

MESOA 2010

4th International Workshop on Maintenance and Evolution of Service-Oriented Systems

Organizers:

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Software Engineering Institute

Carnegie Mellon

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Welcome

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Agenda

10: – 11:00	Workshop Introduction <ul style="list-style-type: none">• Welcome (<i>Dennis Smith, Software Engineering Institute, USA</i>)• A Research Agenda for Service-Oriented Architecture: MESOA Contributions to the Evolution of the Agenda (<i>Grace Lewis, Software Engineering Institute, USA</i>)
11:00 – 11:15	Coffee Break
11:15 – 12:15	Session 1: Evolution of Service-Oriented Systems <ul style="list-style-type: none">• Using Simulation Models to Evolve Business Processes (<i>Marin Litoiu, York University, Canada</i>)• Requirements Driven Framework for Root Cause Analysis in SOA Environments (<i>Hamzeh Zawawy, University of Waterloo, Canada</i>)
12:15 – 12:45	Session 2: Migration of Legacy Systems to SOA Environments <ul style="list-style-type: none">• SOA Integration as an Alternative to Migration (<i>Harry Sneed, ANECON GmbH, Austria</i>)
12:45 – 14:00	Lunch
14:00 – 14:30	Session 3: Dynamic Adaptation <ul style="list-style-type: none">• A Dynamic Framework for Quality Web Service Discovery (<i>Hausi Müller, University of Victoria, Canada</i>)
14:30 – 15:00	Discussion on SOA Technologies and Trends (<i>Kostas Kontogiannis, National Technical University of Athens, Greece</i>)
15:00 – 15:15	Coffee Break
15:15 – 16:15	Session 4: SOA Governance for Evolution <ul style="list-style-type: none">• Characterizing Policies That Govern Service-Oriented Systems (<i>Hausi Müller, University of Victoria, Canada</i>)• Context-Driven Adaptive Monitoring for Supporting SOA Governance (<i>Norha M. Villegas, University of Victoria, Canada</i>)
16:15 – 16:30	Coffee Break
16:30 – 17:00	Invited Session: Challenges for Maintenance and Evolution of Service-Oriented Systems at Credit Suisse (<i>Carl Worms, Credit Suisse, Switzerland</i>)
17:00 – 17:30	Workshop Review and Next Steps , (<i>Grace Lewis, Software Engineering Institute, USA</i>)



SOA Research Agenda

Research framework based on an ideal life cycle for service-oriented systems

Taxonomy of research topics required for short-term and long-term strategic SOA adoption

- Rationale
- Current Efforts
- Challenges and Gaps



Research Challenges and Opportunities Identified at MESOA 2007 ₁



- Balance of maintenance types in service-oriented systems
- Characterization of the preparation phase for SOA adoption
- Effects of governance and compliance on maintenance and evolution of service-oriented systems
- Effects of process maturity on service-oriented systems maintenance
- Implications of autonomic computing and monitoring for maintenance and evolution of service-oriented systems
- Models for ROI of SOA adoption and evolution
- Retirement of services
- Runtime validation of compliance to evolving business processes
- Service identification from legacy code
- Software reusability effects on service-oriented system maintenance
- Testing of services and service-oriented systems
- Trust, certification and verification of services



Research Challenges and Opportunities Identified at MESOA 2008 ₁



Testing in SOA environments

- Exception-oriented testing
- Effects of SOA 2.0 and event-driven architecture on testing
- Effects of dynamic service composition on testing
- Test automation that generates large volumes of relevant test cases
- Service granularity appropriate for testing
- Rules for web service interface definition
- Metrics for measuring web service interface definition quality—static and runtime



Research Challenges and Opportunities Identified at MESOA 2008 ₂



Legacy System Migration to SOA Environments

- When is new development a better option than legacy system migration or simple web migration?
- Is it possible to define cost-effective SOA migration strategies for non-decomposable legacy systems?
- Metrics for system decomposability
- Mapping of business objectives to migration strategies

Runtime Monitoring of Service-Oriented Systems

- Construction of models for indicators
- Managing and leveraging uncertainty
- Making control loops explicit
- Maintainability concerns for self-adaptive service-oriented systems compared to static, non-adaptive service-oriented systems



Research Challenges and Opportunities Identified at MESOA 2009 ₁

Tools for Migration to SOA Environments

- Common software evolution platforms
- Support for model evolution
- Support for model co-evolution
- Improved predictive models

Case Studies in Systems Migration to SOA Environments

- Because of incremental evolution, most migration efforts will have to deal with “recent legacy”
- Multiple socio-technical issues, where governance is just one aspect
- Creation of technology-agnostic adapters
- Creation of the link between technology and business
- “Double evolution”: different timelines between the evolution of a legacy system and an application developed from services that derive from the legacy



Research Challenges and Opportunities Identified at MESOA 2009 ₂

SOA Governance and Service-Oriented Systems Evolution

- Definition of models for feedback loops
- Mechanisms for managing and leveraging uncertainty
- Mechanisms for making control loops explicit in service-oriented systems

Longer-Term Research Topics in Maintenance and Evolution of Service-Oriented Systems

- SOA programming models
- System management and runtime infrastructure
- SOA maintenance and evolution
- SOA requirements engineering
- Service versioning
- Property tracing
- Smart service infrastructures
- Logging, monitoring and diagnostics in SOA environments
- Data-centric services and infrastructure



Research Challenges and Opportunities Identified at MESOA 2009 ₃

Panel—Challenges for Maintenance and Evolution of Deployed Service-Oriented Systems

- Service versioning
- Training and education
- Testing
- Root cause analysis
- Proposed research topics
 - Governance-driven development
 - Lean SOA



Focus of MESOA 2010



Continue sharing current efforts in the maintenance and evolution of service-oriented systems

Identify areas of future work to address existing gaps and problems



Session Logistics



Session Format

1. Introduction
2. Invited Talks or Panel
3. DISCUSSION

Other Notes

- We expect a highly interactive session
- We will be taking notes throughout the day and present a summary at the end
- Talks and summary will be available in PDF format on the MESOA web site (<http://www.sei.cmu.edu/workshops/mesoa/2010/>)



Introductions



Briefly state your name, organization, and workshop expectations



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