On the Uptake of Semantic Web Technologies

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Looking back

2006

Gartner on “Semantic Web” and “Corporate Semantic Web”:

5 to 10 years to mainstream adoption
Looking back

2006

The Advent of Linked Data

Transition from focus on ontologies to focus on RDF Data
Looking back

2010

Linked Data yields added value.

But there are quality issues.
Looking back

2012

Linked Data yields added value.

But there are quality issues.
Rapid Adoption of Linked Data

Benefits:
• Low barrier for finding and reusing data.
• Naïve combination of data easy.
• Become part of the Linked Data research train and hype.

Cautions:
• Not much help for semantic interoperability.
• Links to be taken with care.
• Best practices, methods, and tools not sufficiently developed.

Summary
• Immediate added value at low cost.
• Limited added value if it stops there.
Danger Zone

Rapid adoption may lead to

• underspecified data (due to missing or unclear ontological commitments)
• overloaded vocabulary terms, i.e. terms with multiple meanings in datasets, so that endowing them with a deeper semantics “later” becomes virtually impossible

Possible consequences:

• Substantial added value through semantification remains out of reach.
• Strengthening of semantics of vocabulary “later” may be very expensive.
• Data curation may no longer be feasible (e.g. due to loss of provenance- and other metadata).
Reduce overhead by

• reusing existing high-quality ontologies and ontology design patterns,

• having a clear understanding of the formal semantics of the adopted ontology language (e.g., OWL) and its implications, even if not fully used initially,

• beginning to plan the deep semantification *already in the early stages of the adoption of Semantic Web Technologies*. 
References


Gary Berg-Cross, Isabel Cruz, Mike Dean, Tim Finin, Mark Gahegan, Pascal Hitzler, Hook Hua, Krzysztof Janowicz, Naicong Li, Philip Murphy, Bryce Nordgren, Leo Obrst, Mark Schildhauer, Amit Sheth, Krishna Sinha, Anne Thessen, Nancy Wiegand, Ilya Zaslavsky, *Semantics and Ontologies for EarthCube*. 2012

References


