Service-Oriented Computing: Multiagent Foundation, Robust Applications, and Research Agenda

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In contrast to the original Web's content, which was designed for human use and comprehension, the Semantic Web's content is for computer use and understanding. Many organizations are attempting to make the Web computer-friendly via Web services, but current incarnations of these technologies are subject to several limitations:

- A Web service knows only about itself — not about its users, clients, or customers.
- Web services are not designed to use and reconcile ontologies among each other or with their clients.
- Web services are passive until invoked; they can't provide alerts or updates when new information becomes available.
- Web services do not cooperate with each other or self-organize, although they can be composed by external systems.

Overcoming the limitations appears to require agent-like capabilities. Agents have the potential to harmonize Web services' behaviors and reconcile and exploit Web sources' semantics. This talk focuses on the role of agents as next-generation Web services and the business advantages that will result. It also specifies the research that is needed to achieve the results.

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