

Semantic Technologies at Boeing: Fact or Fiction?

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How are Semantic Technologies viewed in Boeing?

The landscape has changed...



5 years ago:

- “What is that?” “Why are you working on it?”



Today:

- Surprising recognition of the term “Semantic Technologies”
 - Many enquiries to our research organization about it
 - Very much on the radar
 - Seen as a **new “disruptive” technology**
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- **But:**
 - No one really knows what it is (!)

Semantic Technologies in Boeing

Background: Boeing has numerous AI-related applications, e.g.:

- Autonomous vehicles
- Knowledge-based engineering
- Data mining
- Information processing
- Natural language processing
- **Now:** Semantic Technologies?

Semantic Technologies in Boeing

- Interest/drive is coming from those setting **technology strategy** (rather than business units)
- Mainly research but applications emerging:
 - **Semantic Media Wiki**
 - Supporting a community of practice
 - Ontology-based **Expertise Locator**
 - Numerous research projects, e.g.,
 - **Ontology-based translation** (a Web service)
 - **Semantic information integration** (via neutral ontology)
 - **RDF stores** for design data
 - Semantic Technologies workshop (2005)

Boeing's Technical Expert Locator

- Uses Boeing's Thesaurus as ontology
 - 65,000 concepts, 300,000 relationships (isa, related-to)
- Search for experts in semantically related areas

The screenshot shows the Boeing Technical Expert Locator web application running in Microsoft Internet Explorer. The browser's address bar displays the URL: <http://pw-mct-epw-app1.nw.nos.boeing.com/sa/tftools/tfsearchfp.aspx>. The page features the TEL logo and the Boeing logo. Below the header, there are navigation links for "Technical Fellowship Website", "Expert Registration", and "Technical Principal Website", along with a link for "Technical Expert Locator Release Notes".

The main search area includes a "Search for:" section with three checked checkboxes: "Projects", "Documents", and "Experts". Below these are checkboxes for "Boeing Websites" and a "Num of Sites To Return" field set to "10". The "Search across:" section has a checked checkbox for "Technical Fellowship/Technical Principals".

The "Key Word(s):" field contains the text "propulsion control". There are "Search" and "Reset Search" buttons, and a link for "Search Hints".

The "Expert Search Criteria:" section includes several dropdown menus and checkboxes:

- Name (last, first):** An empty text input field.
- Program Affiliations:** A dropdown menu set to "All".
- Business Units:** A dropdown menu set to "All".
- Programs within:** A dropdown menu set to "All".
- External Technical Affiliations:** A list box with "All" selected. Other options include "Acoustical Society of America", "Advancing Minorities Interest in Engineering", and "Aeronautical Repair Station Association".
- Skill Management Code:** A list box with "All" selected. Other options include "Acoustic Analysis", "Advanced Computing", and "Aero Stab & Control Anlys".
- Language Skill:** A dropdown menu set to "All".

The bottom of the browser window shows the status bar with "Done" and "Local intranet".



Business Problem Areas ripe for Semantic Technologies

5 Potential Impact Areas:

1. Knowledge Management
 - Communities of Practice
 - Lessons Learned
 - Expertise Management
2. Information Integration & Interoperability
 - Data warehousing, unified data models
3. Improved Search
4. Intellectual Property (IP) Protection/Compliance
5. An Enterprise Semantic Web

Summary

- **Semantic Technologies** are
 - on the radar and of strong interest
 - seen as important, new technology
 - Just starting to yield applications
- **Semantic Wikis** may be the first impact area
- An exciting time to get involved!