



Effective
Knowledge s.r.l.

Success story

OSIM

Open Space Innovative Mind
(<http://openmind.disit.org>)



PRODUCTION AND MANAGEMENT OF KNOWLEDGE

MAIN FUNCTIONALITIES:

Allows to browse through the sources to extract the key words and key phrases in different languages (Italian/English), to keep track of frequencies, positions, etc.
Handles mixed texts in English and Italian
Identifies the keywords as subjects of sentences
Performs machine translation of terms

Allows you to:

- order the keywords depending on the frequency
- examine the documents that contain the term
- include in blacklist certain terms
- change the language of a term
- generate a list of the most relevant keywords to be used in the subsequent search of competences, on the basis of their specific nature and frequency

situation

It was increasingly felt within the University of Florence, the need for an innovative tool able to index and manage internal expertise and knowledge of the academic structures. A portal on which industries, students and researchers interested could ask questions with the aim to identify the competences in terms of researchers, research groups, courses and departments into the knowledge of University of Florence.

The Effective Knowledge team, with more than 15 years of experience in international research and innovation projects in the field of artificial intelligence, knowledge management, data mining, natural language processing, social collaboration, management and distribution of intelligent contents and social media, has been entrusted with the task of creating a platform capable of providing an interactive mapping, with the possibility to browse and search information about the University staff's skills.

A platform able to analyse and retrieve detailed information that can be used not only as Help Desk or to support everyone who needs information about a particular teacher, or project or Department, or course, but a tool that can manage the entire patrimony of the University's knowledge and relations between people knowledge and structures.

the challenge

Among the challenges:

- ✓ gather and analyze contents of different types and formats (curricula, projects data, publications, web pages of departments, etc.) and make them available in a single platform
- ✓ building an interactive knowledge map, easily navigable and queryable
highlight the relationships between the people, the skills, knowledge and content

our answer

Despite the presence of many systems for developing and managing structured taxonomies and/or SKOS models for a given domain for which small documents set are accessible, the

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production and maintenance of these domain knowledge bases is still a very expensive and time consuming process. Effective Knowledge has developed a platform capable of managing the skills and knowledge organizing them semantically in a knowledge base.

The information was made easily accessible and searchable through a simple semantic search tool that allows to exploit and highlight the relationships between people's skills, knowledge and contents, and provides the results depending on their nature: Users, documents, etc. but also the relationships that they have with each other.

For example: who wrote about a certain topic; who has read it, who uploaded the document; those who have this knowledge in their CV; who Used this technology; what are the derived technologies or concepts.

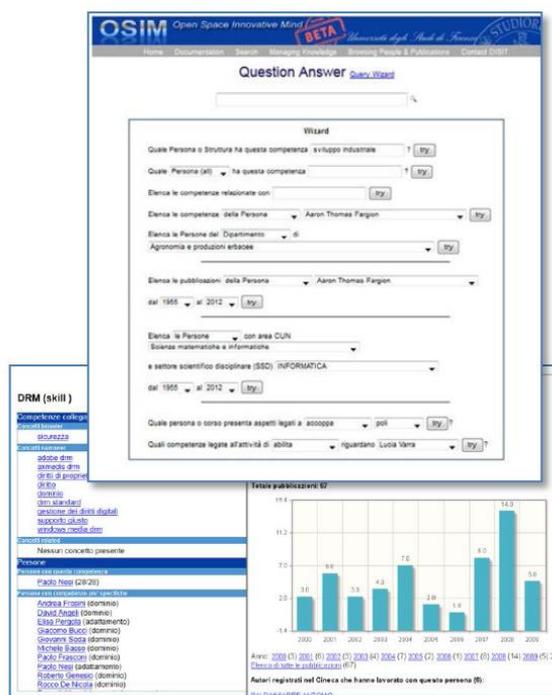
It was then developed a knowledge base built through the use of a tool to capture data and to query various sources such as Web pages, archives, documents in various formats (PDF, Word, etc.), access log, upload log, etc. even in multiple languages (Italian and English).

The system developed by Effective Knowledge provides a learning lightweight process that allows the analysis of the sources for semi-auto determining of important keyword in a given scope.

The system can work jointly and/or disjoint on multiple domains, it allows to carry out joint research in the entire set of domains or to search specific for several distinct domains of interest.

A full indexing includes people, business structures and projects, sources, keywords, concepts, and actions (verbs) made on those items.

A platform that can support experts to understand and define the relationships between the more frequent concepts, optimizing the timing and allowing the production of a knowledge base that is useful not only to University of Florence, but also to anyone who



may need to interrogate it.

OSIM has allowed us to create a complete knowledge base for indexing the knowledge of all the facilities of University of Florence. The results achieved by OSIM may be summarized as follows:

- ✓ analysis of 49 departments
- ✓ 249,000 keywords extracted from documents and from CV 140,746, courses, etc.
- ✓ 18,000 documents scanned (such as CV, courses, articles, etc.)
- ✓ 2344 people tested, including researchers, 1700 reconciling functions also work in staff not of structures
- ✓ all publications in the database CINECA, including 80,000 and 30,000 authors publications
- ✓ The semantic database consists of tens of millions of triples

users benefits

- ✓ To be able to take under control the heritage of knowledge available through an interactive map, navigable and queryable
- ✓ Identify the most suitable candidates to achieve a certain objective, achieving a specific project or get a timely resolution of specific problems
- ✓ Ease and speed to understand the skills and experts in a certain field
- ✓ Highlight the relationships between people, skills, knowledge and content published in different languages and formats

technologies used

- ✓ MySQL
- ✓ RDF Store
- ✓ Solr
- ✓ SPARQL
- ✓ AXCP AXMEDIS
- ✓ Natural Language Processing
- ✓ GeoNames
- ✓ dbPedia
- ✓ Java

REFERENCES:

- OSIM: <http://openmind.disit.org>

