
Service Oriented Applications Position Statement

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Distributed App. Engineering

◆ Needs

- Hide diversity & complexity
- Enable cooperation between heterog. SW systems

◆ Multiple OSs

◆ Middleware

◆ Multiple Middleware

◆ WS Tech (Apache WSIF)

◆ ... a recurring story or poor re-invention of a wheel?

◆ Started simple, became more and more complex

◆ Practice far ahead of theory but ...

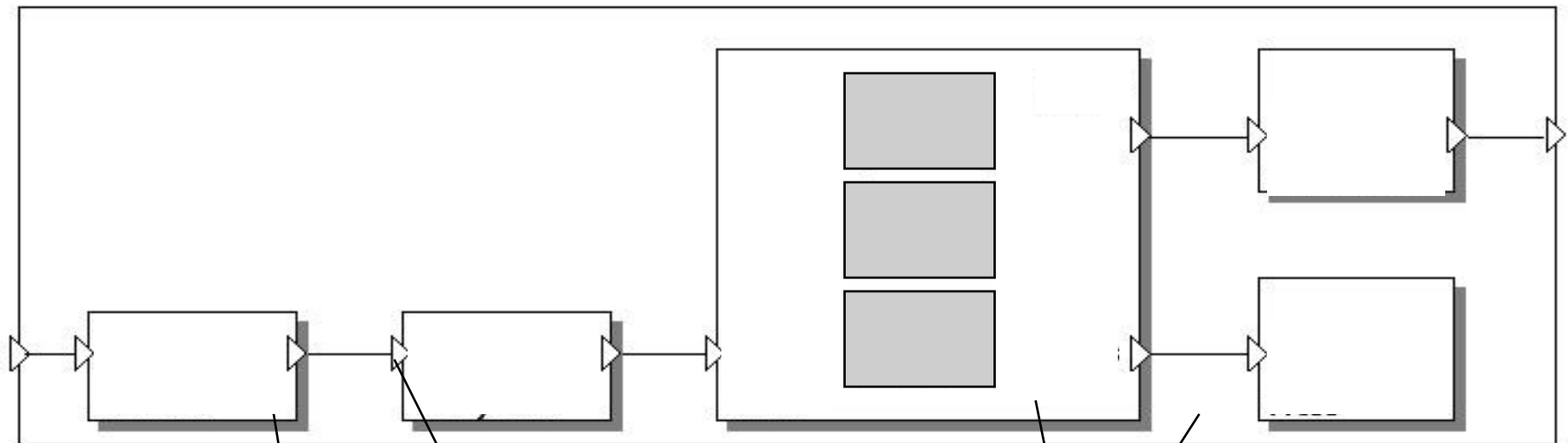


Critical Factors

- ◆ Improved Interfaces (sig., consistency constraints, interaction prot., props [e.g. QoS], metrics)
- ◆ Security (not component-based)
- ◆ Management (ensure proper & optimal operation)
- ◆ Autonomicity (self-*)
- ◆ Trust (depending on the criticality of app.)
- ◆ Traditional Debugging tools fail
- ◆ Discovery (match, rank, compare, select, negotiate, authenticate, plan, compose, enact)
- ◆ Payment
- ◆ Responsibility Assignment & Tracking
- ◆ Composition / Orchestration Model



Service Composition



address,
port ref

composite service

sw processing XML docs



Separation of Concerns: Layered Service Architecture

WS Technology Stack

...

BPEL4WS, ...	Coordination
WS-Transaction	Quality of Service
WS-Coordination	
WSDL, UDDI, ...	Description
SOAP	Messaging
XML, URI	
HTTP, TCP/IP, proprietary msg sys	Transport

- ◆ SOAP APIs not standardized, don't hide transport details, Sun's bin protocol, ...
- ◆ Integration of application data
- ◆ ISO Standard 9126 (Software Quality criteria)



Realities

- ◆ The kid is 5 years old
- ◆ early adopters, entry of mainstream customers
- ◆ Still many applications inside enterprise to integrate disparate solutions
- ◆ Significant standards still lacking
 - WS-* (Bea, IBM, MS; consistency, overlap, necessity)
 - WS architecture stack
- ◆ Choreography / Business-Process-Modeling rather programming than design



Potentials, Promises, Dangers

- ◆ Programming-in-the-large may finally become reality
- ◆ Outsourcing of WS P-in-the-small
- ◆ Real Software Reuse

