The Semantic Web

The current World-Wide-Web has well over 1.5 billion pages in a range of different mediums and the need to organize this information is at its highest. ([http://www.csdl.tamu.edu](http://www.csdl.tamu.edu)) The vast majority of them are in human readable format only such as HTML. The Semantic Web is the revolution of information structure in an efficient way that information has exact meaning. This means that web pages are not only human-readable but can be processed by machines to read and interpret information allowing for sophisticated tasks to be achieved without human intervention. Although the Semantic Web is in its early stages around the world in organisations and cooperation web pages, is it capable of revolutionising something as enormous and rapid as the World Wide Web?

The Semantic Web, the project aimed at achieving to be the universal medium is bringing endless opportunities in machine-process able tasks. This will be achieved through the use of standards, markup languages and related processing tools. ([http://en.wikipedia.org/wiki/Semantic_web](http://en.wikipedia.org/wiki/Semantic_web)) However although highly spoken of, the issue of universal consistency is something that is being looked past. At the end of the day, machines will be able to interpret and be sophisticated in its tasks as far as the human intervention that set up the structure of the particular web page allows it to be. “Machines cannot understand data, reason or interpret meaning, they just process symbols.” ([http://www.hpl.hp.com](http://www.hpl.hp.com)) Hence the word Semantic causing a lot of confusion in what the Semantic Web is actually about.

Computers must have access to structured collections of information and rules in order for machines to be able to perform their specific jobs. However the quality of the access to this collection of information and instructions is in the human’s control. The intelligence of the machine is only as smart as the document it reads. And in my opinion, to get a high level of professional quality into these ontologies to make these documents ‘smart’ enough for machines to process efficiently and maintain it is a mammoth demand.

Issue of tools and languages –

In the Semantic Web context, ontologies play a necessary task in distinguishing relationships between different identifiers of the same concept. It is expressed in a document of statements that defines the links or relations among terms so that information from different databases can be combined to help achieve sophisticated tasks. These documents usually contain inference rules that although are very good in theory, can cause complexities when various information from various websites need to be allocated. The article () uses the example of zip codes and postal codes being the same concept but different identifiers which ontologies are able to solve. However this is just a simple example and does not really test the real life complexities of different countries, language and structure that RDF is supposed to be better at dealing with. Mark H. Butler, the the creator of the DELI open source API for Composite Capabilities has written a
number of articles regarding the Semantic Web and the extensive tools used. He states that, “Currently there is no standard approach to dealing with versioned vocabularies and this is a serious issue that needs to be looked at.”(1) The reality of ontologies created through RDF and XML is that there are theoretical limits to what they can describe, expensive to create and do not always reflect the way people think. (http://www.hpl.hp.com)

**Leaving the fairytale -**
Realizing the semantic web vision does not just depend on the technology is the first step to progressing as a project. There are a number of tasks that need to be achieved to set up the Semantic Web structure before any machine is able to process anything worthy without ‘human intervention’. The issue of organizations making data freely available is something very complex that is going to be dealt with if the Semantic Web is going to reach the goals they have set out to achieve. People and organizations making their data freely available by the web in such a way that it can be reused require open source data which is a behavior that a lot of organizations are unwilling to adapt to. (http://www.hpl.hp.com)

The opening Scenario used in the article extraordinarily impresses the typical reader about the Semantic Web. The story seems to be something from the future which it goes on further to say that this is the ‘evolved World Wide Web of tomorrow.’ This false sense of hope gathered from the reader is from something quite realistic to say the least. The complexity of this Knowledge Navigator-like approach to retrieve information and complete tasks that never seemed possible is highly unlikely.

The idea that the two siblings, Pete and Lucy will actually represent all their daily schedules to their smallest things such as their own appointments openly on the web is unrealistic. Who would be willing to inputting the various events from their calendars? This process is not only very time consuming that would heavily have to be updated and maintained, but also can invade privacy. Sharing calendars outside of one’s immediate social circle is quite a serious issue. (2) So although the scenario sets the tone for the rest of the article with the impressive commands that are reached by Pete and Lucy’s machines, the reality of it all when examined closer outweighs the theory side to it on a large scale. Another example in the Semantic Web ‘vision’ is that “metadata is distributed across the entire web so it highly likely that producers, consumers and beneficiaries will necessarily be disjoint.” Therefore each group including the doctor and insurance company does not necessarily understand each others needs. Therefore the metadata supplied by each may not be capable of supporting the group in the context that they’re asking. (http://www.hpl.hp.com) These issues of privacy, time consumption, metadata and so forth that can be seen from the scenario could bring serious problems of a level that the World Wide Web of today hasn’t even accounted or dealt with.
Bibliography


Butler, M. Barriers to real world adoption of semantic web Technologies, Hewlett Packard

Butler, M. Using capability classes to classify and match CC/PP and UAProf profiles, HPL Technical Report HPL-2002-89,

Butler, M. Using capability profiles for appliance aggregation, HPL Technical Report HPL-2002-173,

Butler, M 2005, Is the Semantic Web hype?, Hewlett Packard,

<http://www.csdl.tamu.edu/~marshall/ht03-sw-4.pdf> (accessed 15/09/05)