

EMPOWERING IDEA MANAGEMENT SYSTEMS WITH SEMANTICS FOR ORGANISED AND LINKED INNOVATION KNOWLEDGE

Gi2MO aims to improve current Idea Management Systems by providing enhanced data integration capabilities and additional data analysis tools through rich metadata descriptions.

QUICK INFO

PROJECT GOAL

Improve idea assessment, selection and browsing in Idea Management Systems to cope with knowledge management problems.

KEY AREAS

Idea Management, Innovation Management, Knowledge Management, Semantic Web, Linked Data

WHO'S INVOLVED:

Grupo de Sistemas Inteligentes (Universidad Politécnica de Madrid)

FUNDING:

Spanish Ministry of Industry, Tourism and Trade through the project RESULTA (TSI-020301-2009-31)

Spanish Ministry of Science and Innovation through the project THOFU.

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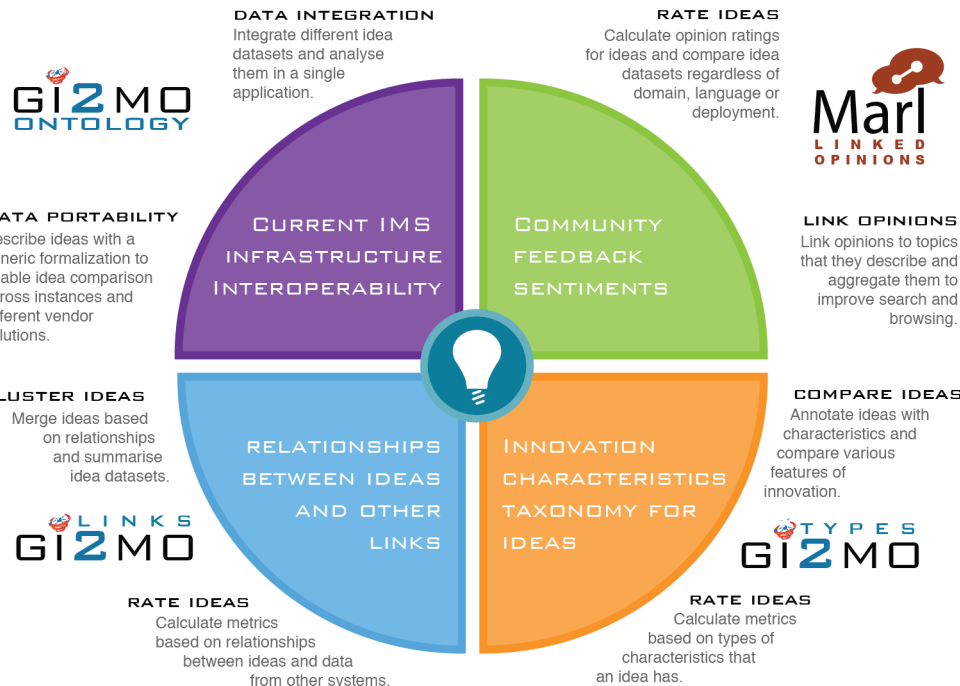
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The assets of Gi2MO are derived from the use of **Semantic Web technologies** to interconnect data inside the Idea Management Systems with information published by other systems and across the World Wide Web. Based on this interoperability layer the project proposes a number of solutions to extend idea metadata and allow new methods of innovation assessment such as: **opinion mining based metrics**, **innovation taxonomy based metrics** and categorization, **idea metrics based on relationships**.





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CREATE IDEAS

As users create new ideas they add more content to your Idea Management System.

This content gets locked inside your system and is shared as HTML difficult to understand for internet search engines (such as Google or Bing). Also, your own applications need an additional development effort for constructing dedicated web services.

Idea Title

Improve visibility of Idea Management System on the Web

Idea Description

Advertise the IMS better on the Web so that more people visit us to submit ideas and participate in the contests.

SUBMIT

AUTOMATICALLY GENERATE IDEA METADATA

Gi2MO IdeaStream allows to generate rich web metadata next to HTML for every single idea and any other content type of the Idea Management System.

The metadata can be published automatically together with the regular HTML view of the idea, using a W3C recommended RDF standard.

Gi2MO Research proposes a schema for this data grounded in the Semantic Web and Linked Data technologies that are gaining in adoption in many major internet companies.

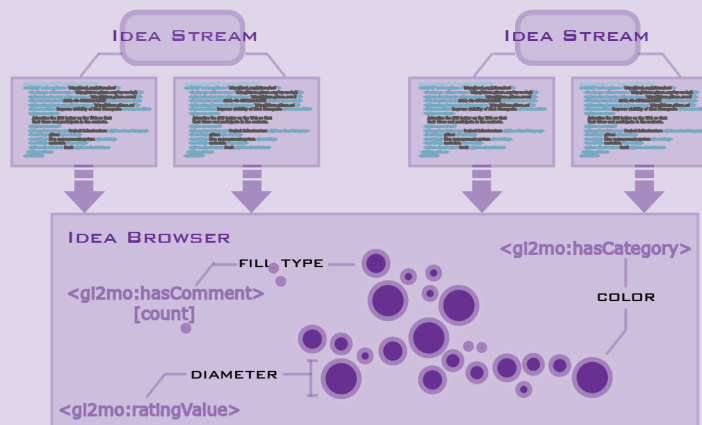
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<?xml version="1.0" encoding="UTF-8"?>
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  <gl2mo:hasCreator rdf:resource="http://ideas.gl2mo.org/user/3/tordf"/>
  <dcterms:created>2011-02-05T13:14:27Z</dcterms:created>
  <gl2mo:hasComment rdf:resource="http://ideas.gl2mo.org/node/2/1/tordf"/>
  <dcterms:title>Improve visibility of Idea Management System on the Web</dcterms:title>
  <gl2mo:content>
    Advertise the IMS better on the Web so that more people visit us to submit
    their ideas and participate in the contests.
  </gl2mo:content>
  <gl2mo:hasCategory>Project Infrastructure</gl2mo:hasCategory>
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  <scot:Tag>Idea management system</scot:Tag>
  <scot:Tag>metadata</scot:Tag>
  <gl2mo:hasStatus>Draft</gl2mo:hasStatus>
</gl2mo:Idea>
</rdf:RDF>
```

USE METADATA TO INTEGRATE SYSTEMS AND ANALYZE IDEAS

While the use of metadata publication gains traction on the Web with initiatives like Open Graph or Google Knowledge Graph, we already give you the tools to take advantage of the Gi2MO metadata!

Using the tools produced by Gi2MO Research you can pull in data from many independent Idea Management Systems and analyse it together to compare the performance of your communities.

Additionally, Gi2MO proposes to use the same metadata technology to integrate different platforms like Bug-Tracking or Human Resources for ranking and generating metrics for ideas.





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WOULD YOU LIKE TO KNOW MORE ?

➡ **Gi2MO IdeaStream**

An open-source Idea Management platform based on Drupal 6.x. Developed as part of the Gi2MO project.

[download] [<http://ideastream.gi2mo.org>]

[twitter] [http://twitter.com/gi2mo_news/]

➡ **RDFme**

A software module that delivers rich web metadata generation for Drupal platform and our Idea Management System - Gi2MO IdeaStream.

[download] [<http://www.gi2mo.org/apps/drupal-rdfme-plugin/>]

[tutorial] [<http://www.gi2mo.org/apps/drupal-rdfme-plugin/mappings-tutorial/>]

➡ **Gi2MO Ontology**

A complete data schema for publishing Idea Management data on the web and sharing it across systems.

[specification] [<http://www.gi2mo.org/ontology/>]

[paper] ["A Model for Integration and Interlinking of Idea Management Systems", A. Westerski, C. A. Iglesias, and F. T. Rico, MTSR conference, 2010]

[tutorial] [<http://www.gi2mo.org/model/ontology-deployment/>]

➡ **Gi2MO Linked Data Metrics**

A methodology for using Linked Data principles for Idea Management Systems to connect with other systems via their metadata and seamlessly integrate for generation of metrics and acquisition of knowledge.

[download] [<http://www.gi2mo.org/apps/ideastream-recommender/>]

[paper] ["Exploiting Structured Linked Data in Enterprise Knowledge Management Systems: An Idea Management Case Study", A. Westerski and C. A. Iglesias, VORTE workshop, 2011]

[tutorial] [<http://www.gi2mo.org/model/linking-data/>]

MINE THE SENTIMENTS ABOUT IDEAS

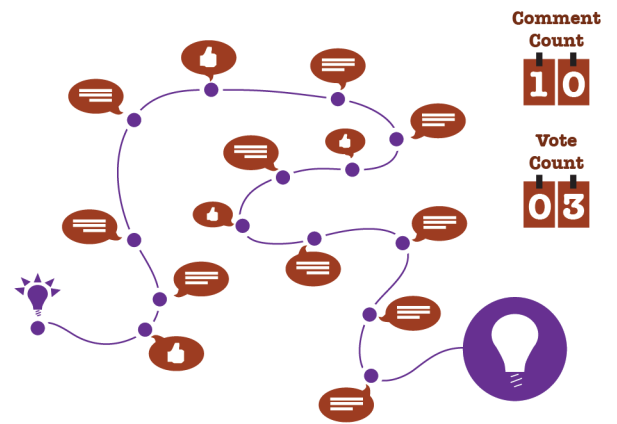
BUILDING COMMUNITIES AROUND IDEAS

One of the goals of Idea Management is to build communities around ideas and stimulate users to discuss about proposed innovations.

Problem: As the community grows it requires more and more effort from the reviewers to track all discussions and analyse the overall opinion about ideas.

Current solution: The regular solution to this problem is to use metrics like **comment count** and **various idea ratings** (up/down, prediction markets etc.).

We would like to suggest a different approach.



ANALYSE TEXT WITH OPINION MINING

In Gi2MO we propose to analyse the comments **automatically** using a technique called **Opinion Mining**.

This method uses Natural Language Processing algorithms to automatically determine if a comment expresses an opinion that is **positive**, **negative** or **neutral** in reference to the related idea.

This approach allows to process in real time user comments and obtain overall sentiment of the community about a particular idea or in general about entire idea campaign.



CALCULATE OPINION RATING FOR IDEAS

Gi2MO delivers a prototype solution that calculates ratings of all posted comments in your system and returns a result based on **how much positive** or **how much negative** the user opinion is.

For every idea, our module analyses the opinion ratings of all the comments posted on the idea's timeline and gives a final opinion score.

Using this method we obtain a new type of rating for an Idea Management System.

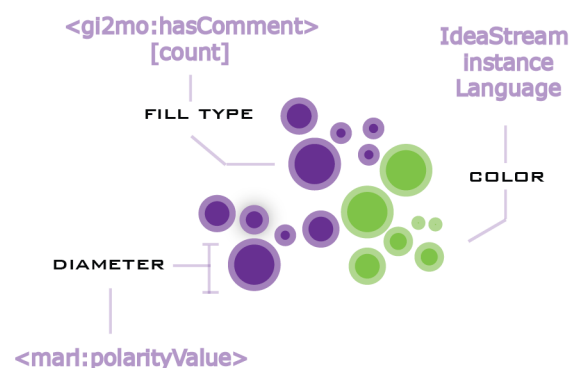


SHARE METADATA AND COMPARE COMMUNITIES

Additionally, we introduce a new metadata schema for publishing opinion information online, in a structured form, embedded as part of HTML of your IdeaStream pages.

The benefit of this technology is that you can apply a variety of data processing tools for analytics of your IdeaStream system, without implementing any sort of complex web services.

For example, you can compare multilingual IdeaStream instances with our **Idea Browser** solution.





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WOULD YOU LIKE TO KNOW MORE ?

➡ OPAL (Opinion Analyser) Module

A Drupal module compatible with our Idea Management platform - Gi2MO IdeaStream. It calculates opinion ratings for all ideas as well as comments in your IdeaStream system.

[download] [<http://www.gi2mo.org/apps/opal-opinion-analyser/>]

[paper] ["Mining Sentiments in Idea Management Systems as a Tool for Rating Ideas", A. Westerski and C. A. Iglesias, COOP, 2012]

[tutorial] [<http://www.gi2mo.org/model/communities/>]

[dev page] [<http://drupal.org/project/opal>]

➡ MARL Ontology and RDFme

MARL Ontology is a specification for publishing opinion metadata with web standards of W3C like RDF and OWL. In order to publish the opinion data of your own IdeaStream instance and embed it as part of HTML use our RDFme solution.

[specification] [http://marl.gi2mo.org/?page_id=1]

[paper] ["Linked Opinions: Describing Sentiments on the Structured Web of Data", A. Westerski, C. A. Iglesias, and F. T. Rico, ISWC, SDoW2011, 2011]

➡ RDFme

A software module that delivers rich web metadata generation for Drupal platform and our Idea Management System - Gi2MO IdeaStream.

[download] [<http://www.gi2mo.org/apps/drupal-rdfme-plugin/>]

[tutorial] [<http://www.gi2mo.org/apps/drupal-rdfme-plugin/mappings-tutorial/>]

➡ Gi2MO Idea Browser

A Flash based web application that allows to visualize many idea datasets on a single screen and filter the view based on multiple criteria. Idea Browser can compare data of Idea Management Systems encoded in RDF/XML format using web ontologies like MARL or Gi2MO.

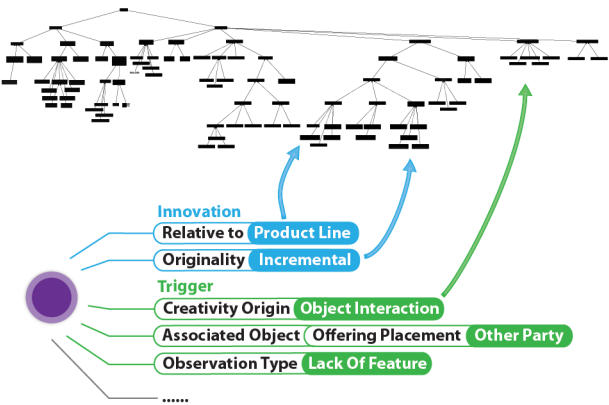
[download] [<http://www.gi2mo.org/apps/idea-browser/>]

[demo] [<http://gi2mo.org/app/idea-browser-v2/demo/>]

Idea Characteristics

Annotate ideas with taxonomy that characterises the types of innovation, the way idea was created, what kind of changes does it propose and other characteristics that can be extracted from idea text.

The goal is to deliver **more information about the ideas** on top of the usually used statistics and assessment metrics. The intention of Gi2MO is to adjust the **vocabulary to fit to your data** as best as possible and see what part of data can be **annotated automatically** and which has to be **manual**.

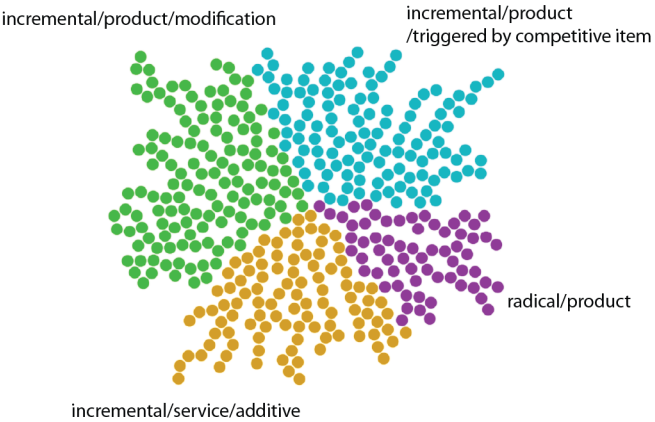


MANUAL ANNOTATION

1. Idea Clustering

Detect clusters of ideas annotated with similar terms. (for example: clusters of incremental/product/additive ideas, radical/service/modification ideas etc.). Analyse the clusters, compare their size and how they change over time.

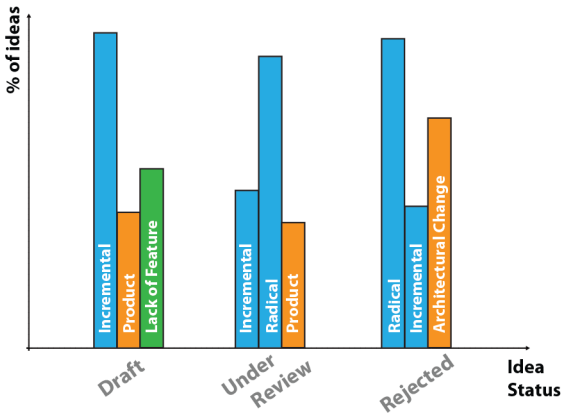
The goal is to see if there are any particular trends **in a given community, for particular idea contests or entire company**. If the ideas that are created are of some particular type and how those types **evolve over time** as idea contests go forward.



2. Idea Statistics

Compare the statistics of the ideas annotated with the taxonomy to normally generated idea statistics (e.g. what % of implemented ideas is radical or incremental innovation, what % of the implemented ideas where proposed based on competitive products etc.)

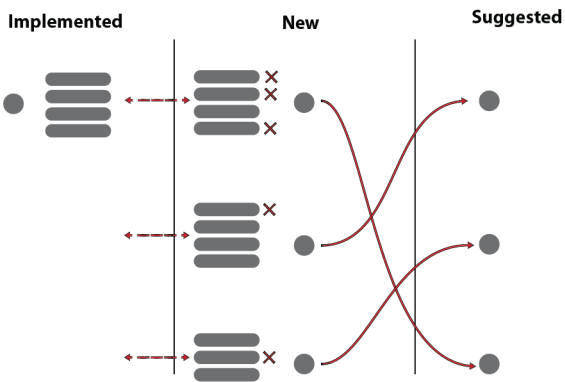
The goal is to deliver information on **how characteristics of ideas are aligned with typical statistics** used in Idea Management Systems, for example: top/ least commented ideas, top/ least rated ideas, idea work flow status (implemented, under review etc.), idea assessment metrics.



3. Idea Ranking and Similarity Measure

Extract the characteristics of successful ideas and rank new ideas as important if they match the same characteristics (rank them in different degree depending on the % of the characteristics that they match, importance of the characteristics)

The ultimate goal on top of providing valuable analytical data is to enable **judging the successfulness of ideas just based on their characteristics** analysis and this way help the proper assessment phase.





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WOULD YOU LIKE TO KNOW MORE ?

➡ **Gi2MO Types Taxonomy**

The Types Taxonomy was designed for categorization of ideas in Idea Management Systems. It delivers 74 terms grouped into 4 branches that classify various aspects of ideas and innovation.

[specification] [<http://www.gi2mo.org/taxonomy/>]

[tutorial] [<http://www.gi2mo.org/model/idea-characteristics/>]

➡ **Gi2MO Ontology and RDFme**

Gi2MO Ontology is a data schema for publishing your idea data on the Web. Together with RDFme module and Gi2MO Types Taxonomy it enables to publish information about idea characteristics to analyse and process it by other Web applications.

[specification] [<http://www.gi2mo.org/ontology/>]

[download] [<http://www.gi2mo.org/apps/drupal-rdfme-plugin/>]

➡ **Gi2MO IdeaStream Similarity and Analytics**

Our Similarity and Analytics modules offer support for the Gi2MO Types. In case of Analytics you are able to view some basic stats about annotations in your IdeaStream, while Similarity module allows to suggest similar ideas based on taxonomy annotations..

[download] [<http://www.gi2mo.org/apps/ideastream-similarity/>]

[download] [<http://www.gi2mo.org/apps/ideastream-analytics/>]