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propel PROPELLING THE POTENTIAL OF ENTERPRISE LINKED DATA IN AUSTRIA

PROPEL: Topic and trend analysis

Javier D. Fernández, Sabrina Kirrane, Axel Polleres

Interviews

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

Workshop

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- 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

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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…

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 privacy	System engineering	

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

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Business Processes

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"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"*

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Human Resources

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"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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Media & Publishing

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I would like to display personalized content as precise as possible

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

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Healthcare & Pharma

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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*

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Community Analysis

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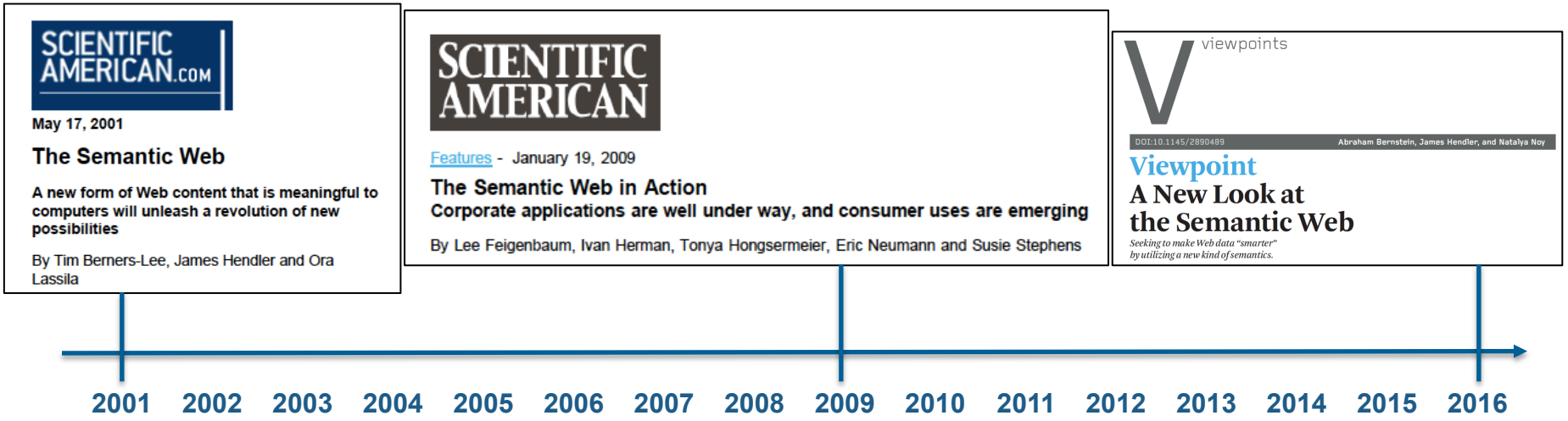
- Monitoring SW community major venues:
  - ISWC (since 2006), ESWC (since 2006), SEMANTiCS (since 2007), JWS (since 2006), SWJ (since 2010)
- 3 seminal papers:



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Topic Categorisation

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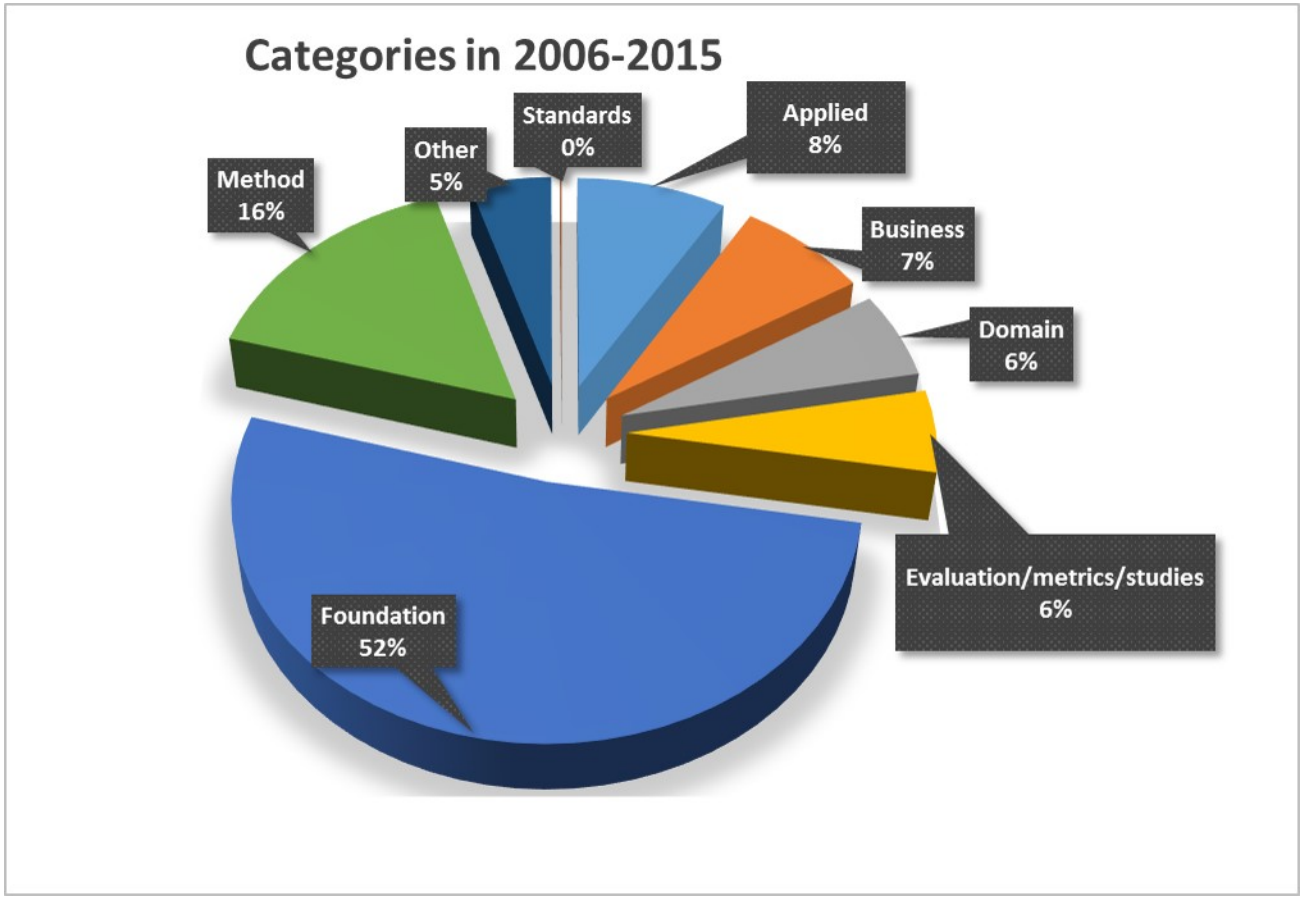

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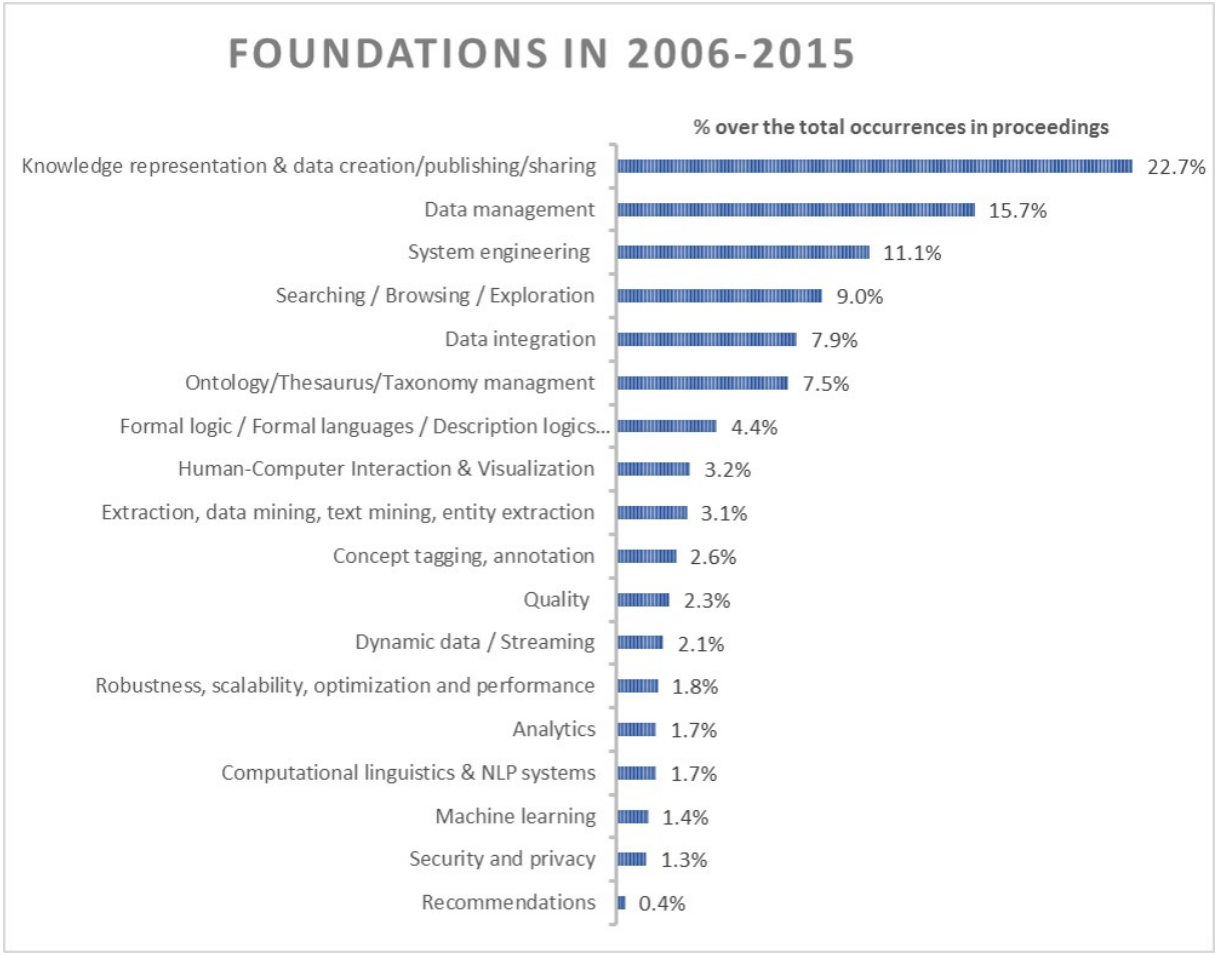
Coverage per Foundation



Semantic Web/Linked Data over time…

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SCIENTIFIC AMERICAN.COM

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

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Knowledge Representation & Reasoning

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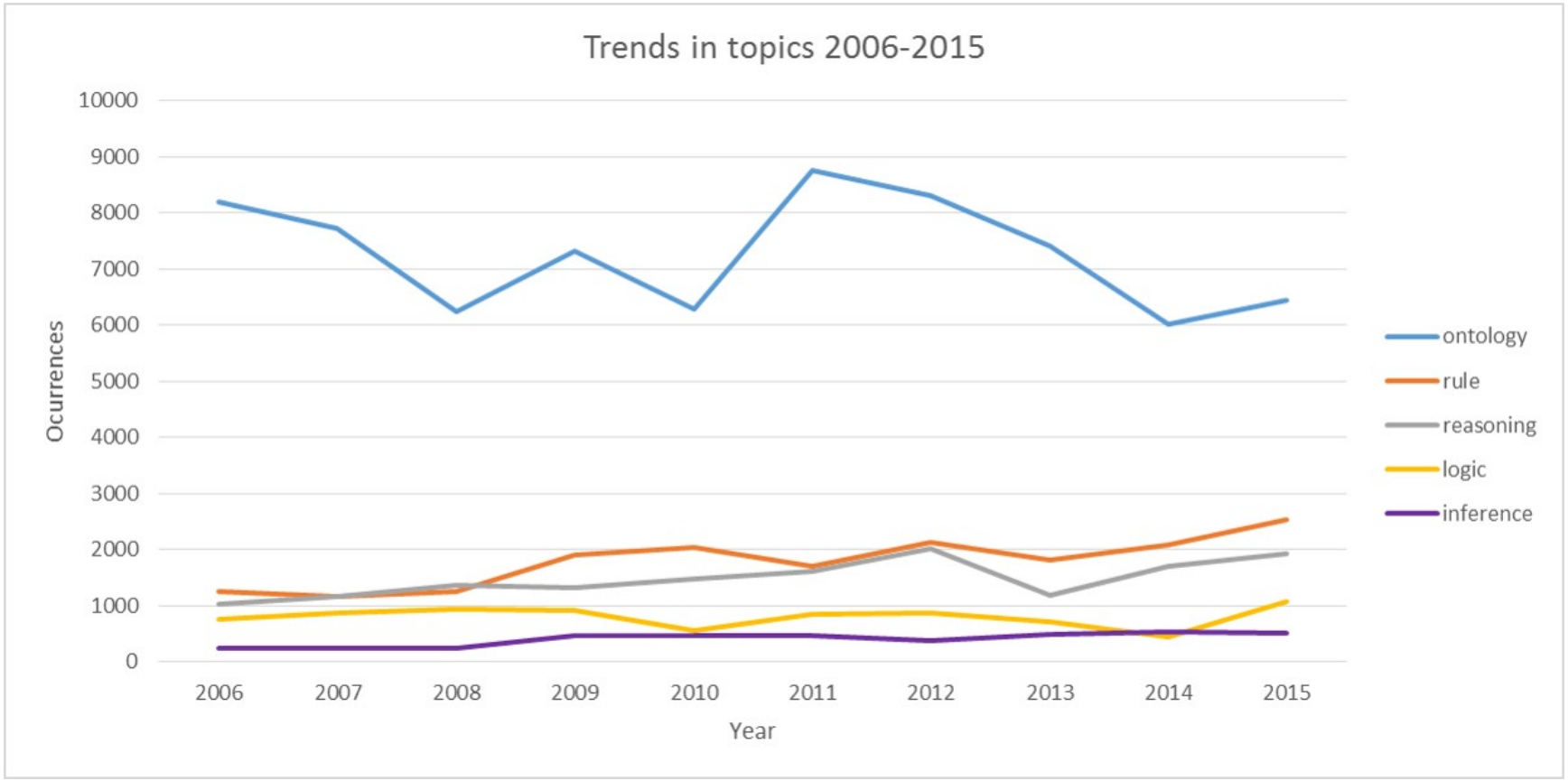

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Knowledge Representation & Reasoning

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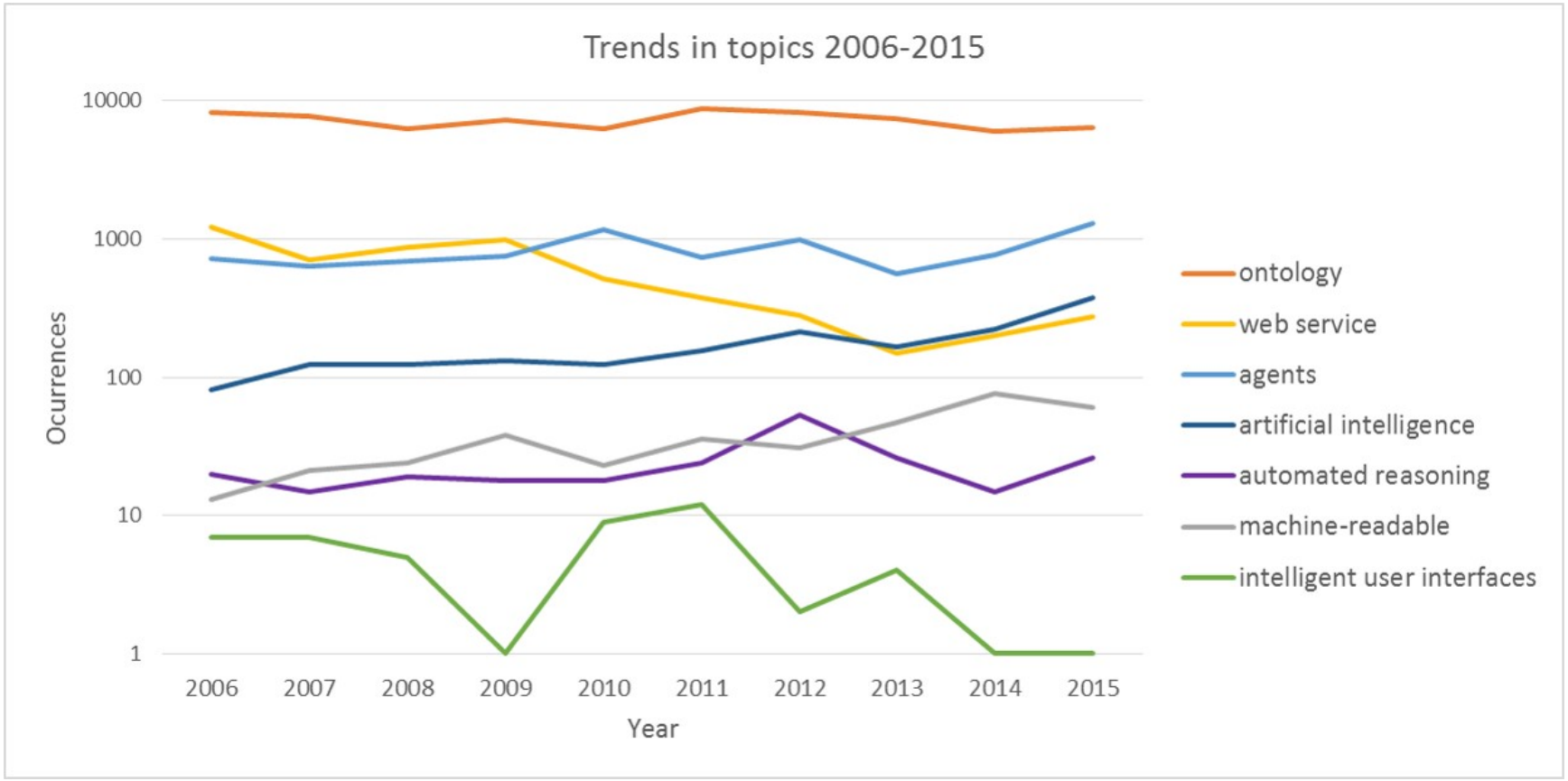

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Semantic Web/Linked Data over time…

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SCIENTIFIC AMERICAN

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

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LD Adopters - Companies

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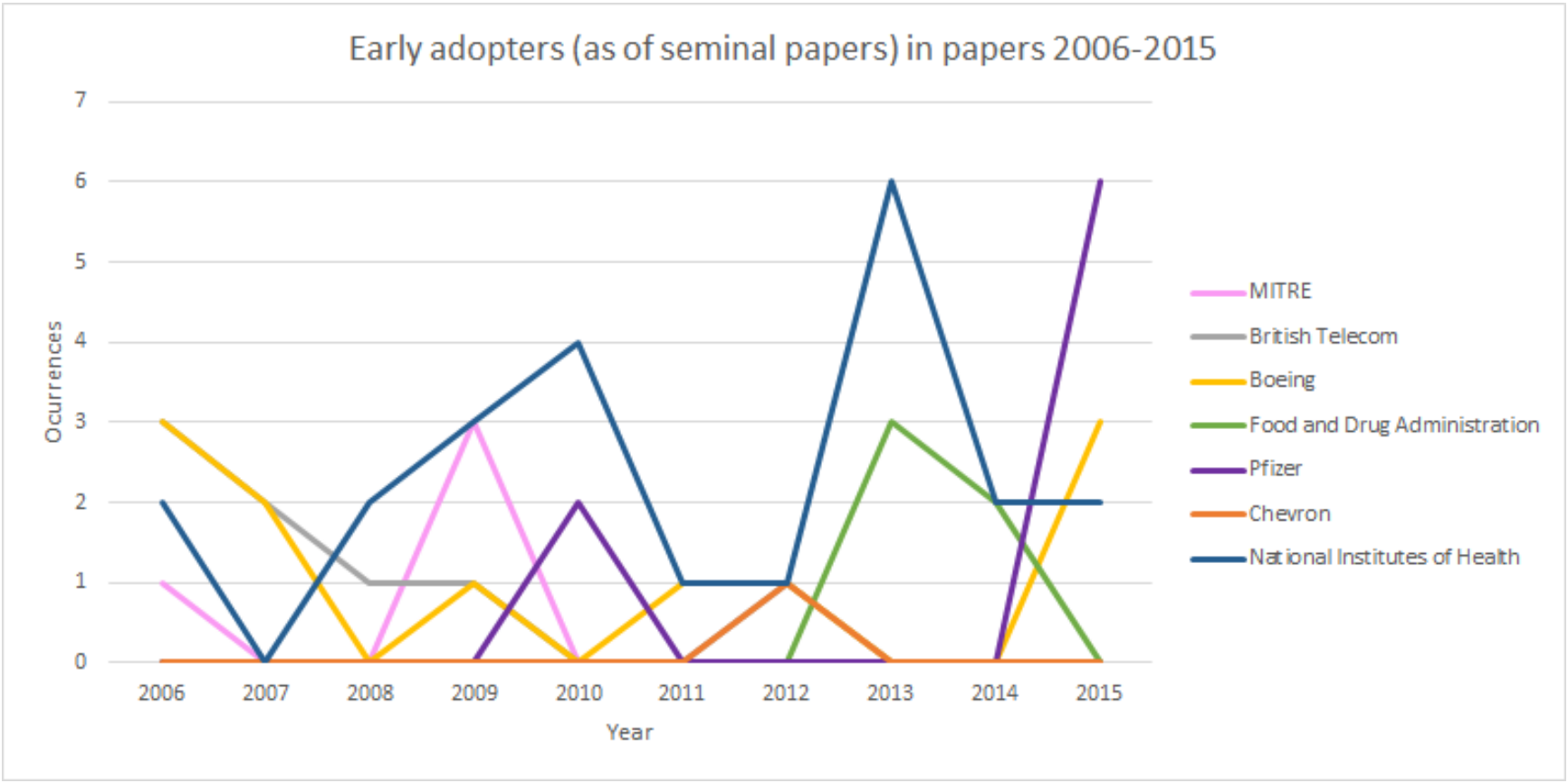

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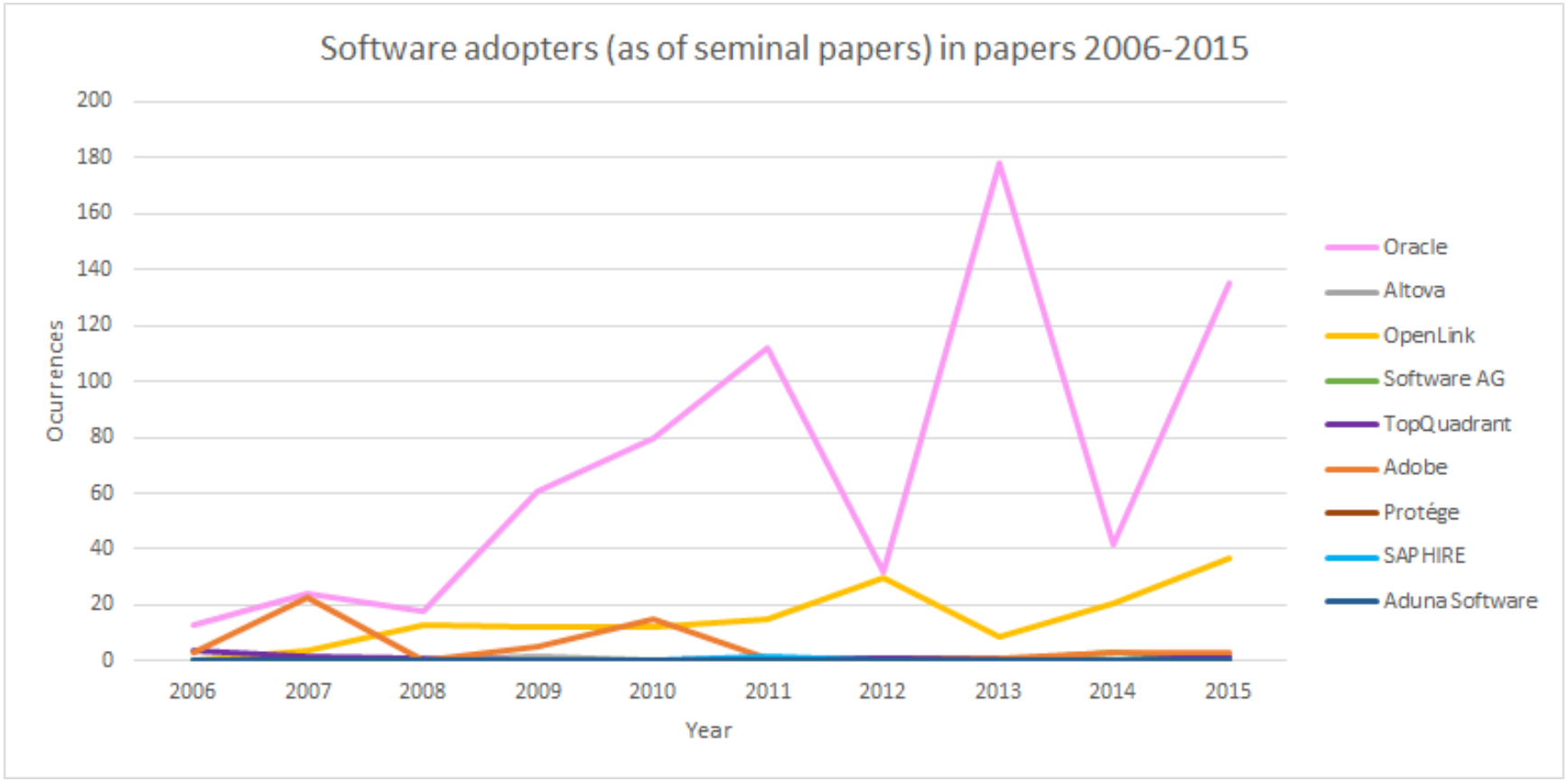

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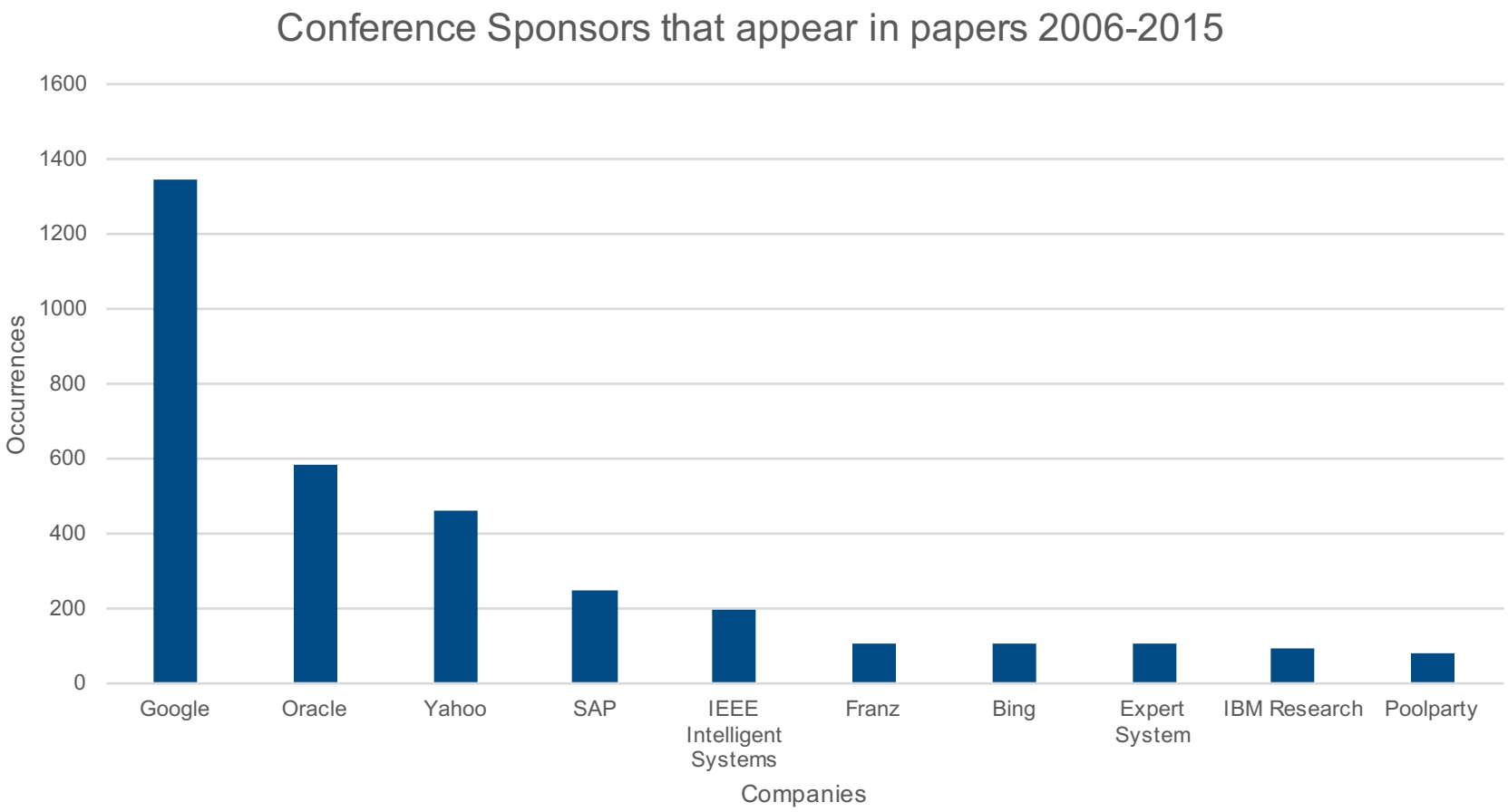

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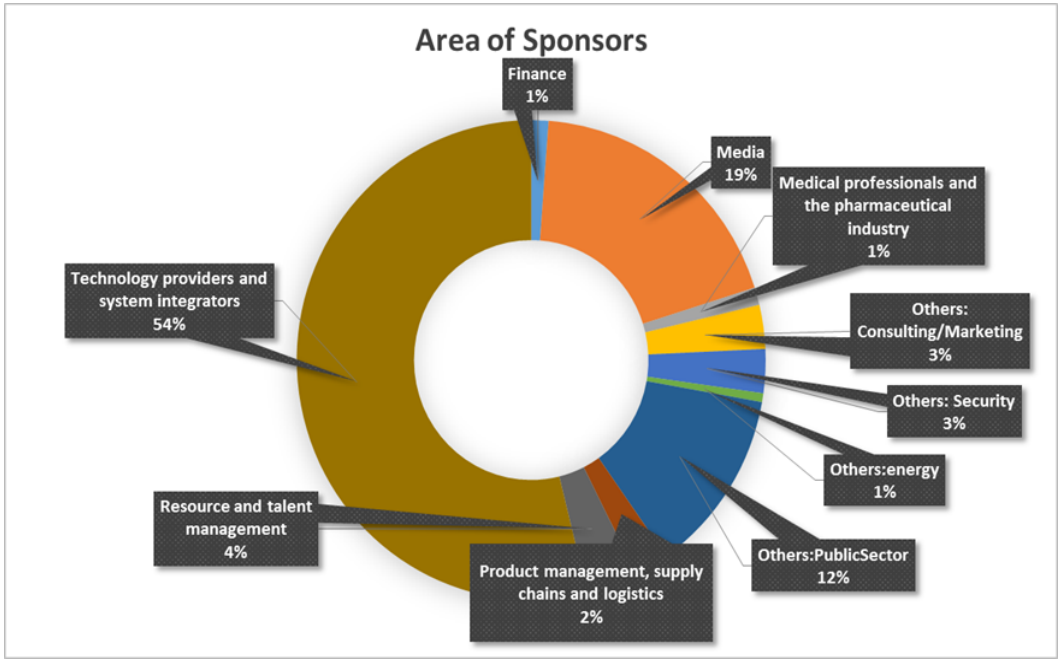

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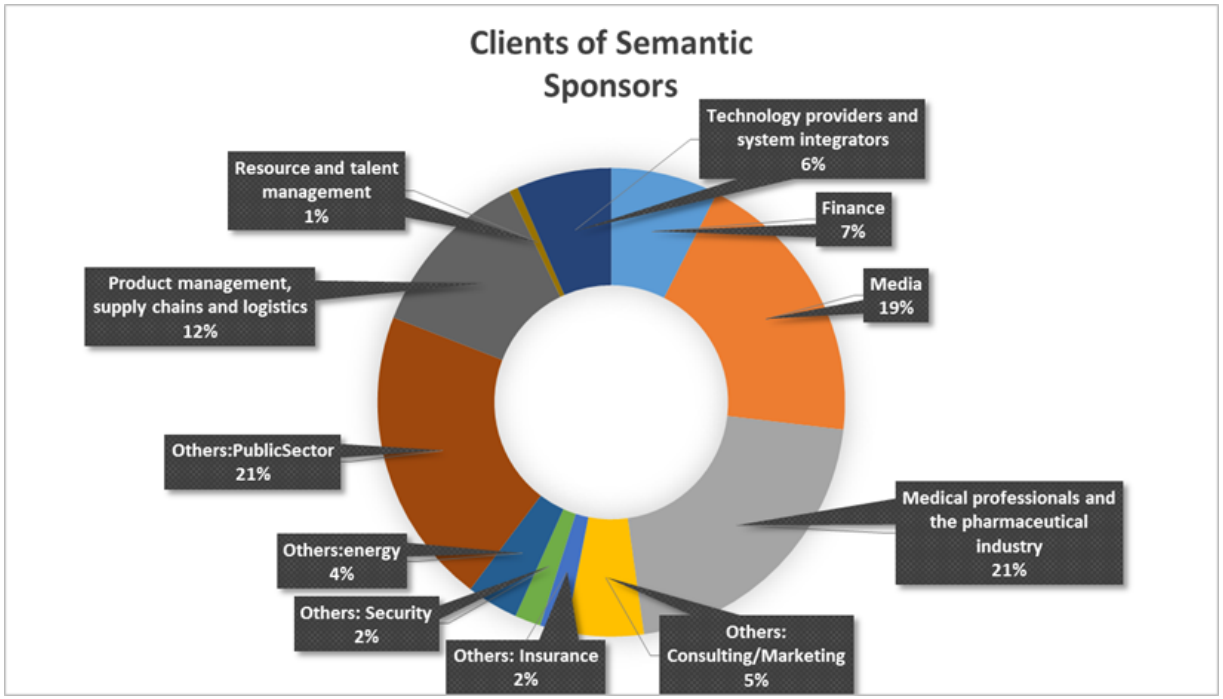

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LD Adopters - Domains

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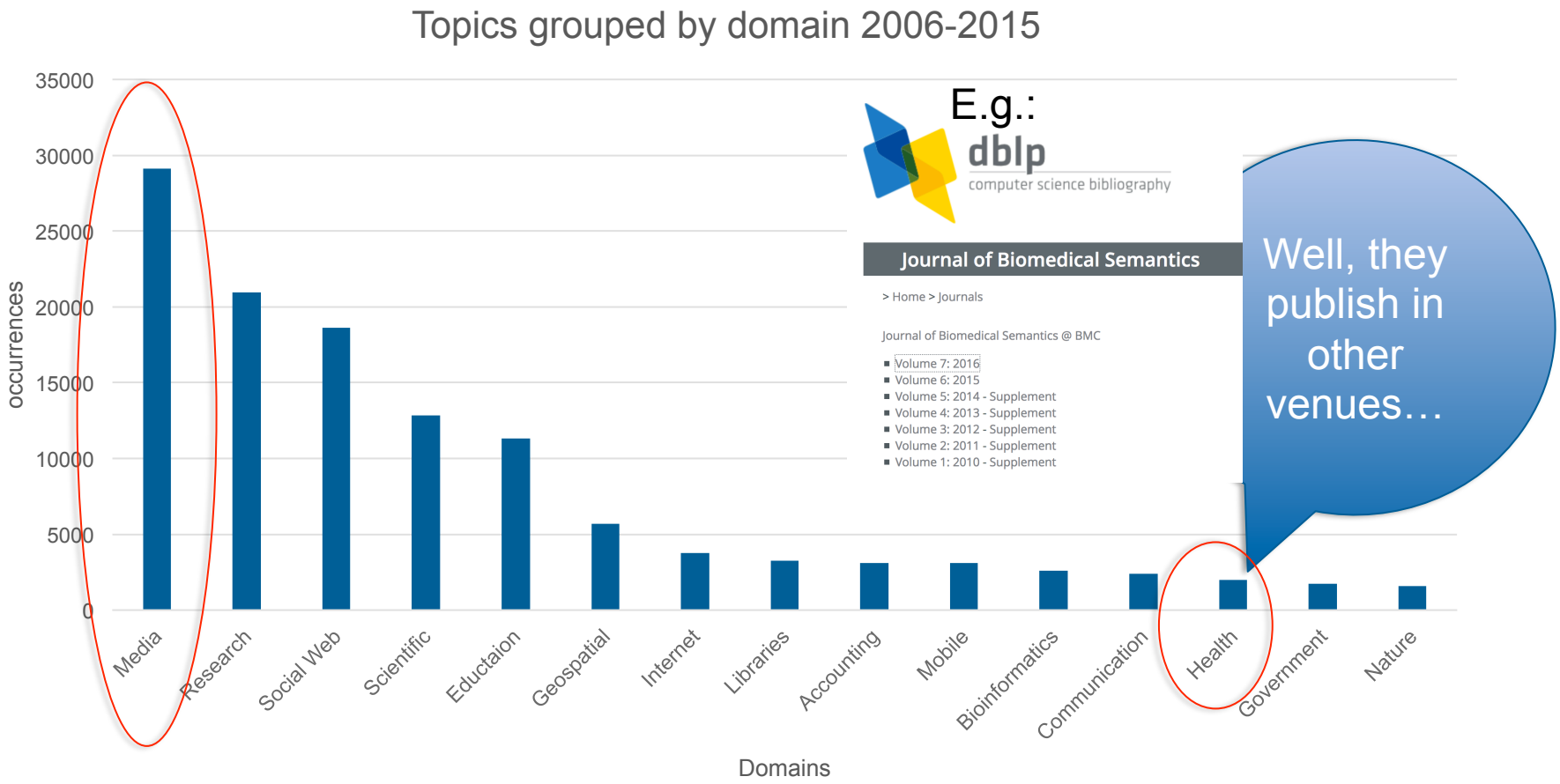

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Semantic Web/Linked Data over time…

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

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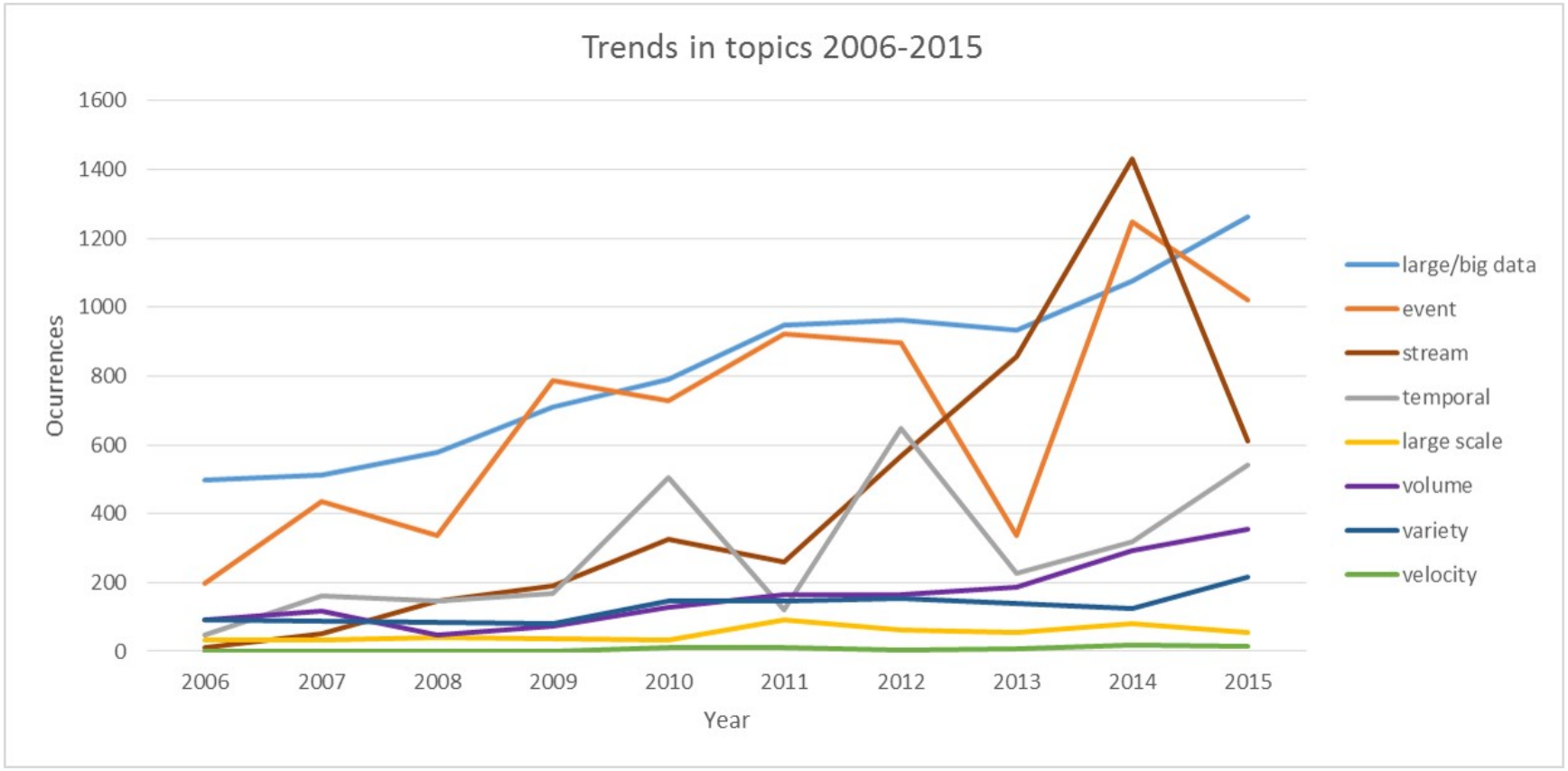

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Looking to the future

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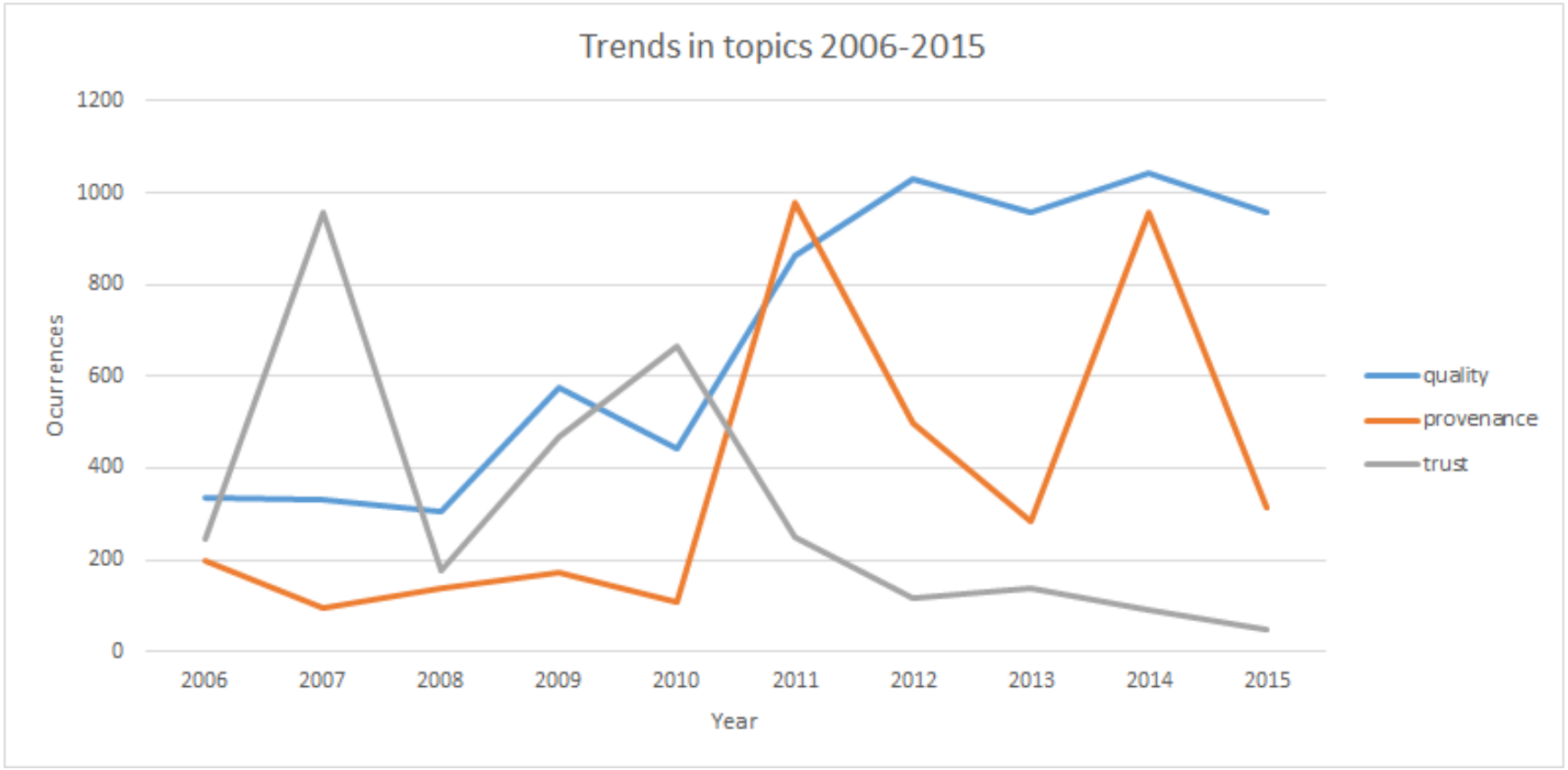

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