

Semantic Web in Enterprise

An Agile Startup Perspective

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Abstract. Since the Agile Manifesto was first published, uptake in enterprise of agile methods such as Scrum has been significant. In this keynote speech, the speaker explored how, for data-intensive projects that aim to be agile, a Semantic Web technology stack can have several important benefits over other approaches.

1 Agile Development

Agile development methods such as Scrum and eXtreme Programming (XP) have over the course of the last several years seen extensive adoption, particularly in startups and organisations adhering to Lean principles. While these methods differ somewhat in details, they share a set of base priorities:

- **Individuals and interactions**
over processes and tools
- **Working software**
over comprehensive documentation
- **Customer collaboration**
over contract negotiation
- **Responding to change**
over following a plan

In essence, a successfully managed agile startup is low on bureaucracy and overhead and high in flexibility and adaptability, which gives it key competitive advantages when compared to a traditionally run corporation.

2 Semantic Web in Startups

The speaker's own tech startup, InsightNG, develops a platform for information gathering, mapping and contextualisation, providing insight and answers supporting knowledge workers in complex decision-making and problem-solving situations. In order to support the user, data and vocabularies from several Linked Data sources are reused. The use of such Semantic Web resources provides InsightNG with several benefits, which the speaker believes can be applied to other startups also:

- quick integration of heterogeneous data sources
- flexible modeling of relevant information
- powerful querying capabilities

All of these benefits are of great use in a rapidly developing situation with changing requirements, such as is common in the development of a new software product. The data sources used today may differ significantly from the data sources needed yesterday or tomorrow. By employing Semantic Web ontologies to structure data, schema changes can be made cheaply and easily, avoiding the time consuming Extract-Transform-Load type processes commonly associated with changing schemas in traditional RDBMS systems. Additionally, the low cost associated with schema changes mean that data integration challenges can be met on a pay-as-you-go basis, being driven by direct business needs, rather than be planned far ahead.

The use of Semantic Web ontologies as knowledge models reduces the need for documentation, since the model becomes the documentation. This benefit is particularly useful to small organisations lacking resources for ambitious documentation projects. It is also helpful in teams with differing language skill sets, as is common in geographically distributed teams.

In terms of pitching Semantic Web technologies to investors, the reuse of real-world Linked Data resources enables an agile company to easily provide venture capitalists with more realistic demos of their product running on top of real data. This enables the startup to already from the outset focus on showing how their product or service provides customer value, which is essential in obtaining funding.

All of these benefits illustrate why startups wishing to be agile could themselves gain from using Semantic Web technologies. It is however also worth keeping in mind that those startups would not be the only beneficiaries of Semantic Web technology use, but that the increased use and adoption of these technologies could benefit the quality of the Web as a whole. Without business backing and solid customer value being generated, we are unlikely to see a true Web-scale adoption of these helpful technologies. By getting startups on board, the first few steps towards a more Open and Semantic Web are being taken.

3 Take Home Message

In summary, academics and practitioners attending this keynote should remember that:

- Agile methods and Semantic Web technology are natural partners in crime
- Pitching Semantic Web technology should focus on its flexibility and its fit with agile principles
- Openness will follow