Semantic Web Services Panel WWW12

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Obstacles: Need for Wide-spread Adoption

• Many of the benefits of Semantic Web Services (SWS) are dependent upon relatively wide-spread adoption of Web Service descriptions in a Semantic Web language.

• There is currently little incentive/business case for service providers to create such descriptions.

• Further, SWS foil the current business case for many Web sites, which is often based on advertising revenue. (With SWS, people won't necessarily go to web sites, computer programs will.)

• There are few tools to assist in the sometimes arduous process of creating SWS.

• Automating resulting from SWS can lead to lack of trust in the use of the Web.

Addressing the Obstacles

- **Intranets** should be the first implementation sites for SWS
    - no concerns over trust issues
    - clear business case = improved interoperation of company software, documents and services
    - reduced effort to build SWS descriptions

- Build **killer apps** that require SWS descriptions, giving incentive and a business case for the wide-spread adoption of SWS descriptions.

- Build **tools** to assist in creating SWS descriptions.
- Build tools for automatic generation of SWS descriptions.

- Encourage better **synergies with industry** to help in the construction of tools and killer apps.

One "Killer App"

If you're like most people, you spend a lot of time on the Web

- locating relevant information from disparate places & synthesizing it;
- looking for appropriate services to perform transactions for you, predicated on the information you've collected;
- the interplay between the two above

This interaction commonly exists when researching a topic of interest, shopping for items, planning travel, etc.

Imagine if you could severely reduce the hunting and pecking for information. Imagine if you could make a request to the Web to, e.g.:

"Buy me 'The Culture of Fear' by Barry Glassner."

"Plan my vacation to the Patagonia (following my preferences and constraints), but check with me before booking"

"Find me a service that will ship frozen vegetables from San Francisco to Saskatoon."

"Killer App": Automated SWS Composition

This can be achieved by Automated SWS Composition.

Given SWS and a description of a user's objective (possibly combined with some reusable user preferences and constraints), synthesize and execute one or more web services to achieve that objective.

When Web Services only provide information
   Automated SWS Composition = Information Integration

When Web Services have transactional elements (side effects)
   Automated SWS Composition = AI planning & execution

Many researchers including us at Stanford, researchers at Yale, U. Maryland, etc. are tackling this issue.