





PROPEL: Topic and trend analysis Javier D. Fernández, <u>Sabrina Kirrane</u>, Axel Polleres

Interviews & Workshop Propel PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA

23 interviews:

Domains

Consulting, Engineering, Environment, Finance and Insurance, Government, Healthcare, ICT, IT, Media, Pharmaceutical, Professional Services, Real Estate, Research, Startup, Tourism, **Transports & Logistics**

Roles

Business Intelligence, CEO, Chief Engineer, Data and Systems Architect, Data Scientist, Director Information Management, Enterprise Architect, Founder, General Secretary, Governance, Risk & Compliance Manager, Head of Communications and Media, Head of Development, Head of HR, Head of R&D. Innovation Manager, Information Architect, IT Project Manager, Management, Managing director, Marketing Analyst, Principle System Analyst, Project Coordinator, Researcher, Technical Specialist

- Took place on the 10th of May 2016
 - private sector (solution providers and users)
 - research sector (technicians and strategic people)
- Business barriers and drivers
- Technological challenges and opportunities













User Stories



4 out of 60 user stories we collected in the interviews:

Horizontals

- Business processes (e.g. product logistics and supply chain management)
- Human resources (e.g. expert and resource management)

Verticals

- Media & Publishing
- Healthcare & Pharma













Technologies in need... prope1



Analytics

Computational linguistics & NLP Concept tagging & annotation

Data integration

Data management

Dynamic data / streaming

Extraction, data mining, text mining, entity extraction

Logic, formal languages & reasoning

Human-Computer Interaction & visualization

Knowledge representation

Machine learning

Ontology/thesaurus /taxonomy management

Quality & Provenance

Recommendations

Robustness. scalability, optimization and performance

Searching, browsing & exploration

Security and

System engineering

We pretty much ended up in all areas that SW touches upon!

privacy









Business Processes



"I would like to be able to exchange information and coordinate production and logistics with suppliers and customers..."

"...so that I can improve efficiency, effectiveness and flexibility of my inventory management and operations" Analytics

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Concept tagging & annotation

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System engineering













Human Resources



"I would like identify expertise within our large organisation and be able to pinpoint the relevant experts..."

"...so that I can I can identify top trends within the organisation and expertise for the organisation as a whole"

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Robustness, scalability, optimization and performance

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Media & Publishing



I would like to display personalized content as precise as possible

So that my readers stay as long as possible on my website.

Computational Concept tagging **Analytics** Data integration linguistics & NLP & annotation Extraction, data Logic, formal Dynamic data / Data mining, text languages & mining, entity streaming management reasoning extraction Human-Ontology/thesaur Knowledge Computer Machine learning us/taxonomy Interaction & representation management visualization Robustness. Data Searching. scalability, Recommendations browsing & Quality & optimization and exploration Provenance performance Security and System privacy engineering













Healthcare & Pharma



I would like to Integrate disparate systems that are:

- -Hard to integrate
- -Widespread
- -Contain the same data that contradicts each other

So that I can gain insights from other clinical trials

Computational **Analytics** linguistics & NLP

Dynamic data /

streaming

Knowledge representation

Data Quality & Provenance

Data

management

Human-

Computer

Interaction &

visualization

Recommendations

Security and privacy

& annotation

Extraction, data mining, text mining, entity extraction

Machine learning

Robustness. scalability, optimization and performance

> System engineering

Concept tagging

Data integration

Logic, formal languages & reasoning

Ontology/thesaur us/taxonomy management

> Searching. browsing & exploration













Let's take a step back...

What can we offer as a community?



Taking an introspective view







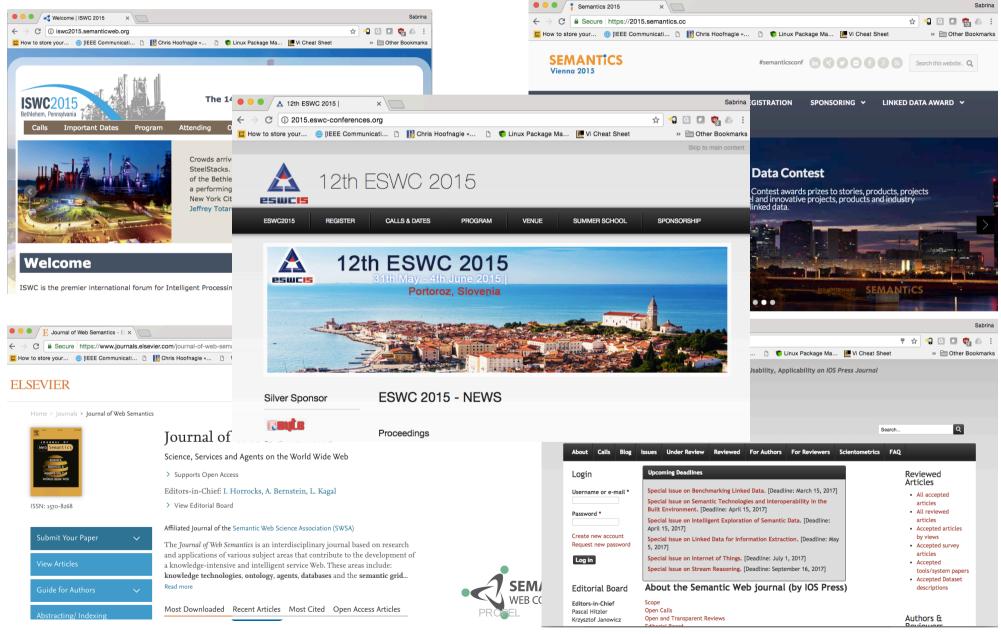




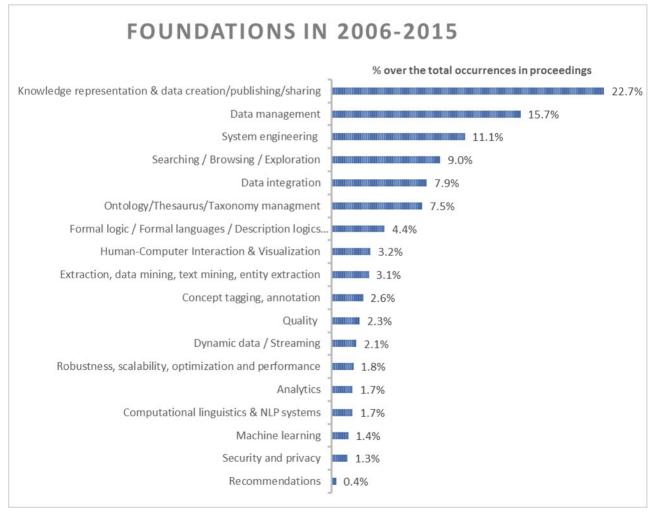


Community Analysis





Coverage per Foundation Propel















PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA

Community Analysis



- Monitoring SW community major venues:
 - ISWC (since 2006), ESWC (since 2006), SEMANTICS (since 2007), JWS (since 2006), SWJ (since 2010)
- 3 seminal papers:















Semantic Web/Linked Data over time... **PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA



May 17, 2001

The Semantic Web

A new form of Web content that is meaningful to computers will unleash a revolution of new possibilities

By Tim Berners-Lee, James Hendler and Ora Lassila

Subtopics:

Expressing Meaning

Knowledge Representation

Ontologies

Agents

Evolution of Knowledge







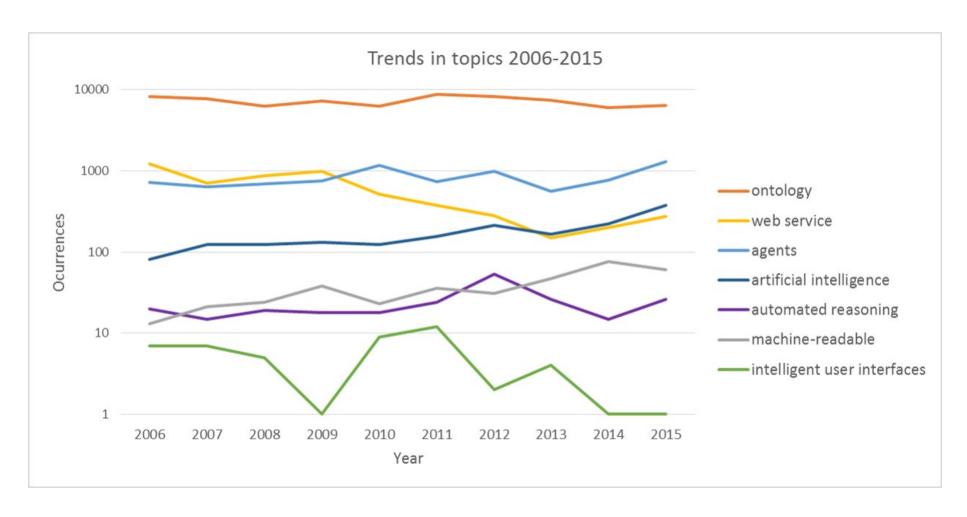






Knowledge Representation & Reasoning

















Semantic Web/Linked Data over time... **PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA **PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA **PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA **PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA **PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA **PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA **PROPERTY OF THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA **PROPERTY OF ENTERPRISE LINKED



Features - January 19, 2009

The Semantic Web in Action Corporate applications are well under way, and consumer uses are emerging

By Lee Feigenbaum, Ivan Herman, Tonya Hongsermeier, Eric Neumann and Susie Stephens

Early adopters:

MITRE

Chevron

British Telecom

Boeing

Ordnance Survey

Eli Lily

Pfizer

Agfa

Food and Drug Administration

National Institutes of Health

Software adopters/products:

Oracle

Adobe

Altova

OpenLink

TopQuadrant

Software AG

Aduna Software

Protége

SAPHIRE





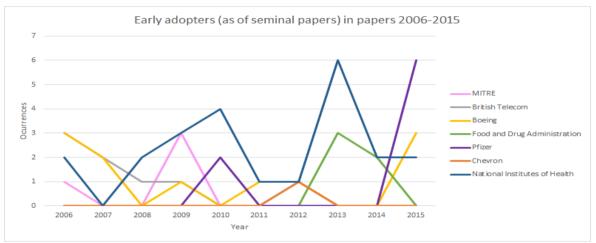


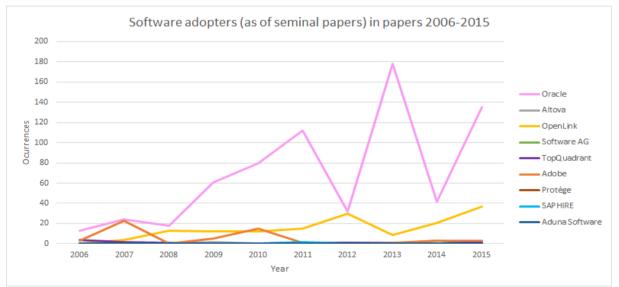






LD Adopters - Companies Propel















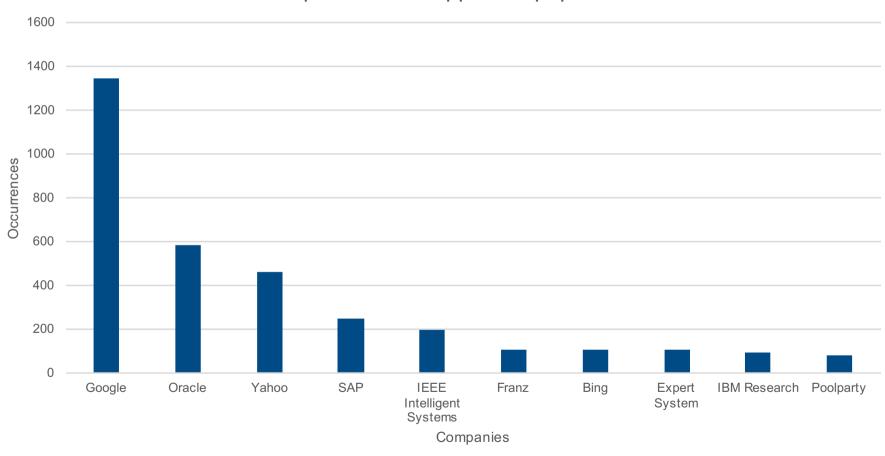


PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA

LD Adopters - Companies



Conference Sponsors that appear in papers 2006-2015





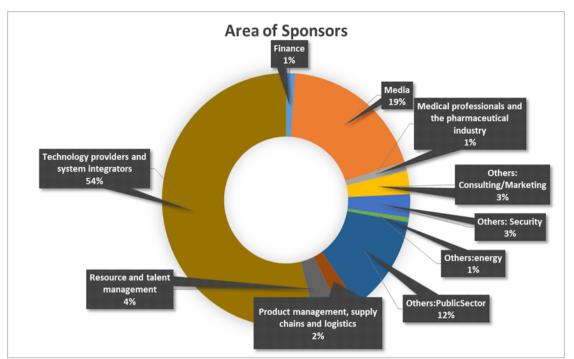




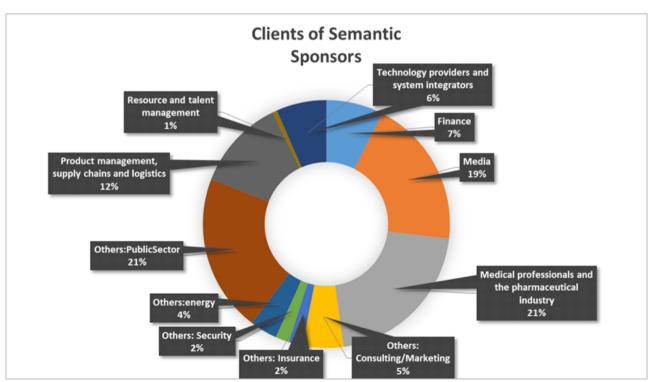












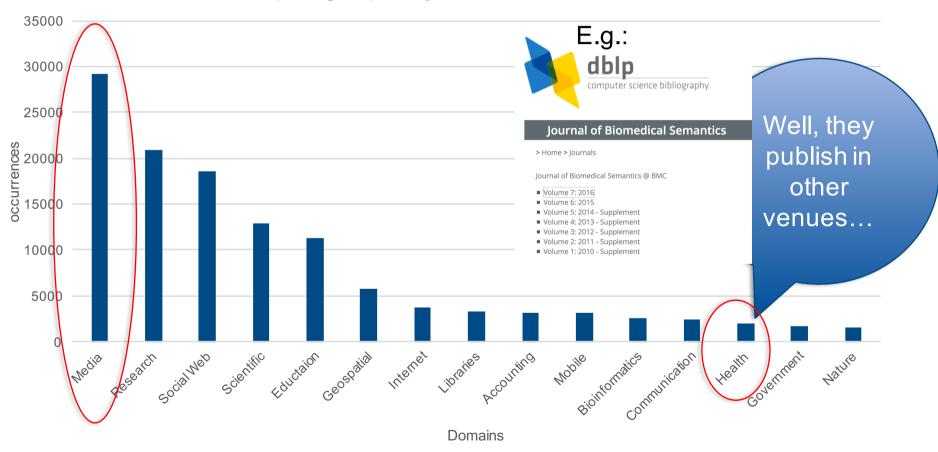




LD Adopters - Domains



Topics grouped by domain 2006-2015















Semantic Web/Linked Data over time... **Propelling the Potential of Enterprise Linked Data in Austria.** **Propelling the Potential of Enterprise Linked Data in Austria.** **Propelling the Potential of Enterprise Linked Data in Austria.** **Propelling the Potential of Enterprise Linked Data in Austria.** **Propelling the Potential of Enterprise Linked Data in Austria.** **Propelling the Potential of Enterprise Linked Data in Austria.** **Propelling the Potential of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enterprise Linked Data in Austria.** **Propelling the Potential Of Enter

viewpoints

DOI:10.1145/2890489

Abraham Bernstein, James Hendler, and Natalya Noy

Viewpoint

A New Look at the Semantic Web

Seeking to make Web data "smarter" by utilizing a new kind of semantics.

The authors claim that "early research has transitioned into these larger, more applied systems, today's Semantic Web research is changing: It builds on the earlier foundations but it has generated a more diverse set of pursuits".







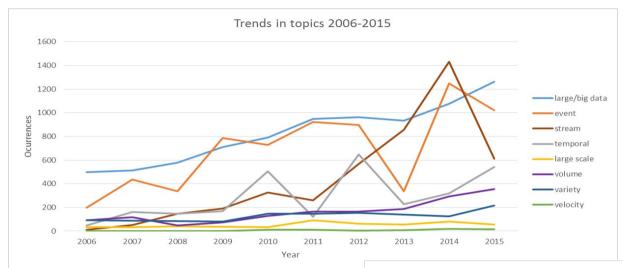


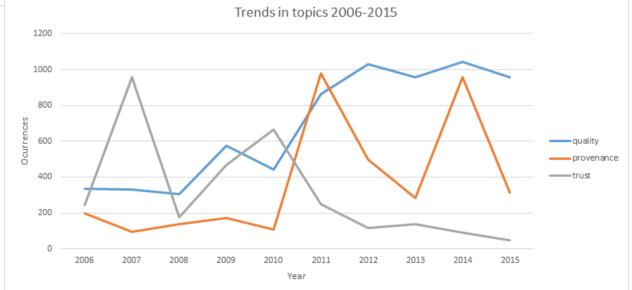




Looking to the future





















Roadmap for Enterprise LD?

- 1. Linked Data security and privacy requirements
- 2. Determining and resolving data quality issues
- 3. Managing large amounts of data and associated metadata such as provenance and temporal data
- 4. Visualisation requirements
- 5. Understand the different application areas and their maturity in terms of real world deployment
- Showcases in terms of startups, projects, applications and systems based on Linked Data technologies
- 7. Linked Data and recommender system models
- 8. Dynamic linked datasets

https://www.linked-data.at/











