/5 tot

Colore Stereo Ultima parte della seconda giornata del seminario (4 febbraio 1985). Dario Fo parla delle sue difficoltà con la critica teatrale (end a 00:03:00). Poi immagini di Dario Fo tra gli ...

0 Hits Rating ★★★★★

Relevance 88



Il Comico, Seminario di Dario Fo McB g.2/6 pp

Colore Stereo Inizio della seconda giornata di seminario (4 febbraio 1985). Prima parte del secondo seminario sul comico di Dario Fo, a cura di Ferruccio Marotti, con la partecipazione di ...

0 Hits Rating ★★★★★

Relevance 87.9



Il Comico, Seminario di Dario Fo McA g.2/3 tot

Colore Stereo Prima parte del secondo seminario sul comico di Dario Fo, con la partecipazione di Maurizio Grande e Franca Rame (4 febbraio 1985). Introduzione di Ferruccio Marotti al lavoro ...

0 Hits Rating ★★★★★

Relevance 87.87



Dario Fo e Franca Rame, evento 20 ottobre 2011, live

Dario Fo e Franca Rame, evento 20 ottobre 2011, live

SEARCH FILTER

Resource category

Format

video (210)

Type

Group

Classification - Genre

Classification - Management & Organization

Classification - Performing Arts

Creator

di Franca Rame e Dario Fo (4)

Jean Paul Denizon (3)

Libera Università di Alcatraz (3)

M. Serena, M. Pizza, P. Bellini (2)

Content language

Duration

Long > 20 minutes (141)

Il Comico, Seminario di Dario Fo McB g.2/7 pp

Short < 4 minutes (15)

Video quality available

Device

Published by

Original metadata language

Upload time

EUROPEANA

Search: dario fo

Dario Fo à la Comédie Fra...



Dario Fo;Institut National de l'Audiovisuel

Molière mis en scène par ...



Richard Fontana;Institut National de l'Audiovisuel

Fabnlages obscènes de Dario Fo...

RISULTATI SEACCETTATI

Faceted Results

SEARCH FILTER	
Resource category	◀
Format	▼
+ video (394)	
Type	◀
Group	◀
Classification - Genre	◀
Classification - Management & Organization	◀
Classification - Performing Arts	◀
Creator	▼
+ Dario Fo (30)	▲
+ Ferruccio Di Cori (21)	
+ CTFR (11)	
+ Magyar Televízió (5)	
Content language	◀
Duration	◀
Video quality available	▼
+ Low definition (394)	
+ Medium definition (193)	
+ High definition (7)	
Device	◀
Published by	▼
+ CTFR (206)	
+ CTA-UNIROMA (175)	
+ DSI (8)	
+ OSZMI (5)	
Original metadata language	◀
Upload time	◀

■ Search for:
“dario fo”,
Video

■ 394 results

■ Of which:

■

■ Combining the
filtering

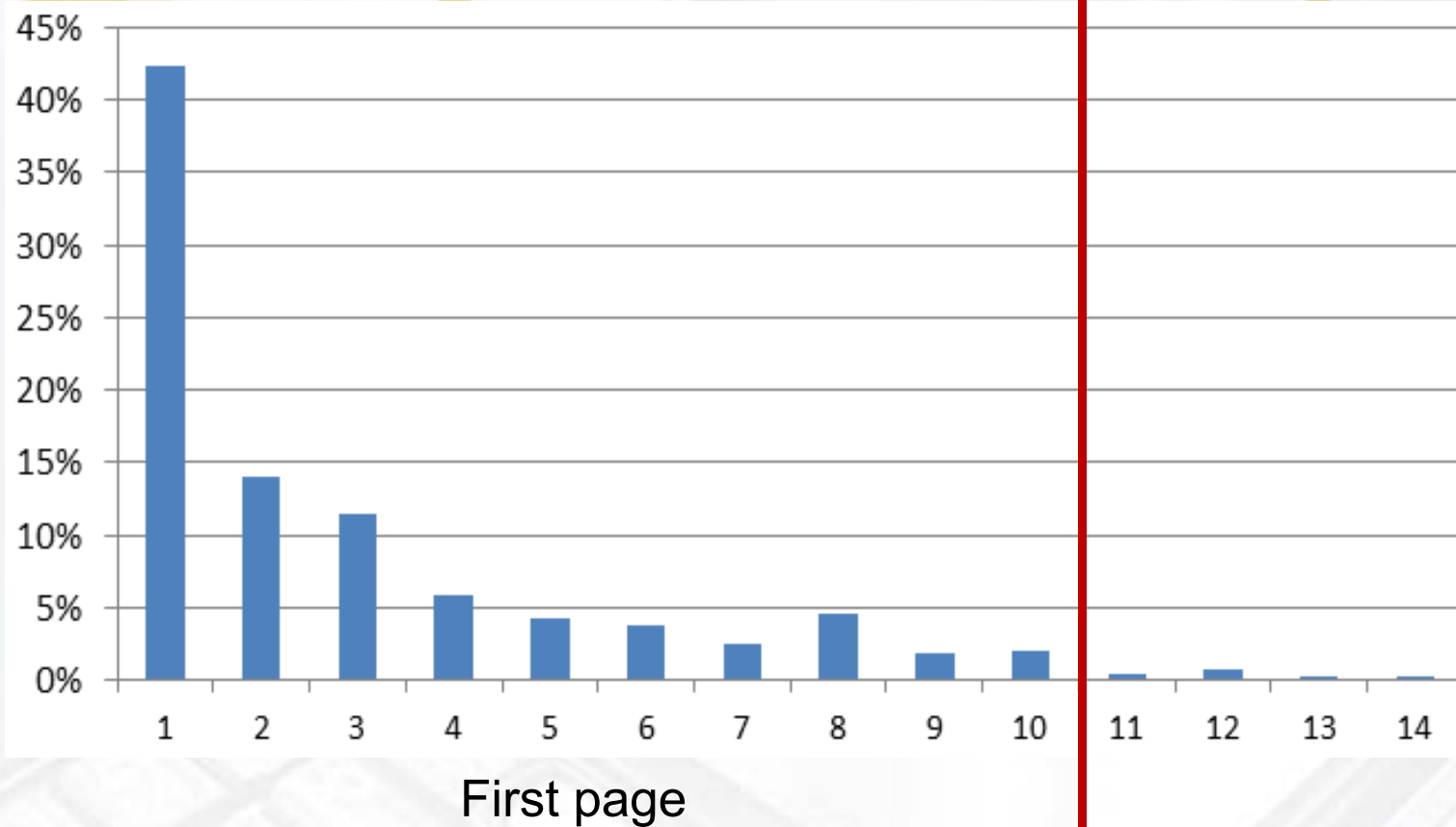
■ 51 results

■ Of which...

SEARCH FILTER	
Resource category	◀
Format	◀
Type	◀
Group	◀
Creator	▼
- Dario Fo (30)	▲
- Ferruccio Di Cori (21)	
+ CTFR (11)	
+ Magyar Televízió (5)	
Content language	◀
Duration	◀
Video quality available	▼
- Low definition (51)	
+ Medium definition (49)	
Device	◀
Published by	▼
+ CTA-UNIROMA (49)	
+ CTFR (2)	
Original metadata language	◀
Upload time	◀

Search Facility Assessment

■ Click order distribution



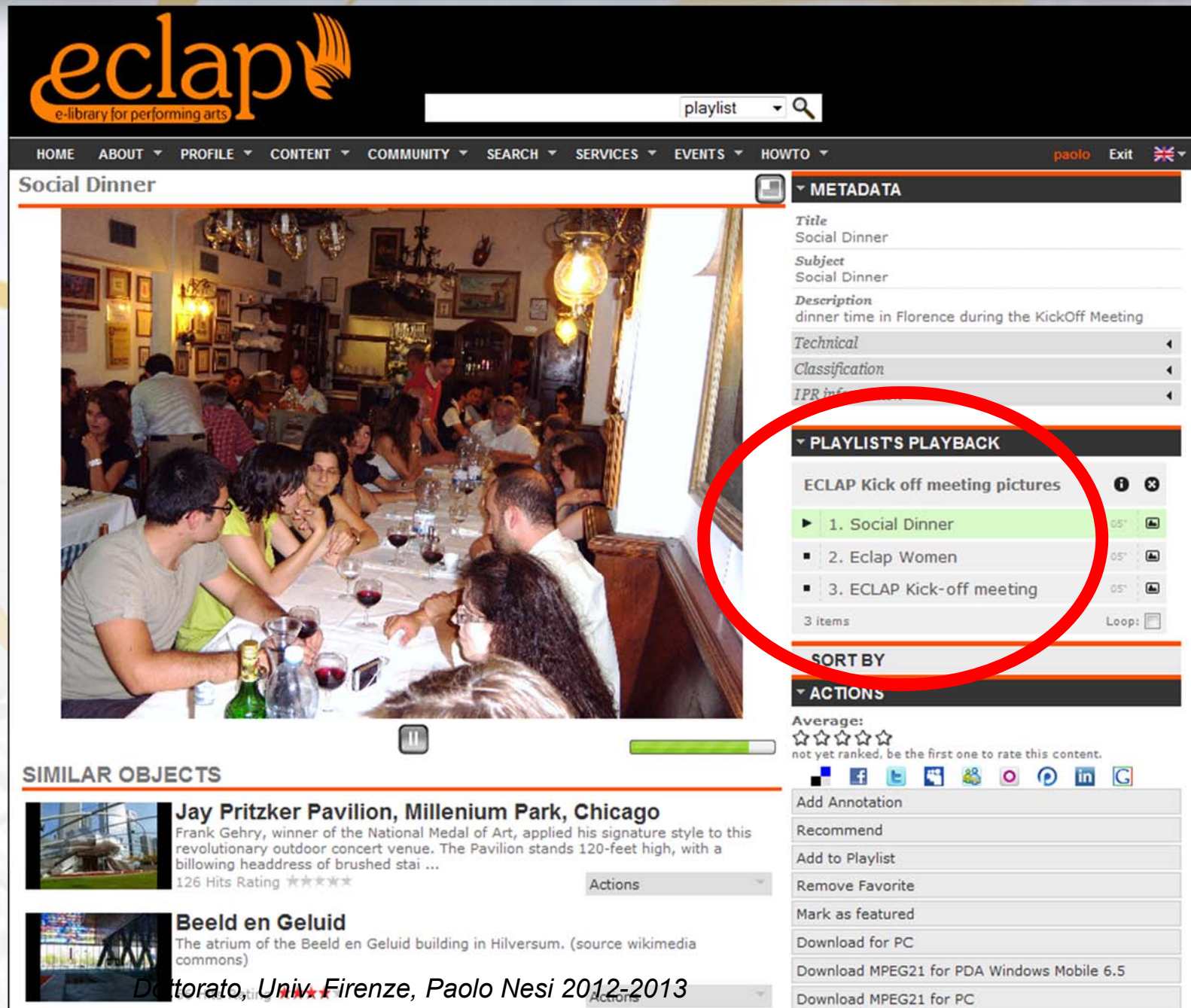
First page

Content Aggregations

Play Lists
Collections
essay
Courses

Without
resource
change

Diff. models
Diff. Semantic
to play them
MD as content



The screenshot shows the eclap website interface. At the top, there is a search bar with the word 'playlist' and a magnifying glass icon. Below the search bar is a navigation menu with items: HOME, ABOUT, PROFILE, CONTENT, COMMUNITY, SEARCH, SERVICES, EVENTS, HOWTO. The user 'paolo' is logged in, with an 'Exit' button and a flag icon.

The main content area is titled 'Social Dinner'. It features a large video player showing a group of people dining in a restaurant. To the right of the video player is a 'METADATA' section with the following information:

- Title:** Social Dinner
- Subject:** Social Dinner
- Description:** dinner time in Florence during the KickOff Meeting
- Technical:** (expandable)
- Classification:** (expandable)
- IPR info:** (expandable)

Below the metadata is a 'PLAYLIST'S PLAYBACK' section, which is circled in red. It contains a list of items:

- ECLAP Kick off meeting pictures (info icon, close icon)
- 1. Social Dinner (05', play icon)
- 2. Eclap Women (05', play icon)
- 3. ECLAP Kick-off meeting (05', play icon)

There are 3 items in the playlist, and a 'Loop' button is visible. Below the playlist is a 'SORT BY' section and an 'ACTIONS' section. The 'ACTIONS' section includes options like 'Add Annotation', 'Recommend', 'Add to Playlist', 'Remove Favorite', 'Mark as featured', 'Download for PC', 'Download MPEG21 for PDA Windows Mobile 6.5', and 'Download MPEG21 for PC'. There is also a rating section with the text 'Average: ☆☆☆☆☆ not yet ranked, be the first one to rate this content.' and social media sharing icons.

At the bottom of the page, there is a 'SIMILAR OBJECTS' section with two items:

- Jay Pritzker Pavilion, Millenium Park, Chicago**
Frank Gehry, winner of the National Medal of Art, applied his signature style to this revolutionary outdoor concert venue. The Pavilion stands 120-feet high, with a billowing headdress of brushed stai ...
126 Hits Rating ★★★★★
- Beeld en Geluid**
The atrium of the Beeld en Geluid building in Hilversum. (source wikimedia commons)

At the very bottom, there is a footer with the text 'Dottorato, Univ. Firenze, Paolo Nesi 2012-2013' and a logo for 'ICTPSP'.

Play List and Collectios

■ Playlist

- Sequence of segments of videos and/or audio and images kept for a time duration
- They are show/played in sequence (the images have an associated duration imposed by the creator)

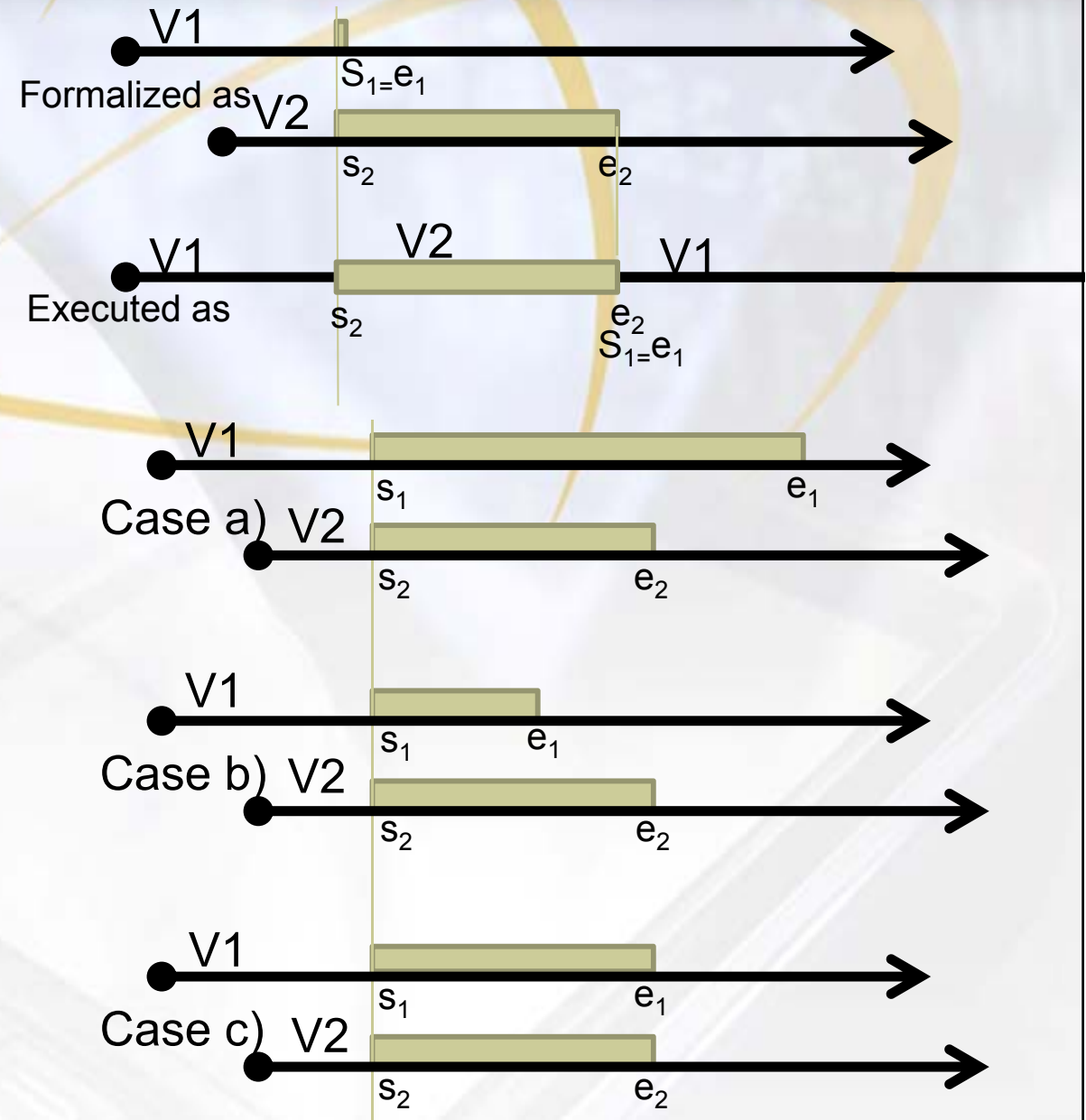
■ Collection

- A set of content (audio/video/images, docs, playlist, animations, 3D, etc., any kind)
- They can be downloaded from mobile content organizer

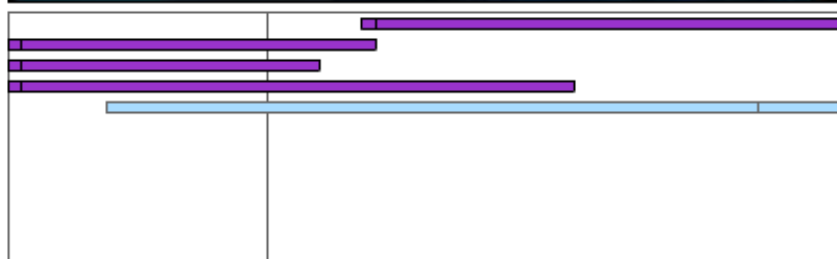
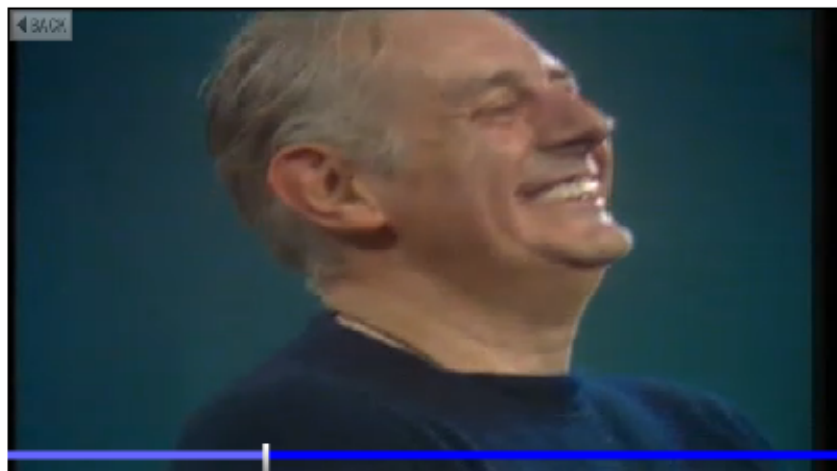
- **Playlists/Collections** have their specific metadata which are indexed as regular content

Relazioni fra media

- Sincronizzazioni
- Sequenze
- Dirette
- Esplosive



MYSTORYPLAYER



Annotation info

Dario Fo dirige il coro delle risate

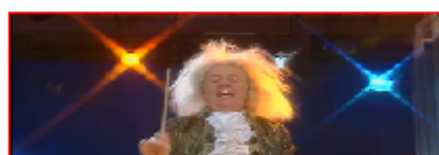
Start-end: 00:00:07 - 00:00:59

Duration: 00:00:52

Choose amongst these classifications:



Dario Fo dinanzi al pubblico della Palaz



SEARCH FOR ANNOTATIONS

Description contains:

Classification:

Refers to:

SEARCH FOR EXPERIENCES

SEARCH RESULTS

Found 79 annotations in 57 video

Image A kopasz énekesnő

Video you PARA | DISO

- 00:00:00-00:00:13 this is a dance performance
- 00:00:01-00:06:17.7 this is a test annotation
- 00:00:01-00:06:17.7 annotation video on video
- 00:00:01-00:06:17.7 you paradiso and europeana presentation reproduced synchronously
- 00:00:01-00:06:17.7 this is a dance performance
- 00:00:02-00:04:17 you paradiso and Richard Schechner about performing arts
- 00:00:04-00:00:35 test annotation
- 00:00:11-00:06:17.7 no description
- 00:00:31-00:01:31 dancers
- 00:00:40-00:01:56 no description

Video Trasmissione forzata II

- **User may**
 - **Navigate** on the *non linear* relationships defined by the several audio visual annotations
 - **Record/play** its experience in navigating on the non linear relationships defined by the several annotations
 - **Share** the Experiences to other users
 - **Perform semantic queries**

- **User may annotate** the audiovisual content with
 - Audio Visual annotations, taking segments
 - Textual annotations
 - Semantic annotations/relationships

Networks of Annotations

- <http://www.eclap.eu/drupal/?q=en-US/msp&axoid=urn%3Aaxmedis%3A00000%3Aobj%3A04e0caef-b33b-4f4a-ba50-a80d96766192&axMd=1&axHd=1>

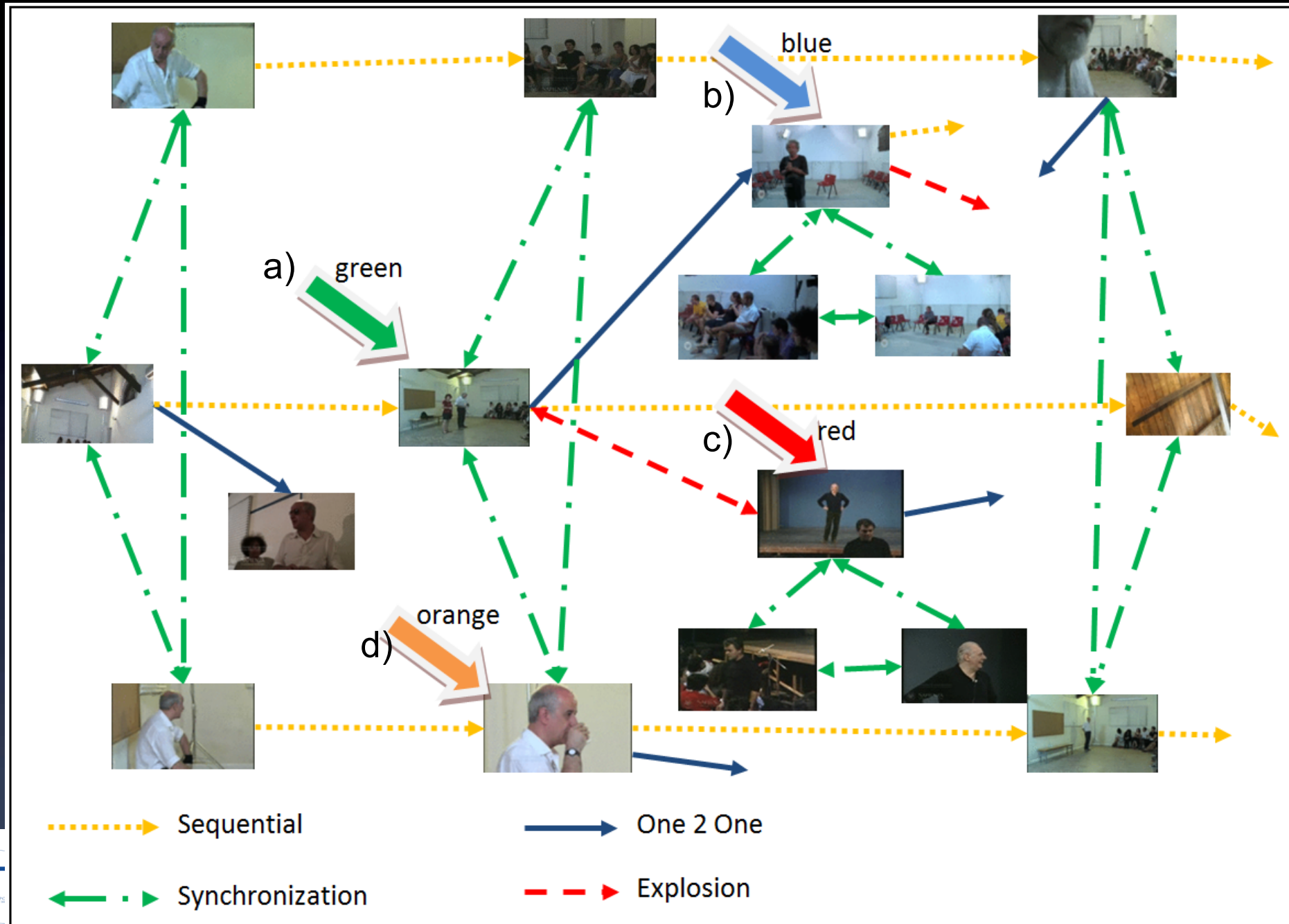
MYSTORYPLAYER

Watch Your Step - Episode 1-Size of Movement

video

Annotation info
annotation video on video
Start-end: 00:00:01 - 00:06:17
Duration: 00:06:16

Modeling relationships



MYSTORYPLAYER

Annotation info
toni servillo sincronizzazione giorno 2 parte 2
 Start-end: 00:00:01 - 01:01:25
 Duration: 01:01:24

Choose amongst these classifications:
 theatre

(a)

MYSTORYPLAYER

Annotation info
sincro
 Start-end: 00:00:01 - 00:06:08
 Duration: 00:06:07

Choose amongst these classifications:
 theatre unspecified

(b)

MYSTORYPLAYER

Annotation info
paolo rossi giorno 1 sincronizzazione parte 3
 Start-end: 00:00:01 - 00:42:22
 Duration: 00:42:21

Choose amongst these classifications:
 unspecified theatre

Paolo Rossi: Stage di tecniche d'attore Mc. g.1 Centr. /3

(c)

MYSTORYPLAYER

Annotation info
direct annotation from servillo to dario fo
 Start-end: 00:16:29 - 00:44:32
 Duration: 00:28:03

Choose amongst these classifications:
 unspecified theatre

(d)

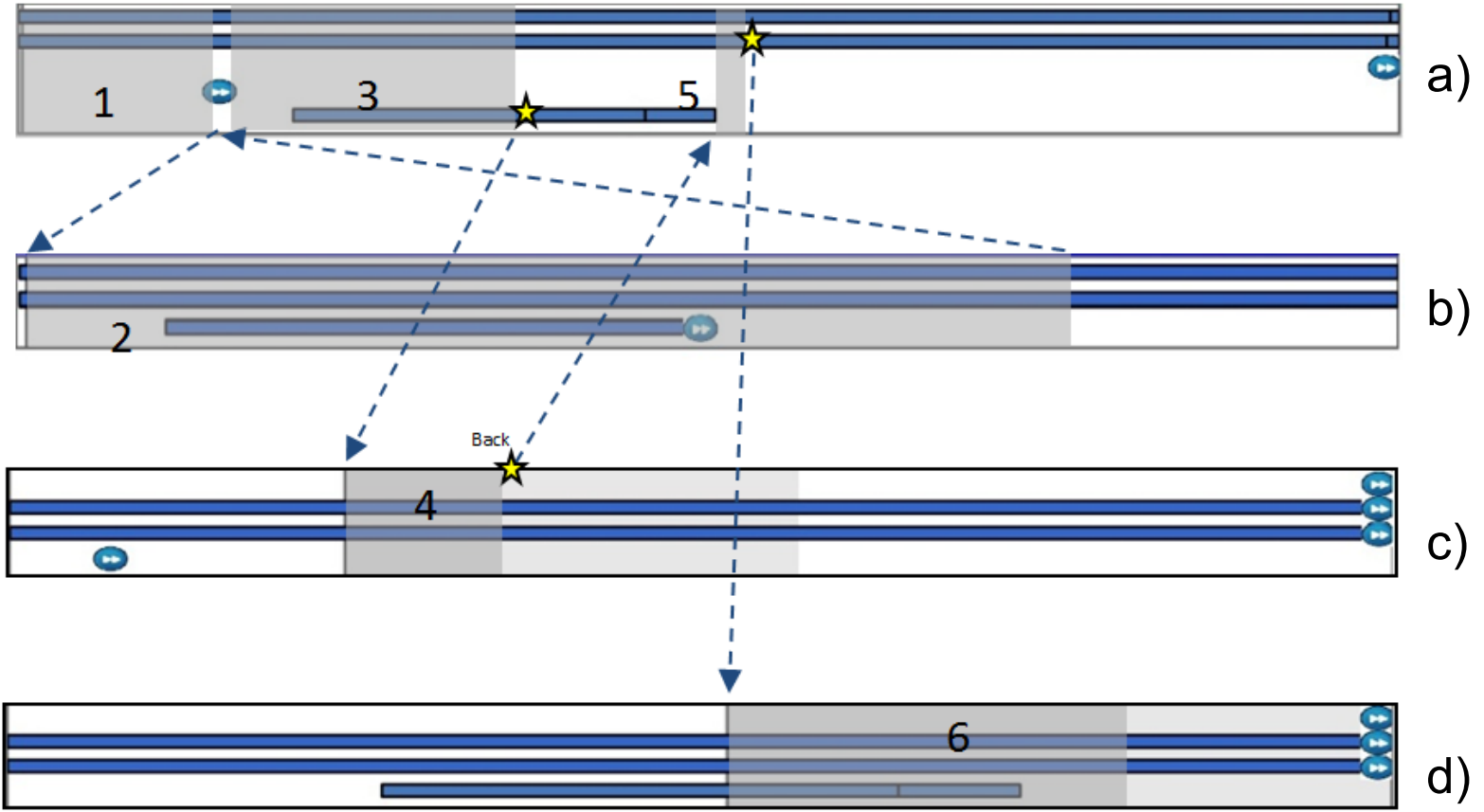
Navigating on media: a,b,c,d

Servillo: Stage di
Tecniche d'attore Mc
a 2 centr a 2 dx/2

Il primo miracolo di
Gesù Bambino:
camera frontale

Paolo Rossi: stage di
tecniche d'attore
MC a 1 dx/3

Servillo: Stage di
Tecniche d'attore Mc
a 2 sx/2



★ click of the user

▼ MEDIA RELATIONSHIP

Laboratorio con Toni Servillo_g.1, centr/1

Use 'Add Media Relationship' to put another content in relation with the first content.

Text Description:

Choose a class of annotation:

Select Relationship Type:

Synchro , Sequential , Explosive , One2One

Filter by type:

Audio , Video , Image All Types

Suggested Contents to relate:

- Servillo: Stage di Tecniche d'attore Mc g.1 centr/1 Mc g.1 dx/4 video
- Servillo: Stage di tecniche d'attore Mc g.1 centr/1 video
- Laboratorio con Toni Servillo_g.1, sx/1 video
- Laboratorio con Toni Servillo_g.1 dx/1 video
- Servillo: Stage di Tecniche d'attore Mc g.5 centr/1 video
- Servillo: Stage di Tecniche d'attore Mc g.4 centr/1 video
- Servillo: Stage di Tecniche d'attore Mc g.3 centr/1 video
- Servillo: Stage di Tecniche d'attore Mc g.2 centr/1 video
- Servillo: Stage di Tecniche d'attore Mc g.1 sx/4 video
- Servillo: Stage di Tecniche d'attore Mc g.1 centr/1 video

Discard

Save

▼ MEDIA RELATIONSHIP

Laboratorio con Toni Servillo_g.1, centr/1

Laboratorio con Toni Servillo_g.1, sx/1

Laboratorio con Toni Servillo_g.1 dx/1

Use 'Add Media Relationship' to put another content in relation with the first content.

Text Description:

Choose a class of annotation:

Select Relationship Type:

Synchro , Sequential , Explosive , One2One

Filter by type:

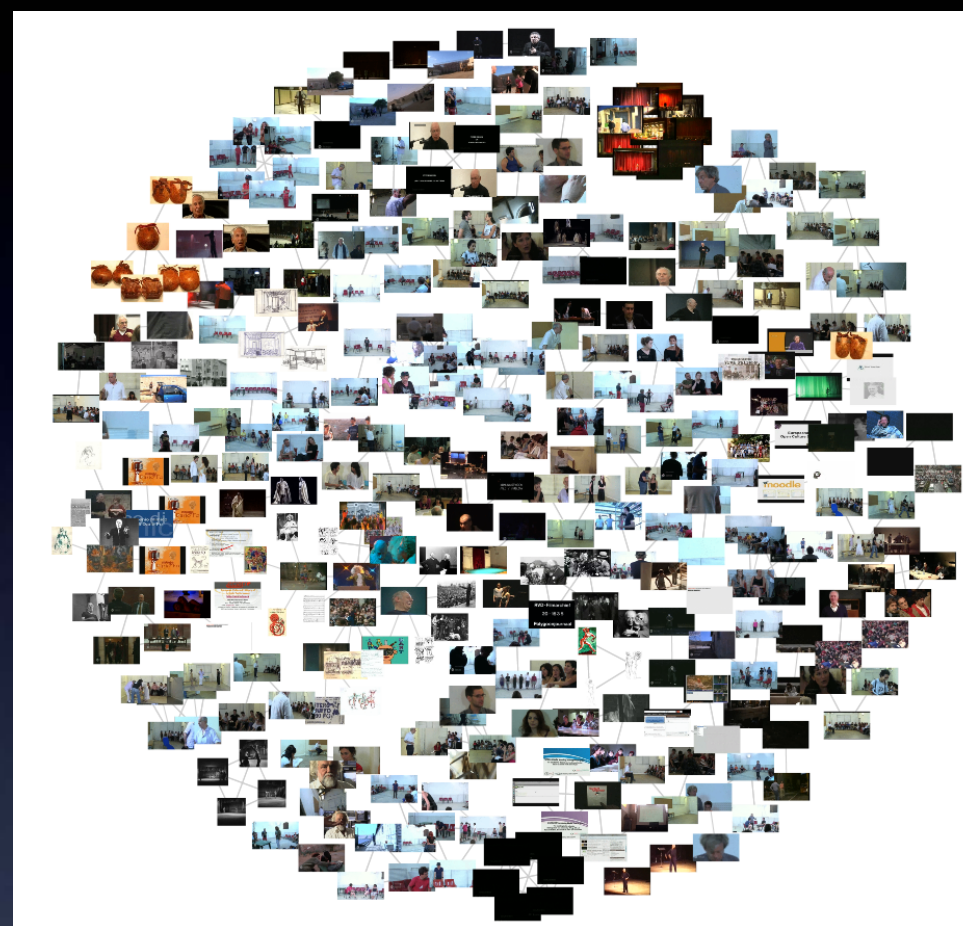
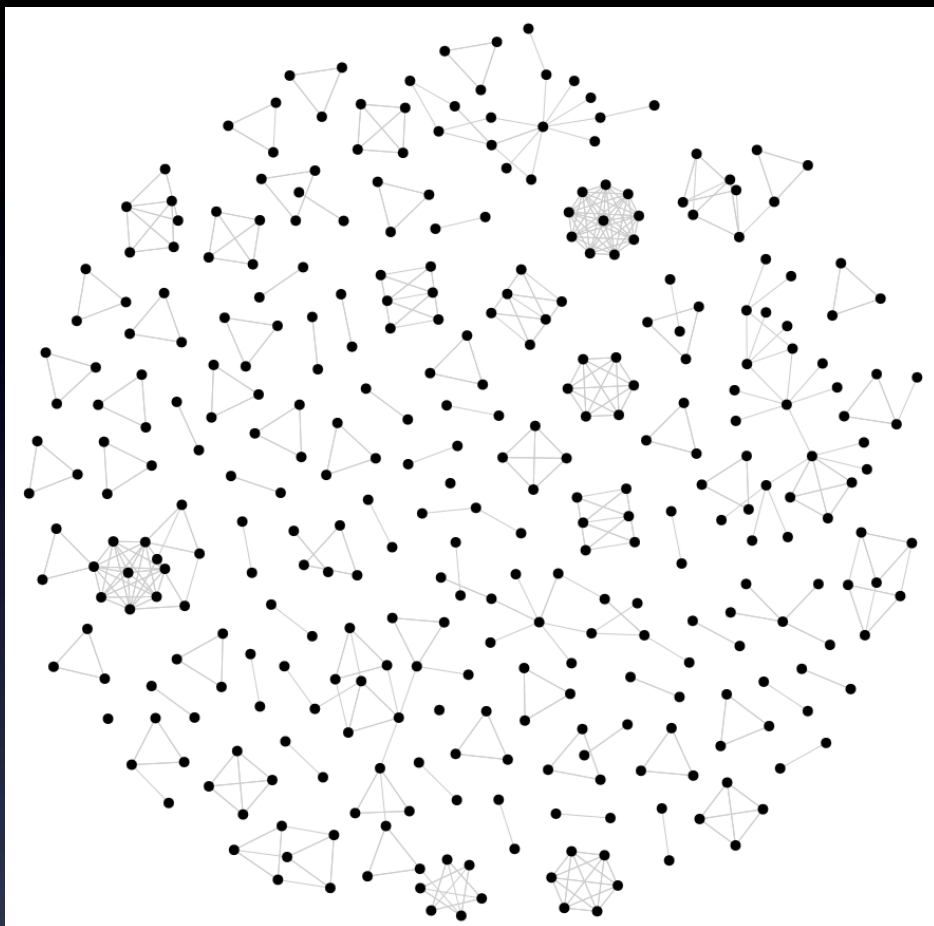
Audio , Video , Image All Types

Suggested Contents to relate:

- Servillo: Stage di Tecniche d'attore Mc g.1 centr/1 Mc g.1 dx/4 video
- Servillo: Stage di tecniche d'attore Mc g.1 centr/1 video
- Laboratorio con Toni Servillo_g.1, sx/1 video
- Laboratorio con Toni Servillo_g.1 dx/1 video
- Servillo: Stage di Tecniche d'attore Mc g.5 centr/1 video
- Servillo: Stage di Tecniche d'attore Mc g.4 centr/1 video
- Servillo: Stage di Tecniche d'attore Mc g.3 centr/1 video
- Servillo: Stage di Tecniche d'attore Mc g.2 centr/1 video



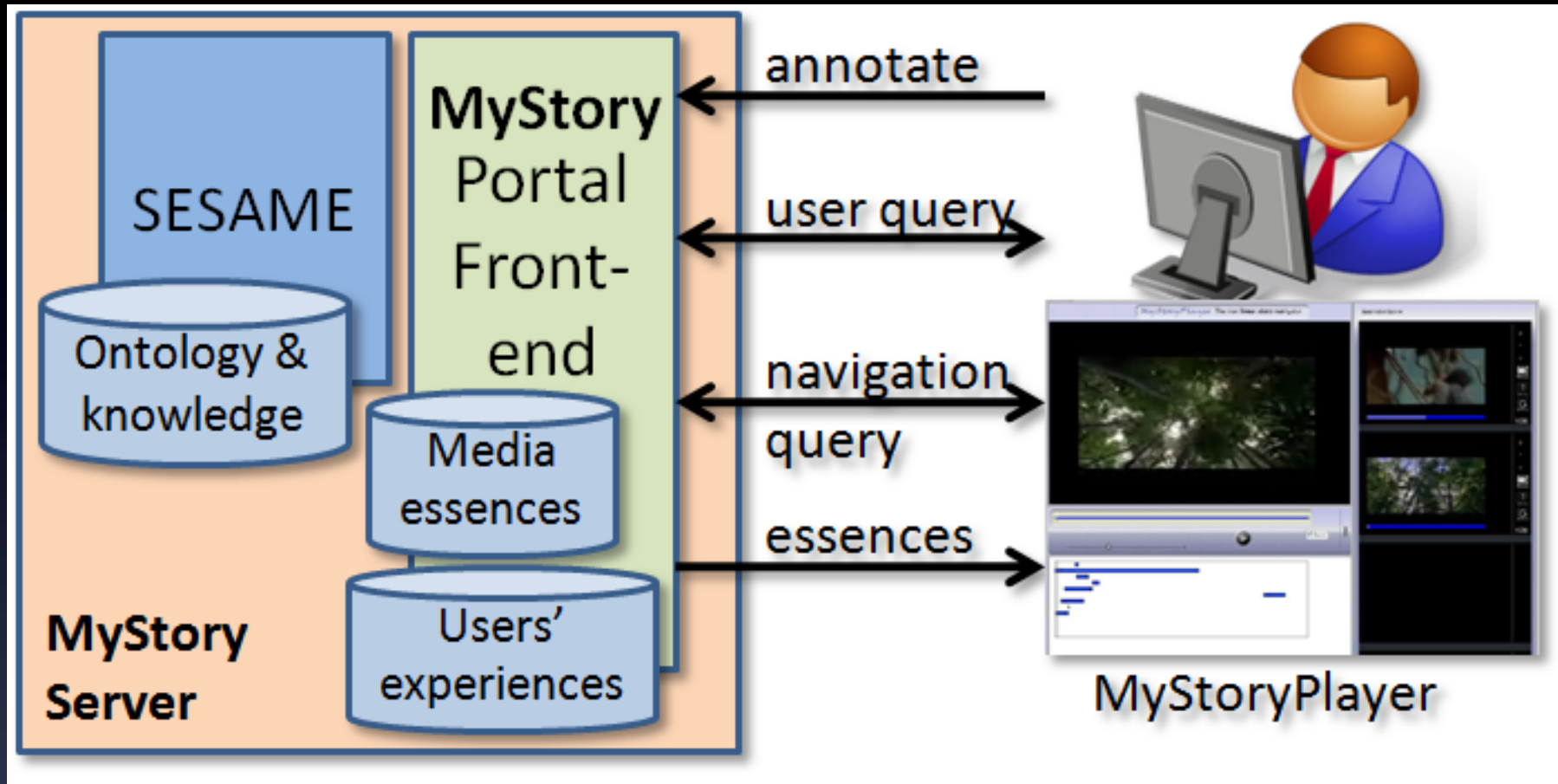
Network of Relationships



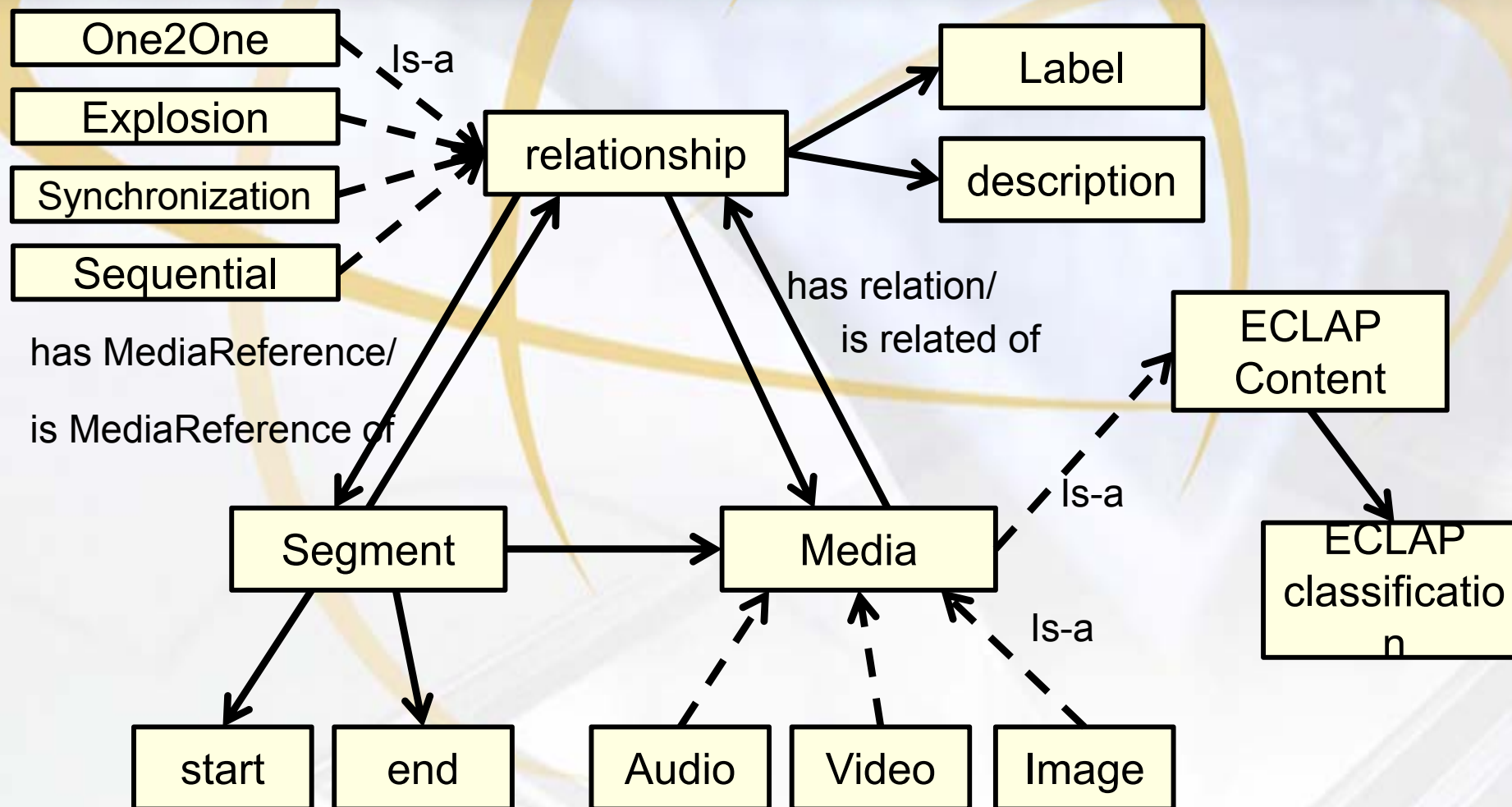
<http://www.eclap.eu/d3/graph.html>

<http://www.eclap.eu/d3/graph2.html>

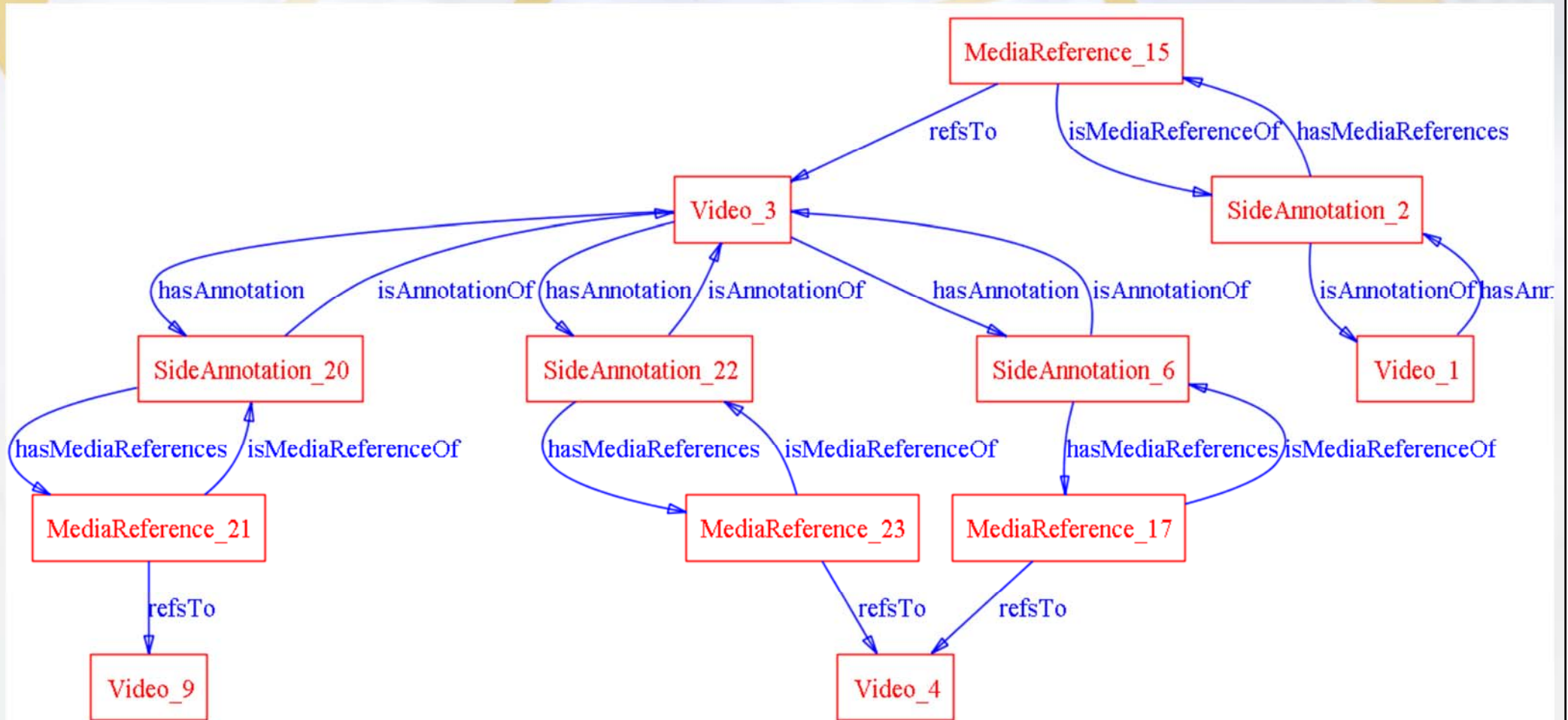
MyStoryPlayer Architecture



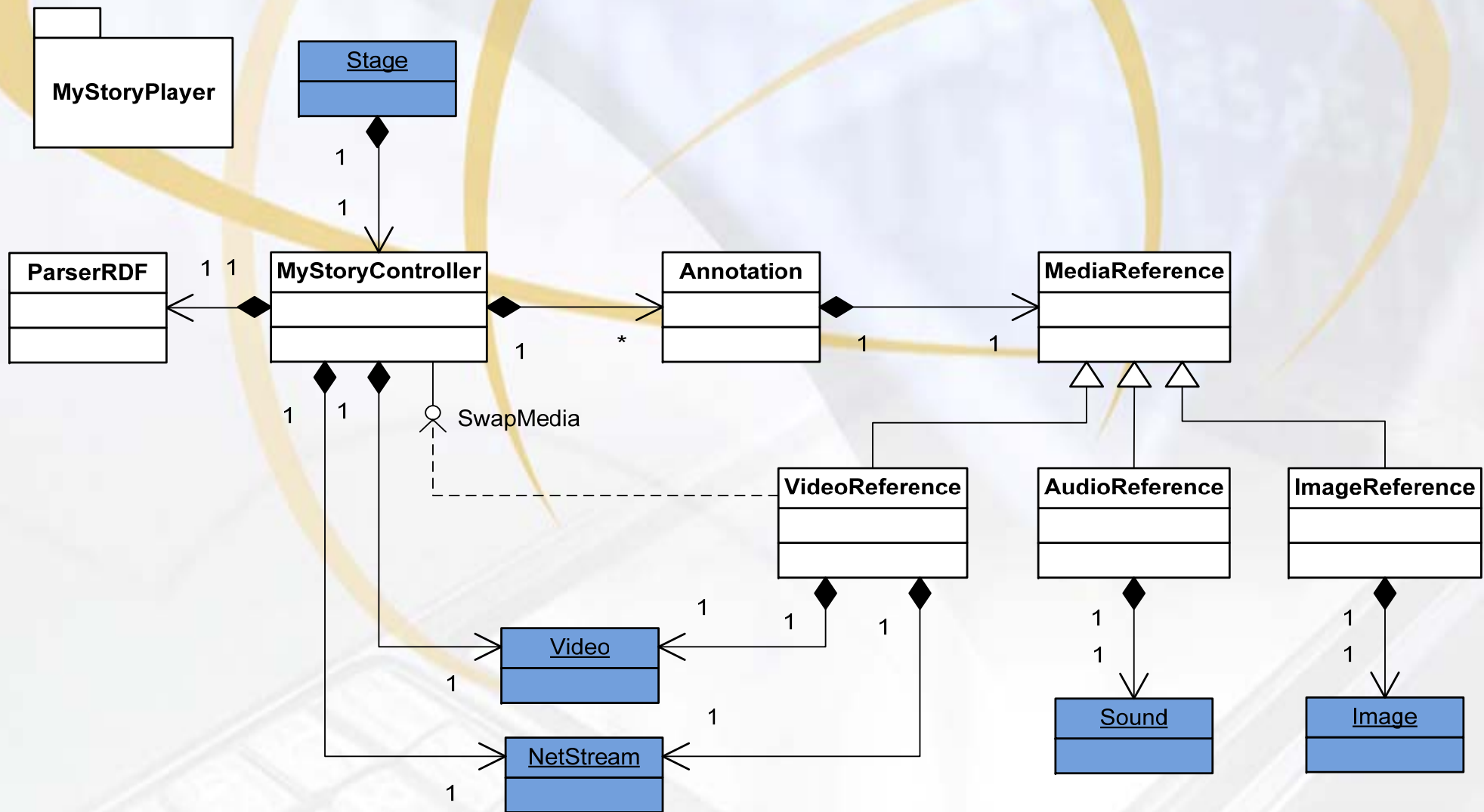
Modello Semantico MSP



An instance of an annotation



Class diagram of MyStoryPlayer



MyStoryPlayer Annotations

- **Audio/Video/Image on Video/Audio/image**
- Annotated text
- Annotated contextual information
 - Who is present in the scene
 - Where is the scene
 - Which objects are present in the scene
 - When the scene happened in its timeline
 - When happened in the Real Historical Time

MyStoryPlayer Info

Search for video annotations:

Place:	Beach		
Character:	Charlie	+	-
Character:	Hugo	+	-
Character:	undefined	+	-
Object:	Gun	+	-
Object:	Plane	+	-
SceneDate	after	Crash-24/09/2004	
Refers to:	Video		

Search Annotations

Annotation info

Scene description: Jack wake up in the forest and goes to the beach...
Start-end: 00:01:30 - 00:06:00
Duration: 00:04:30
Place: Beach
Who is present: Jack
Scene Date: Monster-01/10/2004
Objects in the scene: Tree Plane
Type: SideAnnotation
URI : Annotation_10


Video reference info

Title: Lost Pilot - Part 1
Reference starts at: 00:14:00
Reference ends at: 00:18:00
Reference duration: 00:04:00
Video URL: lost_s01_e01.flv

- RDF database, Ontological model
- Query via SPARQL on a semantic database with inferential engine.

- Substantially one may request for example:
 - Provide annotations/media in which Jack and Kate are on the beach
 - Provide any scene in which there is gun
 - Provide all scene after event crash
 - Who wrote on scenes located in the forest
 -

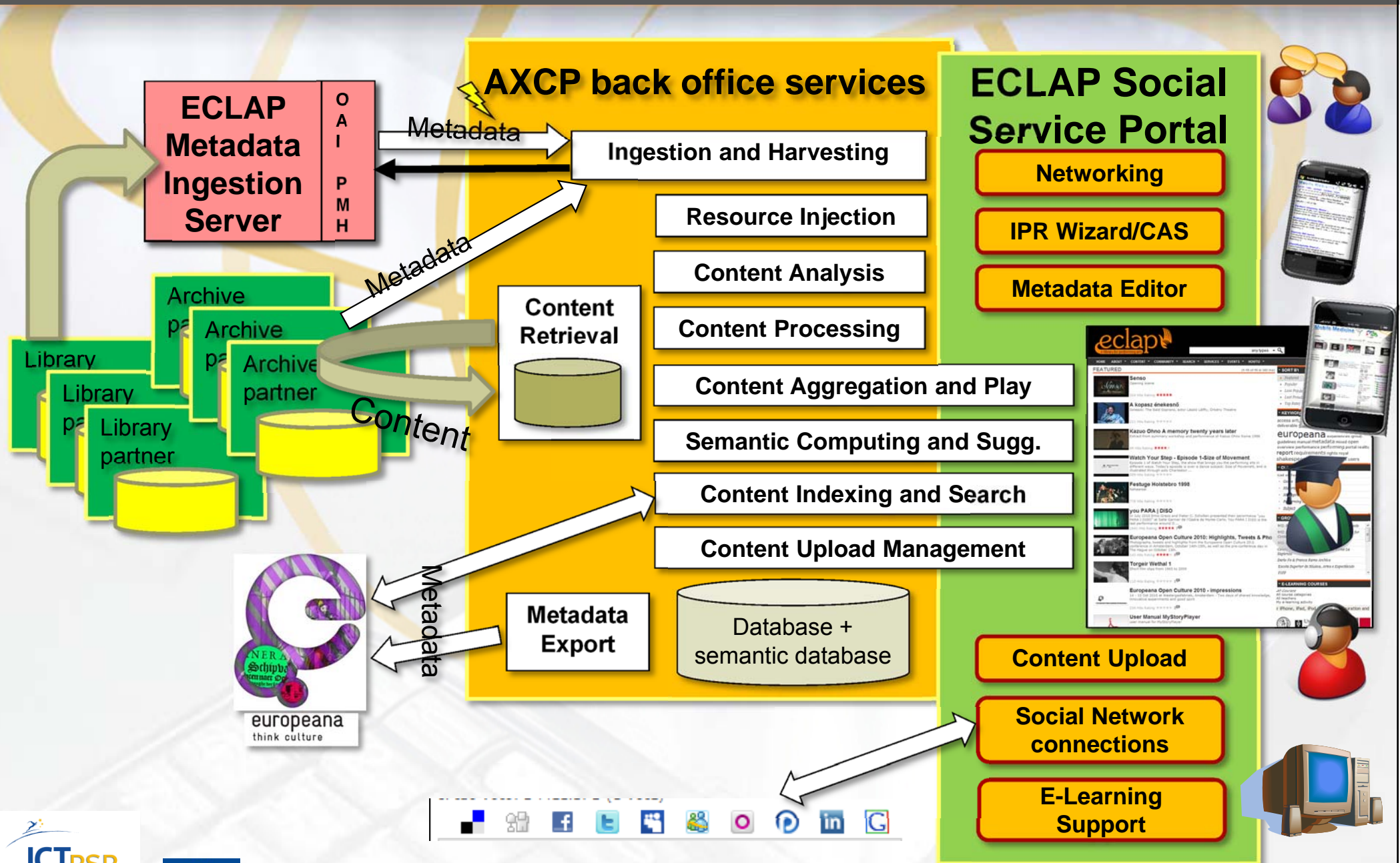
Agenda Overview

- Objective and overview
- Networking & Tools
- Content & Tools
- ECLAP Architecture 
- Comparison with other Social Networks

ECLAP Architecture

- Functional Architecture
- Automated back office
- Deploy of Services
- Content upload and Ingestion
- Content Workflow
- Content Manager for groups
- IPR Process management
- Content on Mobiles
- Semantic information flow from back to front and viceversa
- Content Organizer

Architecture and Back-office



Automated BackOffice

- Based on AXCP Semantic Media Grid (IEEE Multimedia)
 - More than 10.000 files per day
- To automate:
 - **Content ingestion** from more than 35 archives/portals, metadata and content crawling, massive content ingestion
 - **Metadata transcoding** and enrichment: from any format to ECLAP ingestion format, saving and mapping all metadata
 - **Content indexing**: 650 metadata, 13 languages, cross media content, algorithms for CBIR
 - **Content adaptation**: for PC, Mobile, etc. → over than 500 media types
 - **Suggestions** and recommendations production: by text, by images, by profiles; U→U, C→U, C→C, ..
 - **Production of profiled newsletters**
 - **Assessment** of metadata quality
 - **Publication** of metadata towards Europeana
 - Export to other Social Networks
 - Etc.

↑ Requests to WS from:
 -Service Portals
 -Higher level grids
 -Workflow Management Systems

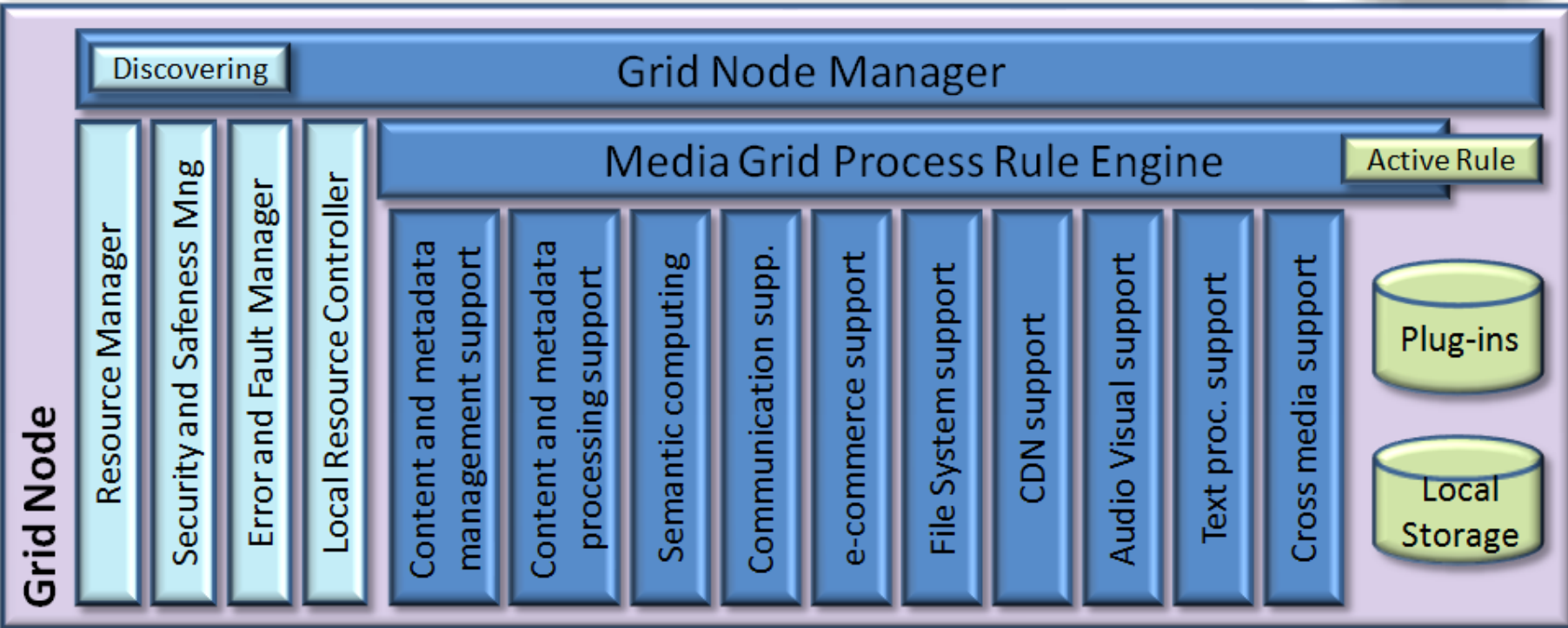


Integrated Development Environment

Plug-ins, Rules

Security Error Mng **Requests Manager** Requests Buffer

Discovering Error Mng **Grid Scheduler** Negotiation Schedule Rule Database



Industrial computers



PCs



Storage



databases

↑ Channels:
 WS, FTP,
 lower level grids

↕ Playout,
 front-end servers

↕ Content
 Delivering Networks

Comparison: Micro GRID for media

IEEE Multimedia 2012



	AXMEDIS	MMGRID	MediaGrid	GridCast	MediaGrid.or g	Omneon MediaGrid
Content Management: storage, UGC, ..	X		(x)	(x)	X	X
Content computing/processing: adaptation, processing conversion, cross media content packaging, ..	X		(x)	(x)	(x)	X
Content Delivery Network Management	X	X	X	X	X	
Metadata enrichment and reasoning	X					
Content Protection Management (CAS/DRM)	X					
Content Indexing and Querying, knowledge base	X			X		X
Semantic Computing Reasoning on user profiling, content descriptors, recommendations	X					
User Interaction Support, rendering, collaboration	X	X			X	
Client player as grid nodes for intelligent content	X					
Global and/or Local grid	L/(G)	G	G	G	G/L	L

Content Management/Group



Wall Edit Who online Members Blog Pages Objects Forum Broadcast

List Manage Objects

GENERAL MANAGEMENT

Hidden Workflow type Void content Published in Europeana IPR model type
 IPR model applied Published by WF state

Actions
 Select the action you want to apply to the selected objects:
 Set to hidden
 Additional IPR Information
 Additional Taxonomy Information

- <Any>
- Uploaded
- Under-Enrichment
- Under-IPR
- Under-AXCP
- Under-Validation
- Under-Approval
- Published

<input type="checkbox"/>	Contento	hidden	WF type	Void content	Published in Europeana	IPR model applied	IPR model type	Published by	WF state
<input type="checkbox"/>	SOFA score	not hidden	ECLAP	not void	not published	Public-as-it-is	public	AXMEDIS Cross Media Finder (Incoherent)	Uploaded
<input type="checkbox"/>	APACHE 2 score	not hidden	ECLAP	not void	not published	None	NONE	AXMEDIS Cross Media Finder (Incoherent)	Uploaded
<input type="checkbox"/>	Theatre curtain	not hidden	ECLAP	not void	not published	Public-as-it-is	public	AXMEDIS Cross Media Finder (Incoherent)	Uploaded

CONTENT

ORGANIZE PERSONAL COLLECTION

Select resources to add to collections

Festuge Holstebro 1998 X
 Vertigo Bird (excerpt from dance film) X

- ### My published personal collections
- ▶ europeana documents
 - ▶ Ipaddemo
 - + New collection

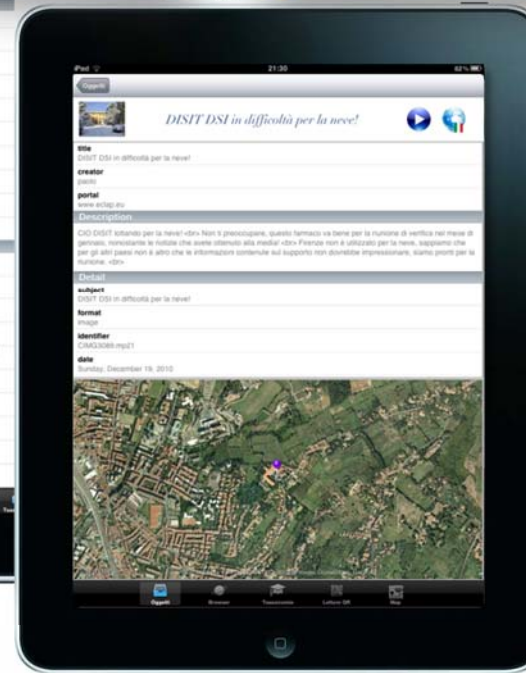
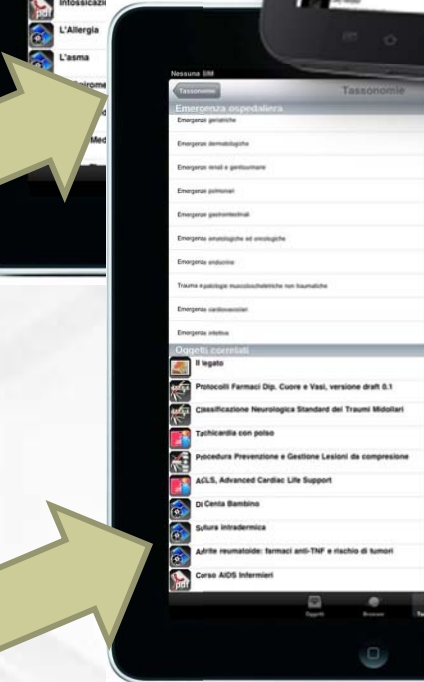
- ▶ ROOT
- ▶ KEYWORD CLOUD
- ▶ QUERY CLOUD
- ▶ CLASSIFICATION
- ▶ GROUPS
- ▶ STATISTICS ON YOUR ACTIVITIES
- ▶ STATISTICS ON YOUR GROUPS
- ▶ STATISTICS ON DOWNLOADS
- ▶ STATISTICS ON QUERIES
- ▶ STATISTICS ON ACTIONS
- ▶ SOCIAL NETWORK ANALYSIS

Analysis of User Eccentricity
 Analysis of User Betweenness
 Analysis of Users' Connections

Content Organizer on mobiles

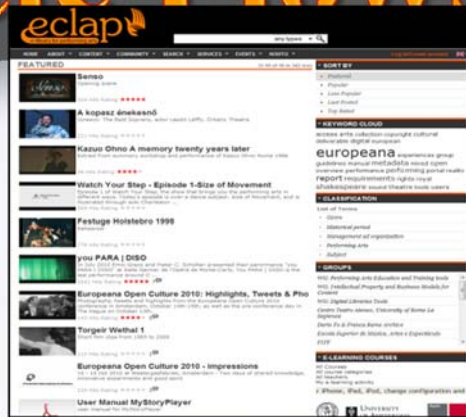
Local:

- Content collection
- Search/query
- Navigations.. taxonomy
- Suggestions



Available on the App Store

Semantic Flows



- AXCP backoffice**
- Grid Scheduler
 - Grid Node
 - Grid Node
 - Grid Node



- Rule based system
- Automated formatting
 - Inferential engine processing
 - Adaptation
 - enrichment
- Multilingual index and search
 - Text Analysers
 - Indexer
 - Fuzzy search

- User Profile
- Dynamic User Profile
 - User behavior
 - Use data
- Content
 - DC+IDs
 - AXInfo: ver, prod., rights,...
 - Descriptors
- Groups: users, content..
- Ontology/Taxonomy Domain

- Local User Profile
- Local Dynamic User Profile
 - Local User behavior
 - Local Use data
- Content
 - DC+IDs
 - AXInfo: ver, prod, rights,
 - Descriptors
- Groups
- Taxonomy classification

contributions, actions on content, social actions, preferences, queries, use data,...

- Suggestions
 - Similarity distances
 - Clustering

- Suggestions on the basis of:
 - Static and dynamic user profile, descriptors, domain

Content Organiser

- Local Suggestions on the basis of user profiles, local content, local collected data




AXCP BackOffice

Front End Portal

Content Organizer and Players Users

Agenda Overview

- Objective and overview
 - Networking & Tools
 - Content & Tools
 - ECLAP Architecture
 - Comparison with other Social Networks
- 
- A large, thick red arrow points from the right side of the slide towards the text "Comparison with other Social Networks", highlighting it as the current or next topic.

SN Comparison on Users

	YouTube	Flickr	FaceBook	LikedIn	MySpace	ECLAP
User profile, descriptors	Y	Y	Y	Y	Y	Y
Friends	Y	Y	Y	Y	Y	Y
Query on Users			Y	Y	Y	Y
Groups and Forums	Y	Y	Y	Y	Y	Y
Multilingual pages	Y	Y	Y	Y	Y	Y
Invitations of users	Y	Y	Y	Y	Y	Y
Chats, on line, messages	Y	Y	Y	Y	Y	N
Recommendation U→U	N	N	Y	Y	Y	Y
Recommendation G→U	N	N	N	Y		N
User Relevance, User,Obj,Group	Y(UO)	Y(OG)	Y(UG)	Y(UG)	Y(UG)	Y
User Lists, gen rec. of users	Y	N	Y	Y	Y	Y(G)
Taxonomy on Users	N	N	N	N	N	Y
Direct call, SMS, Email	Y	Y	Y	Y	Y	Y(SE)
Privacy support, Black List users	Y	N	Y	Y	Y	Y
Events	N	N	Y	Y	Y	Y
E-learning	N	N	N	N	N	Y

SN Comparison on Content



	YouTube	Flickr	FaceBook	LinkedIn	MySpace	ECLAP
Multimedia, crossmedia UGC	Y(M)	Y(M)	Y(M)	N	N	Y(MC)
Audio, Video, Images, Doc	V	I, V	I, D, V	I, D	I, V	A,V,I,D
Moderated UGC	Y	N			N	Y and N
Query on content	Y	Y	N	N	Y	Y
Comments on Content	Y	Y	--	--	Y	Y
Ranking and voting	Y	N	--	--	Y	Y
General Recommendation O	Y	Y	Y	Y	Y	Y
Recommendation O→U	Y	Y	--	--	Y	Y
Recommendation O→O	Y	N	--	--	N	Y
Taxonomy for content/profile	N	N	N	N	N	Y
Play Lists of content	Y	N	N	N	N	Y
Collection	N	N	N	N	N	Y
RSS Feeds for content	Y	Y	Y	Y	Y	N
Links with other SN	Y	Y	Y	Y	Y	Y
Mobile Support	Y	Y	Y	Y	Y	Y
DRM/CAS Support	Y(D)	N	N	N	N	Y (D)
GeoTagging	Y	Y	N	N	N	Y

SN Interoperability

	YouTube	Flickr	FaceBook	LikedIn	MySpace	ECLAP
Importing Registrations Single Sign On, SSO	Y	Y	Y	Y	Y	N (Y)
Importing contacts from other SN Searching contact, inviting	Y	Y	Y			Y
Importing contacts from local list Searching contact, inviting				Y		Y
API to provide access content info	Y	Y				N
Open data						Y
Accepting Social Icons posting	Y	Y	Y	Y	Y	N
Producing Links via Social Icons	Y	Y	Y	Y	Y	Y
Exporting Player to be embedded	Y	Y				Y
Allowing Importing Players into local web pages	N	N	Y	Y Slides	Y	Y
Accepting Widget applications	Y	Y	Y	Y	Y	N
Exporting Widget applications	(Y)	(Y)				N
Social Graph	N	N		(Y)		Y
Splash	Y	Y	Y	Y	Y	Y

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Modelli Semantici e Gestione della Conoscenza: Social Network vs Knowledge Management Systems

seminario per il Corso di Dottorato 2013

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