Business-Driven Management and Governance of Service-Oriented Systems

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Abstract:

Management (monitoring and control) of service-oriented systems is needed to ensure their regular operation, attain guaranteed quality of service (QoS), and accommodate changes. Monitoring measures technical QoS (e.g., response time, availability) and/or business value metrics (e.g., profit, return on investment, customer satisfaction). Control ensures (reactively and/or proactively) that there are no faults and that the measured quantities are within desired boundaries. IT (information technology) governance is a set of organization’s policies, plans, and processes that direct how its IT resources are used over a longer time. To be successful, management and governance issues should be considered not only during deployment and run-time, but also during design-time software engineering activities.

We present how service-oriented software systems can be made more successful from the business viewpoint by using governance and management that maximizes business value metrics. The tutorial first clarifies importance of these topics and why the widely used basic Web service technologies are not enough. Then, it explains theoretical principles for specification, monitoring, and control of QoS and business value metrics. It also provides a critical analysis of several important research achievements and industrial products in this area. Then, we present an introduction to business-driven IT management (BDIM) and possible approaches to extend management solutions maximizing QoS into solutions maximizing business value metrics. Furthermore, we overview the major IT governance frameworks and discuss their relevance for value-based software engineering of service-oriented systems. At the end, a number of open topics and resources for further study are identified.

About the presenters:

Claudio Bartolini is a Principal Researcher at HP Laboratories in Palo Alto, USA. His background is on architecture and design of software systems and frameworks. His current research interest is in methodologies for business and IT alignment. In addition to many journal, conference, and workshop papers and book chapters, he co-authored the W3C WSCL specification and holds a number of patents in various countries. He chaired a number of conferences and workshops and presented tutorials at several international conferences. Claudio envisioned, founded and chairs the series of IEEE workshops on business-driven IT management (BDIM) since 2006. Web page: http://www.hpl.hp.com/personal/Claudio_Bartolini.

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