

# **Linked Opinions: Describing Sentiments on the Structured Web of Data**

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# Use Case: Idea Management Systems

[research motivation]

- Online tool for collecting innovation from customers
- Users submit ideas, comment on them and rank
- Reviewers select best ideas based on “social metrics” (# comments, community rank etc.)
- **Idea:** new metric - opinion mined rating

# Use Case: Idea Management Systems

## [research motivation]

Non-shiny Laptop Displays

[View](#)

[Workflow](#)

Tue, 02/23/2010 - 00:00 — Anonymous

I wish there were Laptop Displays that do not become shiny sparkling mirrors when sun is around.

### Opinion Analyzer:



**75% Positive**  
(4 comments)

Result: 2.130

Positive: 3 (75.00%)

Neutral: 1 (25.00%)

Negative: 0 (0.00%)

[Add new comment](#)

[Laptops](#)

## Comments

This idea needs support.

Sat, 02/19/2011 - 00:28 — admin

This idea needs support. Better screens for outside usage would be awesome.

### Opinion Analyzer:

 **Positive**

Result: 0.950789

[reply](#)

# Use Case: Idea Management Systems

[research motivation]

- My primary line of research: knowledge modelling for Idea Management Systems
- **Task:** model opinions and connect them to the existing model for Idea Management Systems

# Why not use Review models ?

[research process]

hReview, schema.org ...

- current schemas do not cover data from opinion mining process (polarity, polarity value...)
- do not point to what precisely the opinion is about
- opinions are not the same as reviews

# Why not use Review models ?

## [research process]

The screenshot displays the ETSIT Ideas platform interface. At the top, the logo for ETSIT Ideas International is visible, along with the tagline: "ETSIT IDEAS IS A PLATFORM TO CONNECT UNIVERSITY STAFF AND STUDENTS. LETS IMPROVE THE SCHOOL TOGETHER!". Below this, a navigation bar allows filtering ideas by status: ALL, DRAFT, ACCEPTED, REJECTED, and IMPLEMENTED. A "Create New Idea" button is also present.

The main content area features a draft idea titled "Better Food In The Cafeteria" in the "Cafeteria" category. The idea is marked as a "DRAFT" and has received 5 votes. It was sent by Sara on 02/22/2011 at 19:14. The status is "Draft" and it has tags for "menu", "cafeteria", and "lunch". The comment count is 2 positive, 1 negative, and 0 neutral. The idea's text reads: "The food in the cafeteria is not bad but after some time I realised it is very repeatable. After few months I cannot eat it anymore! It would be great if the menu was more diversified. I know some would not like this at the expense of the price so a good idea could be to introduce more price options." Below the text are links for "Add new comment" and "Add new review".

Comments on the idea include:

- A negative post from Ludvic: "I don't agree, I prefer to... I don't agree, I prefer to keep things simple. Also I like the food that we have now." (Time: Tue, 02/22/2011 - 19:26)
- A positive post from Hans: "definitely, i would very much... definitely, i would very much like to see this" (Time: Tue, 02/22/2011 - 19:22)
- A positive post from Jeremy: "ugh, great idea, i support" (Time: Tue, 02/22/2011 - 19:18)

On the right side, there are two sidebars. The "Idea Categories" sidebar lists: Cafeteria (2), DAT student association (2), Secretary (2), and Library (1). The "Top Ideas" sidebar lists: Better food in the... (5), More parking space (4), More soups! (3), New metro station... (2), Library Card and... (2), New design for slash... (2), and English speaking... (2). The "Top Inventors" sidebar lists: Margaret (2), John (1), Hans (1), Jeremy (1), Sara (1), and Ludvic (1).

Annotations on the left side of the image include:

- An arrow labeled "review" pointing to the idea's header.
- An arrow labeled "opinions" pointing to the comments section.

idea management with reviews and opinions

# Why not use Review models ?

[research process]

[Settings] [Logout]



CREATE NEW IDEAS AND COLLABORATE WITH US TO MAKE SEMANTICALLY EMPOWERED INNOVATION COME TRUE

Filter Ideas: **ALL** | DRAFT | ACCEPTED | REJECTED | IMPLEMENTED

Search ideas...

**Create New Idea**

**Idea Categories** **Ideas** **Comments**

- Applications (1)
- Linked Data research (1)
- Project Infrastructure (1)
- Use Cases (1)
- Ontology (0)
- Visualisation (0)

**Top Ideas** **Votes** **Comments**

- Create A Simple... (1)
- Open the Idea... (1)
- Analyse how Idea... (1)

**Top Inventors** **Ideas** **Comments**

- adam (3)
- Carlos A. (1)

## Create Idea Review

**Idea Review:** \*

Click to change the default title

**Reviewed Idea:**

Open the Idea Management System for Gi2MO Project to public

Select the reviewed idea

**Rating:**

8

Review the idea on a scale from 1..10

Menu settings

**Review Types:**

Impact Review

Review for evaluating Ideas.

**Review text:**

Split summary at cursor

Open Gi2MO ideas to the public should be quite a good idea. Probably the impact in term of participation and new ideas will not be great but it should be very nice in terms of showcase and advertising other elements of Gi2MO project.

IdeaStream is basically a necessary step and development effort that is needed to present and deliver for others our Semantic Web oriented functionality.



review

opinion →

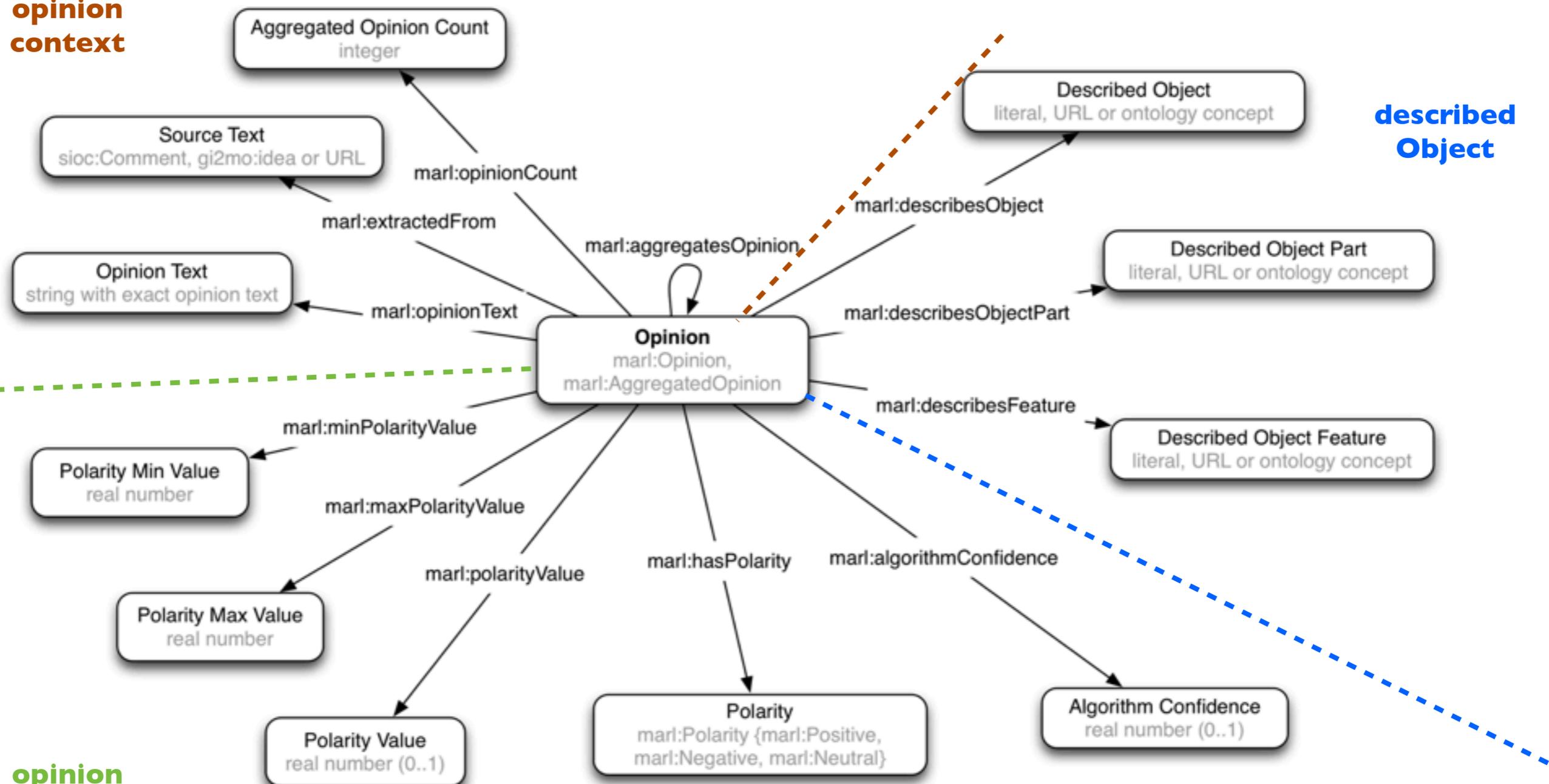
idea management with reviews and opinions

# Marl Ontology

## [research process]

opinion context

described Object



opinion mining data

# Modelling opinions

[research process]

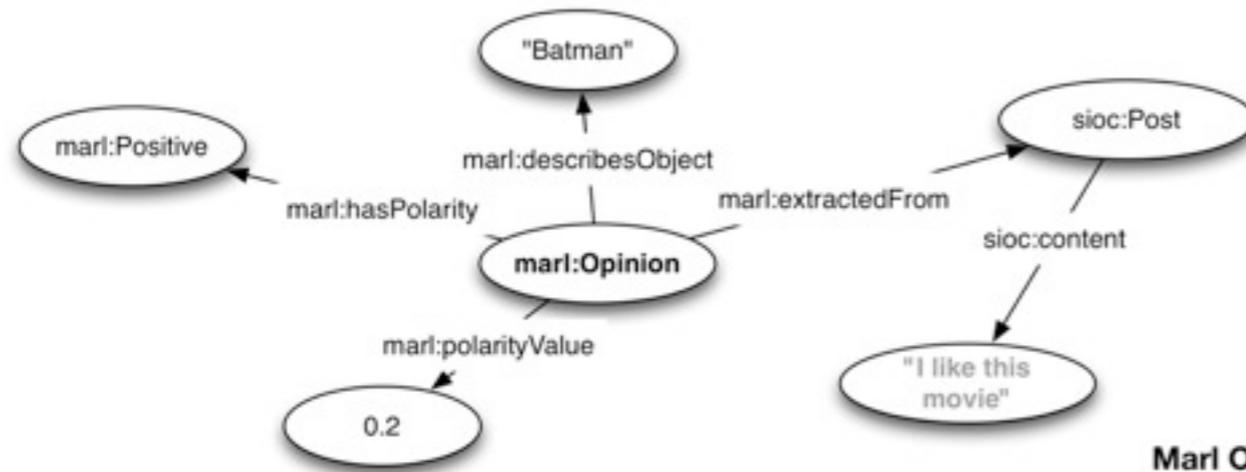
**Step I:** Analysis of various opinions types from various web systems

- Movie opinions
- Product opinions
- Idea Management opinions (ideas about products, services, processes... )

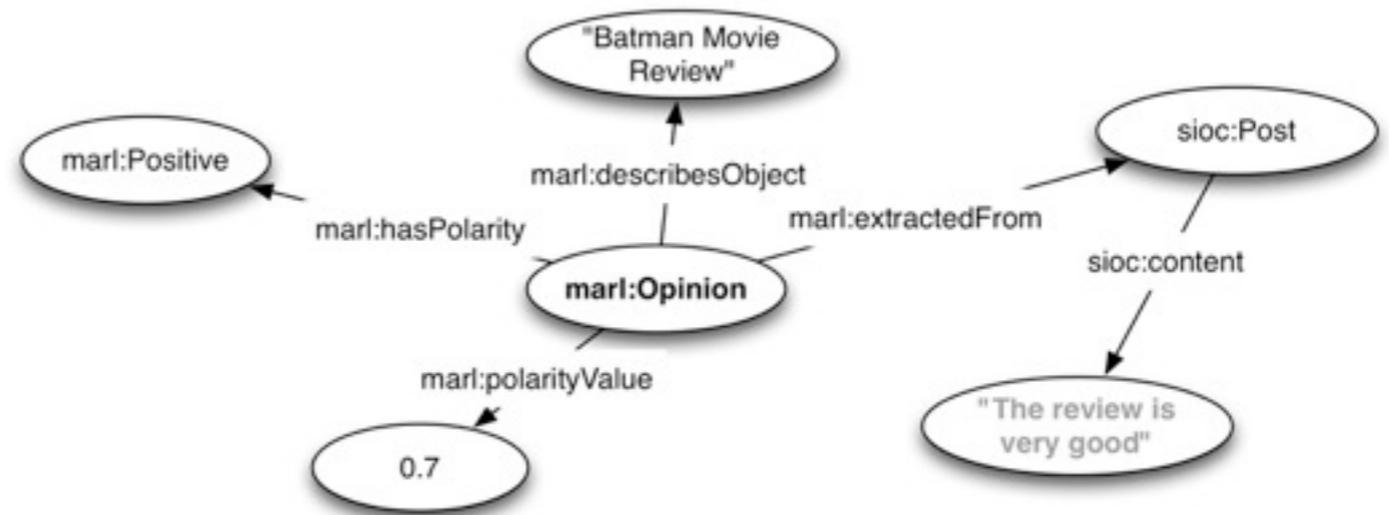
# Modelling opinions

## [research process]

Marl Opinion Ontology  
Use Case Study - Movie Opinions



Marl Opinion Ontology  
Use Case Study - Movie Review Opinions



Examples of opinion diagrams

# Modelling opinions

[evaluation process]

**Step II:** Evaluating coverage/ completeness of the ontology by mapping different datasets & services to RDF/XML.

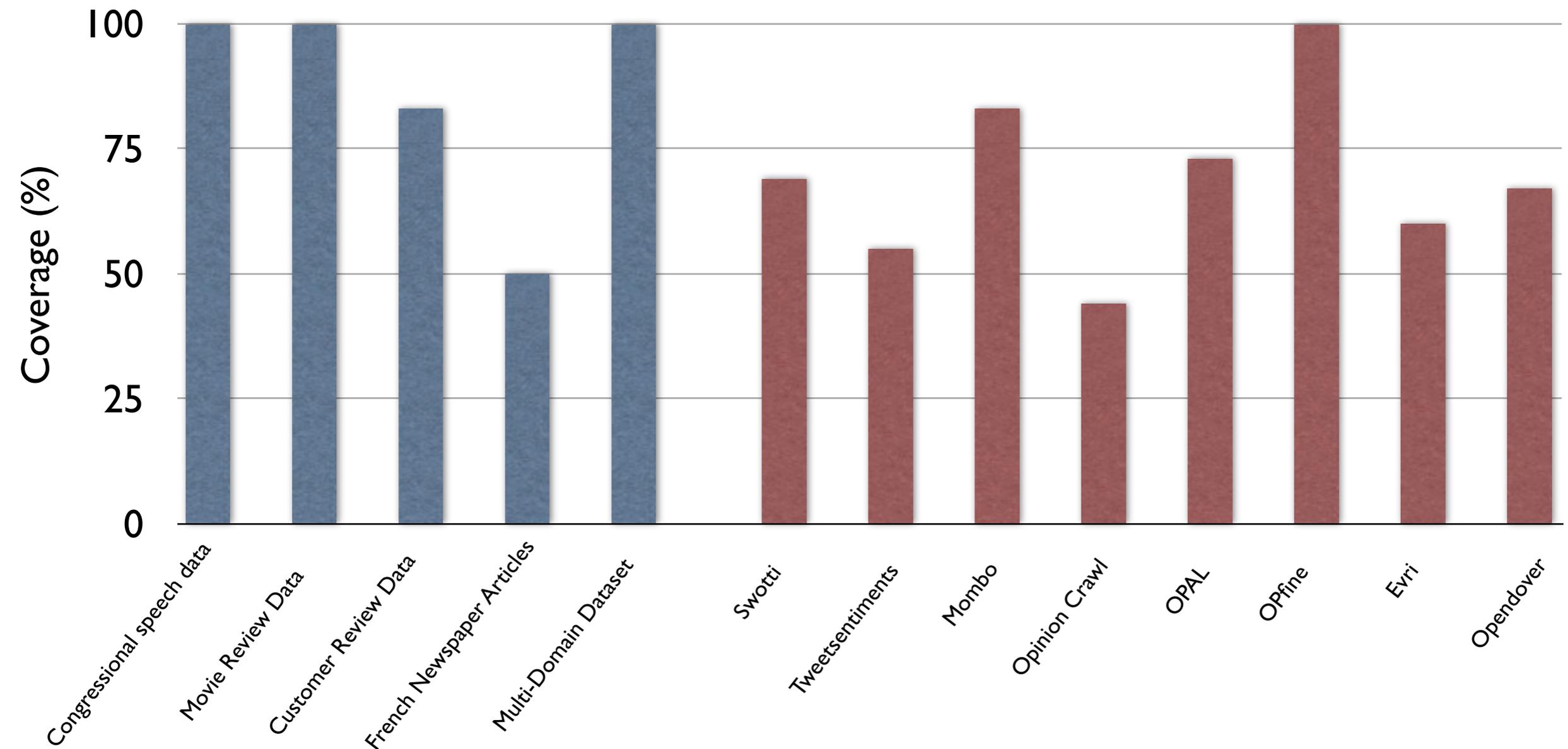
- 5 research datasets from Opinion Mining area
- 8 web services/ software toolkits for Opinion Mining

# Modelling opinions

## [evaluation process]

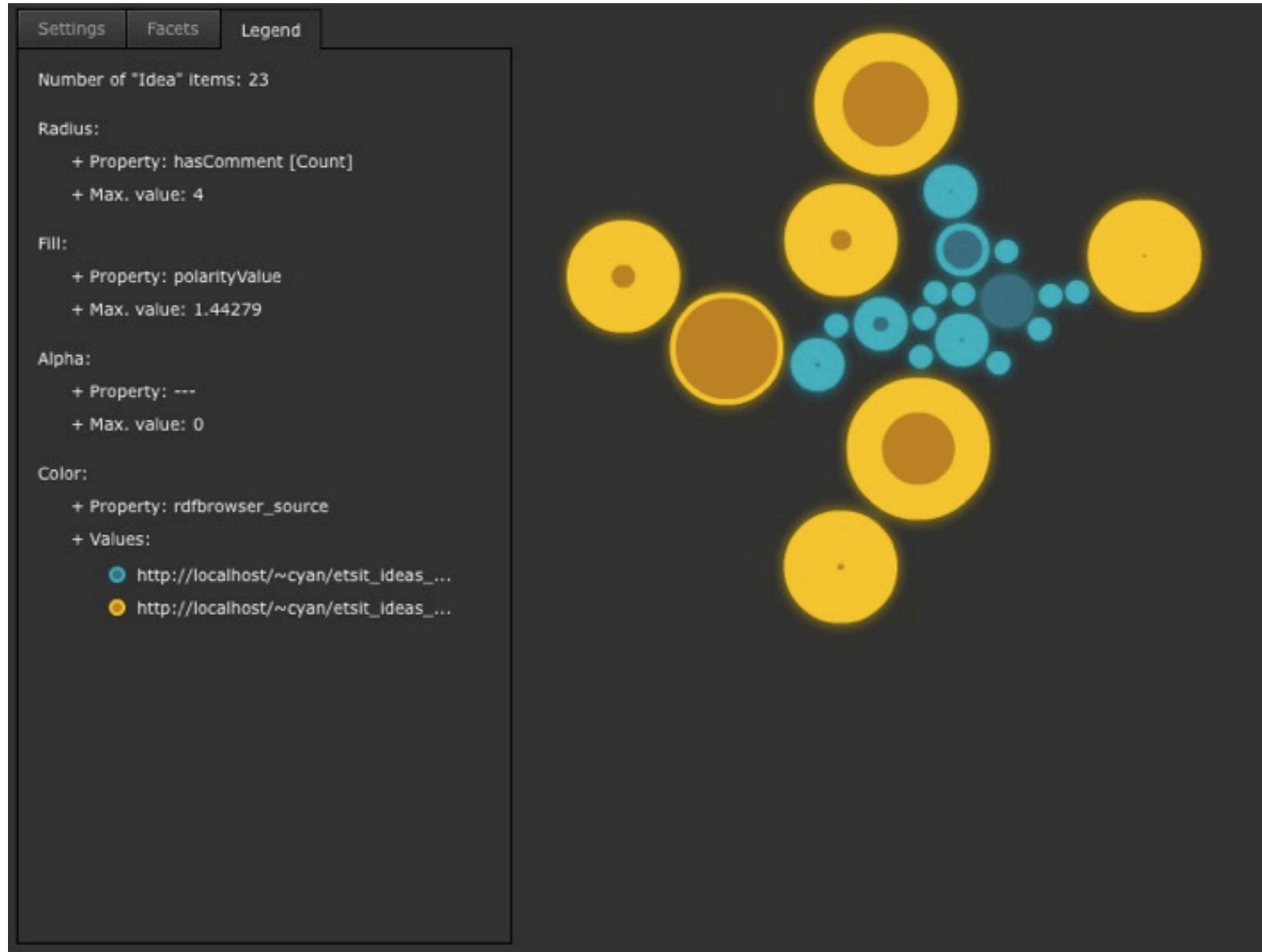
Average Coverage: 76%

■ Research Datasets ■ Services



# Marl in work

## [results]



# More info

- detailed results of experiments with Marl:  
<http://marl.gi2mo.org>
- tools used: <http://gi2mo.org/apps>

