Panel: A Research Agenda for Service-Oriented Architecture

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Service-Oriented Architecture (SOA) is having a significant impact on the way software systems are developed. Organizations as diverse as banks, health care providers, and government organizations are focusing on SOA as a way to reach a previously unachievable level of interoperability among systems and agility within business practices.

Work on SOA is being implemented by organizations across many domains:

- Standards organizations such as W3C, OASIS, and The Open Group are developing standards and definitions related to SOA.
- International efforts such as the European Union’s ATHENA project have completed a research program establishing how SOA can help to enable enterprise interoperability. This work has resulted in the establishment of a permanent Enterprise Interoperability Centre (EIC) to foster research and practice in enterprise interoperability.
- Federal agencies such as U.S. Transportation Command and Housing and Urban Development (HUD) are embracing SOA for information sharing projects.
- Major vendors such as IBM, SAP and Oracle, and smaller vendors such as Mercury and Systinet, are developing new services and software markets around SOA.
- US DoD efforts such as SOSCOE and NCES are developing infrastructures to allow user organizations to create applications from services that are defined and exposed from a number of existing systems.

- The list of industrial implementation case studies is expanding rapidly as shown by examples published by major companies such as Intercontinental Hotel Group, Wachovia Bank, Rockwell Collins and Con-Way.

Although significant progress has been made, these current efforts in SOA are evolving in many directions without a central compass. There is no central focus or overall research program. Current research is driven by a market economy and done in a “fire hose” way to address the next problem or expectation. This has resulted in confusion and can threaten to result in long-term chaos. For example, the three standards organizations mentioned above are all working on similar SOA and Web Service standards, and more standards groups are emerging every day. In the arena of web services alone, there are over 250 different standards! There is a serious danger that important research needs will be overlooked, while other efforts will focus on issues of peripheral long-term significance. As a result of this research vacuum, there is a need for a concerted effort to develop a long-term community-wide research agenda for SOA.

The main goal of this panel is to invite researchers and practitioners in the area to present what they consider are open research issues in this area to initiate a good discussion with the audience. The panel discussions will be consolidated into a summary report and used as input for the proposed research agenda for SOA. This agenda will be published as an SEI Technical Report.