SLA-aware service stacks.

Infrastructure requirements from a service perspective.

Future Internet Assembly
Madrid, December 9 2008

Joe Butler – Intel IT Innovation / R&D.
Agenda

SLA@SOI – project overview

Infrastructure architecture

Use case features
Business Motivation

Vision
- A business-ready service-oriented infrastructure empowering the service economy in a flexible and dependable way.

Business-readiness requires
- predictability & dependability $\Rightarrow$ prerequisite for acceptance & uptake of (new) services
- holistic SLA management $\Rightarrow$ transparent IT management
- automated negotiation $\Rightarrow$ dynamic, scalable service consumption

Impact on the knowledge economy
- decreased time to market for new services
- increased productivity and competitiveness
- lower entry barriers, especially for SMEs
Project innovation

Main innovations

■ SLA management framework
  ■ harmonizing perspectives of relevant stakeholders (software/service/infrastructure provider and customer)
  ■ standards for SLA specification and negotiation & systematic multi-layer SLA management (planning, optimization, and provisioning), monitoring and accounting
    ▶ guaranteed QoS in a dynamic and end-to-end fashion via consistent SLA handling across IT stack

■ adaptive SLA-aware infrastructures
  ■ standardized interfaces for adaptive infrastructures with harmonized access to different virtualization technologies.
  ■ advanced technologies for SLA enforcement on infrastructure level
    ▶ efficient resource usage w/ reliable SLA enforcement at infrastructure level

■ engineering methods for predictable service-oriented systems
  ■ modelling techniques and prediction tools for SOA and SOI components

■ business management suite for e-contracting
  ■ covers complete business lifecycle of a service provisioning/delivery
Agenda

SLA@SOI – project overview

Infrastructure architecture

Use case features
Architecture model definition and integration.
Agenda

SLA@SOI – project overview

Infrastructure architecture

Use cases and service features
Industrial use-case range

Open Source

SLA Core Architecture

Reference Implementation

NESSI Open Framework

Standardization

Reference demonstrator

ERP Hosting

Enterprise IT

Serv. Aggreg.

eGoverment

Financial Grids

- ERP as a service
- business value chains
- dynamic comprehension of service stack provisioning and business value
- user segmentation and predictive analysis
- public SLAs
- agreements driven by social aspects (not market logics)
- innovative financial products
- spatial-aware SLAs

Industrial Evaluation Report: “How to run an SLA-driven business”
Service Features

Hugely diverse software service landscape –
- Scale, lifecycle, volume, traffic type, criticality, revenue, NFP requirements.

Virtualised, distributed infrastructure landscape will be adaptive:
- Telco services – quad-play, routing : VOIP/trunking arbitrage.
- Long-running, high value, mission critical (enterprise).
- Short-running, personalised, advertising-driven (consumer, social media),
- QoS constraint driven – e.g. data proximity,
- Spatial constraint driven – e.g. financial services data.

Complex SLA lifecycle – planning/provisioning/runtime.

Enabling features:
- Meta-model interoperability for atomic and composed infrastructure services,
- Harmonisation of interfaces,
- Transparent monitoring and logging,
- Holistic value-dial assessment models,
- Auditability of resource consumption.
Thank you!