

SLA@SOI and its Strategic Relevance for SAP

Dr. Wolfgang Theilmann

Project Lead SLA@SOI; Research Manager Platform Engineering

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SAP RESEARCH



Part 1: SLA@SOI...

Mission & Results



**The service marketplace
is
frustrating and cumbersome
for both
service providers and
consumers**

Motivation: Challenges, Goals, Vision



Service Consumer

- lack formal SLAs
- search standardized way to negotiate

Flexible usage of dependable services

Software Provider

- struggle to understand the behaviour of their SOA stack

Engineering of predictable services

Service Provider

- challenged to provide customized, dependable services at low cost

Automated SLA negotiation and management

Infrastructure Provider

- virtualization technologies allow for adaptive SOIs

SLA enforcement via adaptive infrastructures

Vision of SLA@SOI

An invigorated European economy thriving on a market of dependable services empowered by SLAs

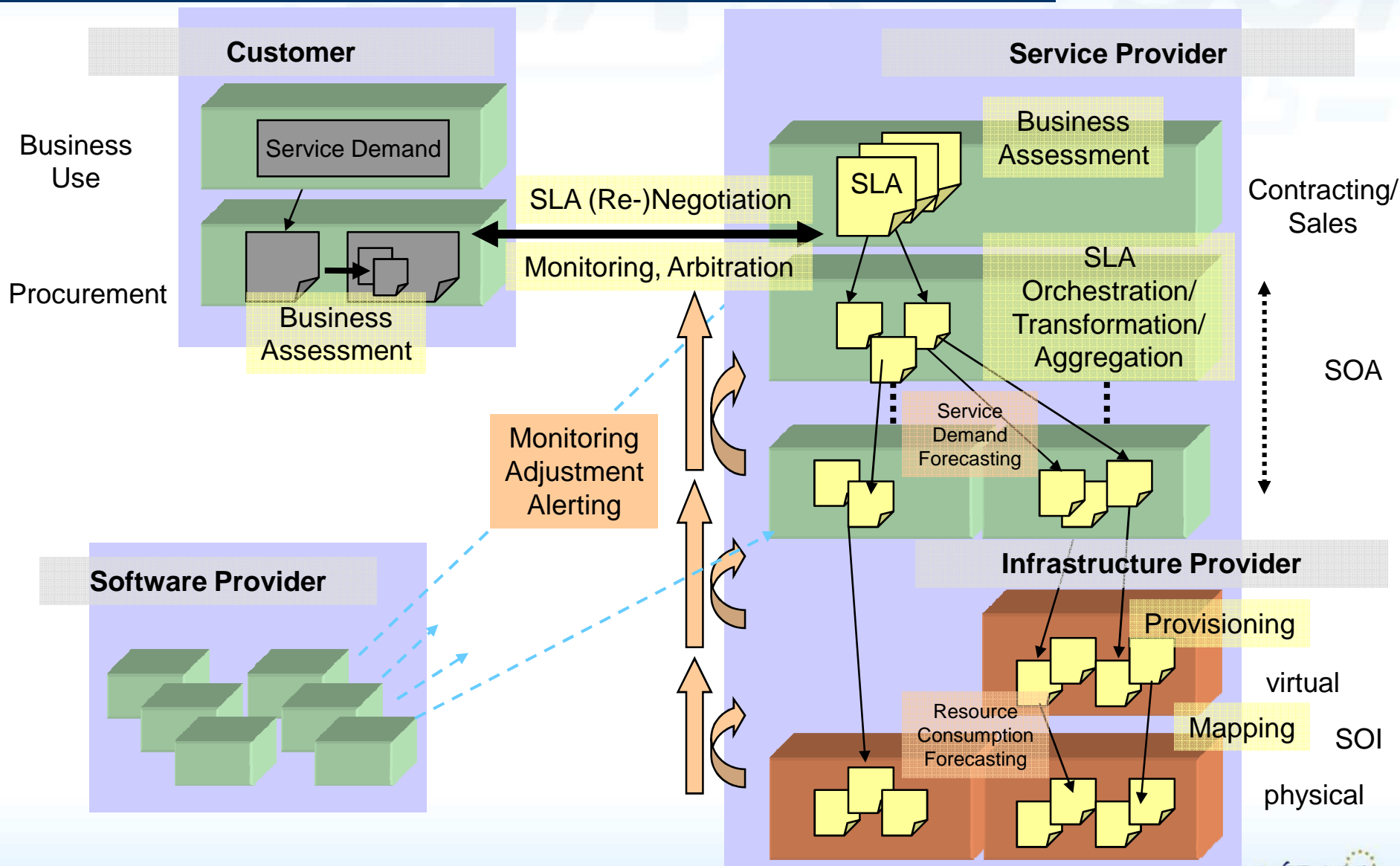
Mission

- to deliver and showcase an innovative open SLA Management Framework
 - ◇ that provides holistic support for service level objectives
 - ◇ enabling an open, dynamic, SLA-aware market for European service providers

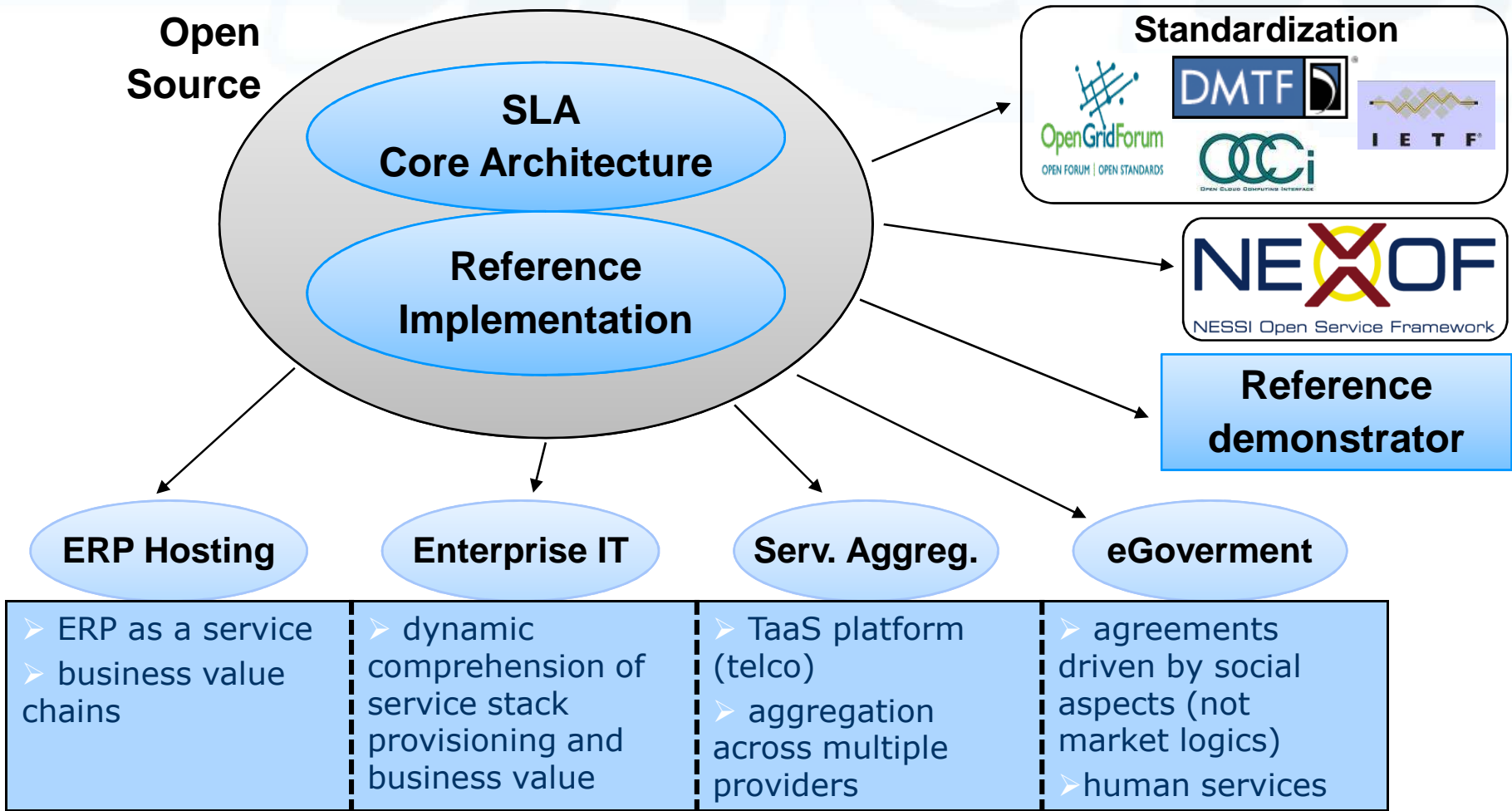
Expected Benefits

- **more dynamic:**
 - ◇ reduced preparation / setup time
- **more dependable**
 - ◇ through holistic SLA support
- **more automated and thus cost efficient**
 - ◇ automation of service management procedures
- **more flexible**
 - ◇ simplifying the adjustment or reprovisioning
- **more transparent**
 - ◇ understanding cost drivers and non-functional properties

Envisioned Interaction



Main project results



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

What is a service in our scenario?

Which core functionality is needed?

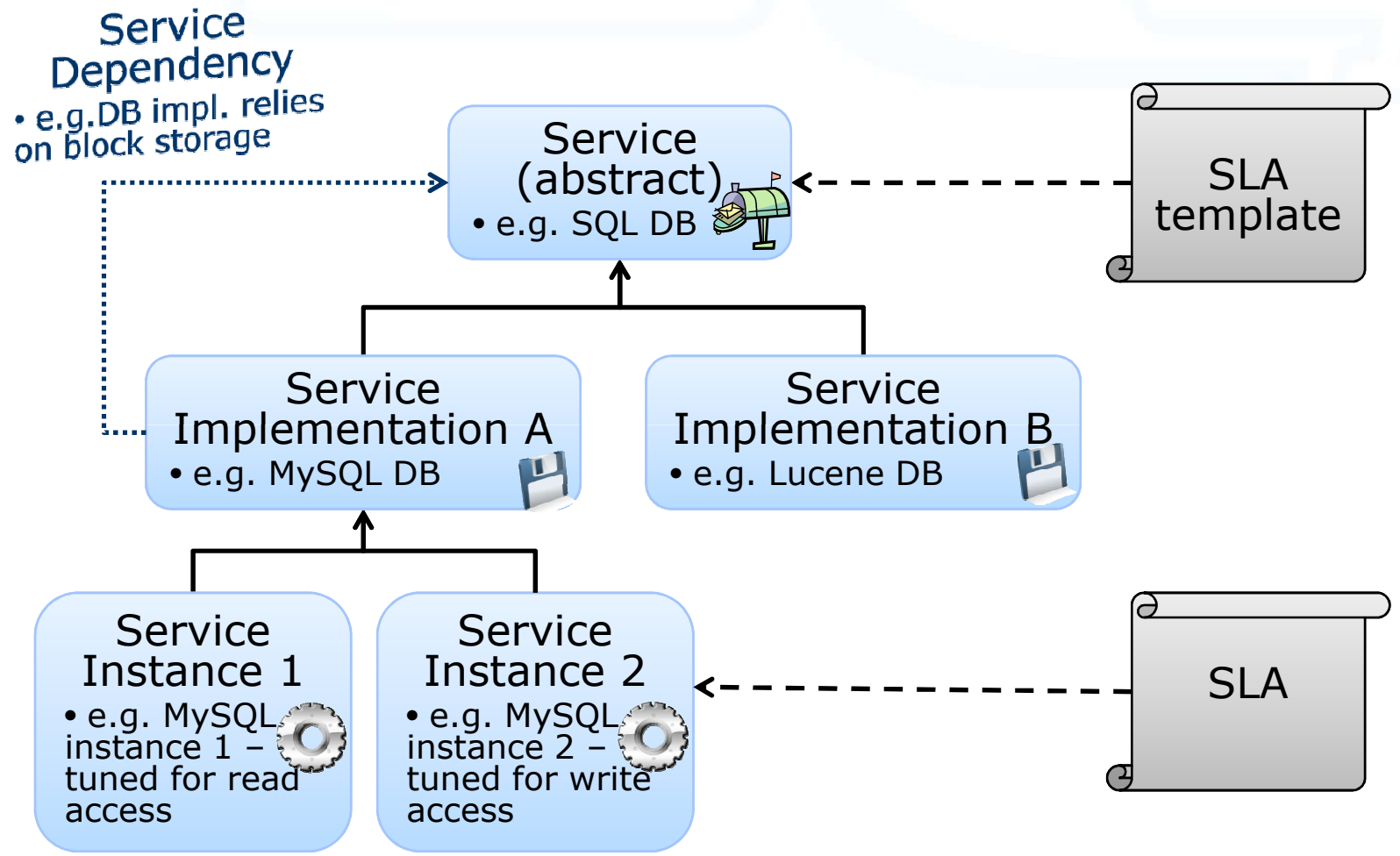
Reference architecture for an SLA-management framework

1. multi-layered SLA management
2. arbitrary service types
3. complete SLA and service lifecycle
4. flexible deployment setups

How to specialize and extend?

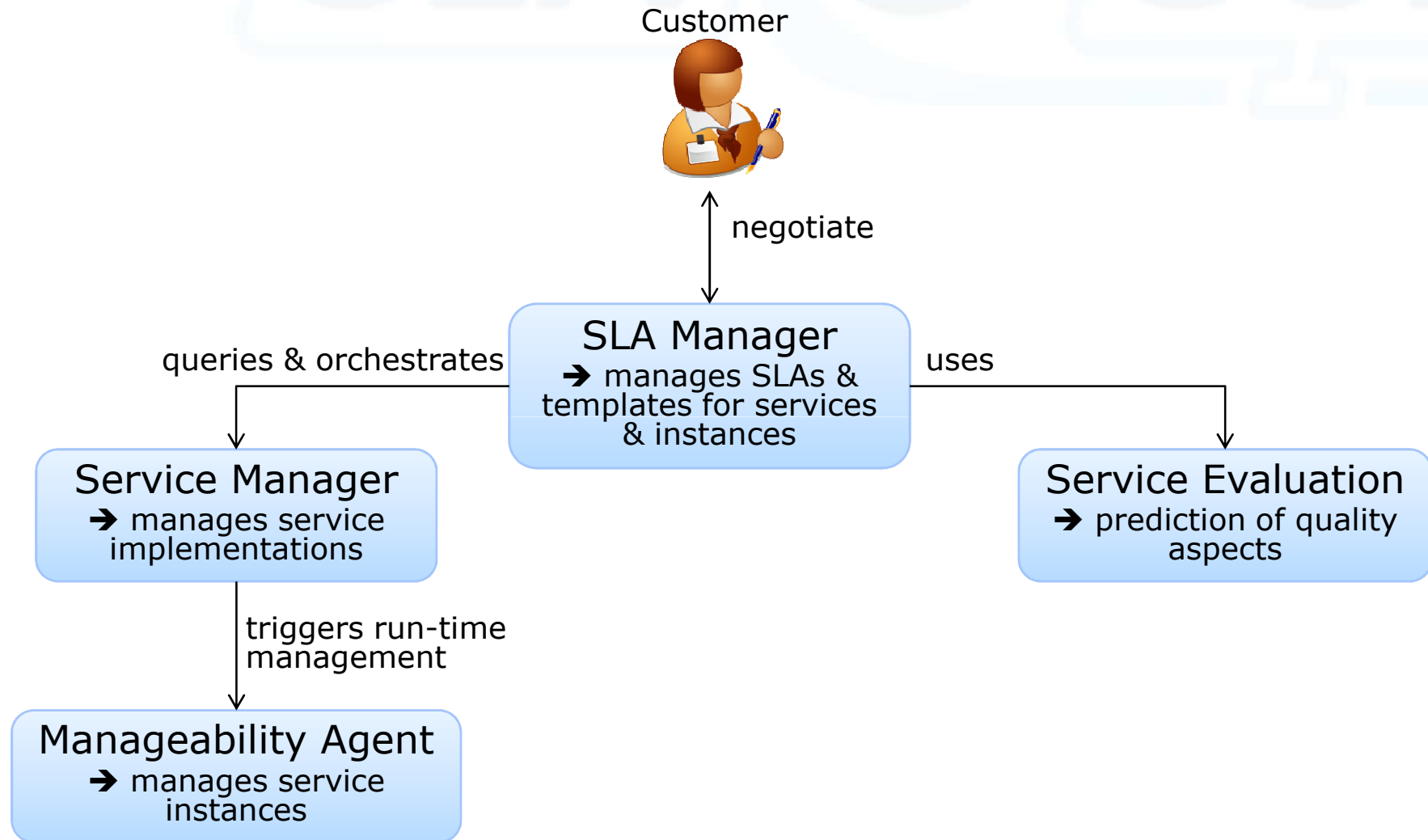
How to support layers?

What is a Service?



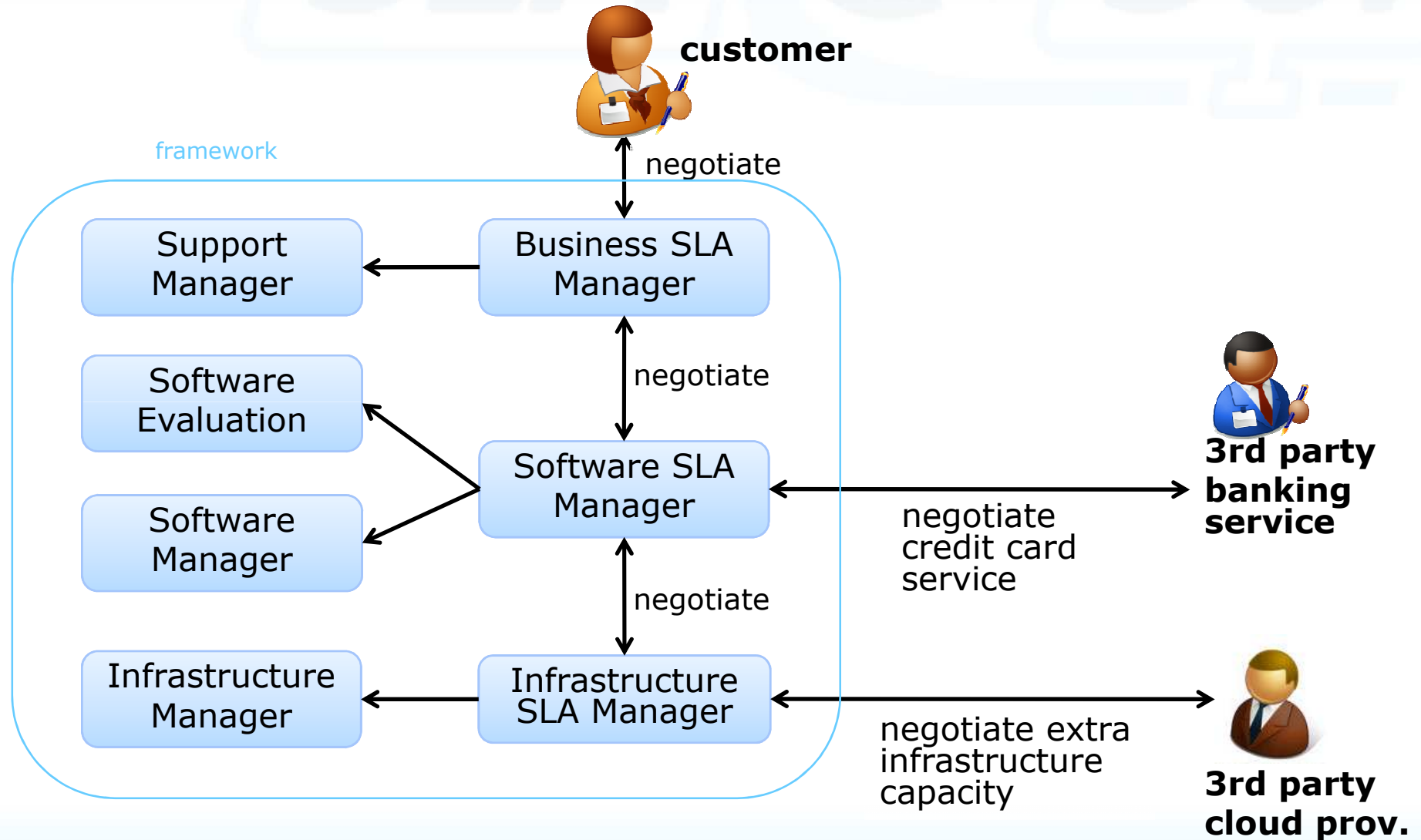
→ Sound understanding of service artefacts & relations

Which Functions are needed?



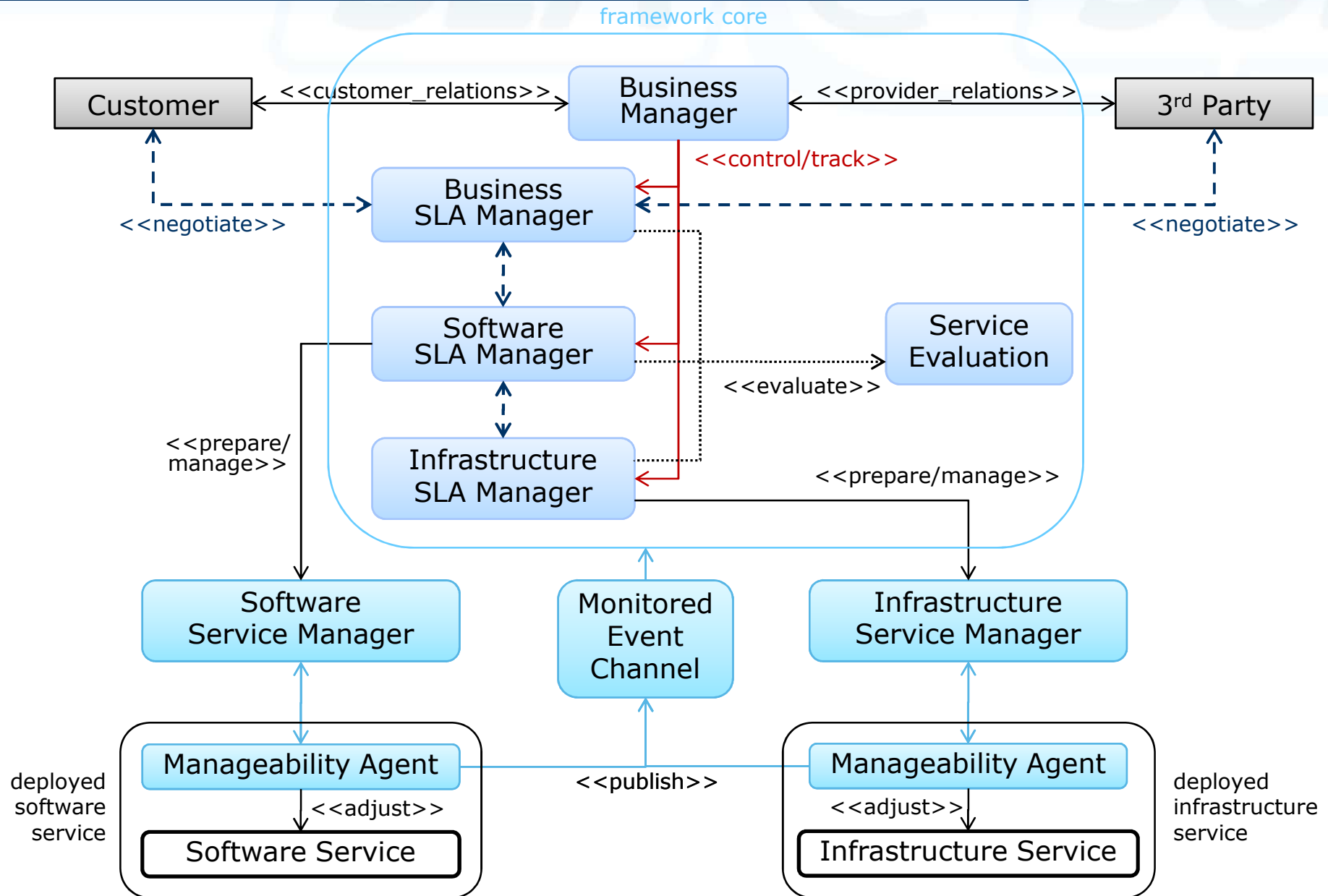
→ Few Building Blocks with clear responsibility

Example Setup: Web Shop as a Service



→ Flexible Framework Setups for different Domains

Altogether: Reference Architecture



Conclusions



Reference Architecture

- Provides glue for consistent harmonization of all project innovations
- Covers design-time and run-time
- Relies on common modelling basis
 - ◇ SLA model, service construction model, infrastructure model (OCCI), prediction models (PCM)

Adoption in 4 industrial use cases

- 3 of them shown today

More info

- WebSite: <http://www.sla-at-soi.eu/>
- OSS Project: <http://sourceforge.net/projects/sla-at-soi/>





Part 2: ... its strategic relevance for SAP

CLOUD DEFINITION

HOW THE MARKET UNDERSTANDS IT

**What is
“Cloud”?**

A Cloud service is

- **delivered via Web**
- **short time to value**
- **pay-per-use**
- **massively scalable**

| Strategy | Category |
|------------------------|------------------------------------|
| Cloud Services | Software as a Service (SaaS) |
| | Platform as a Service (PaaS) |
| | Infrastructure as a Service (IaaS) |
| Enabling for the Cloud | Virtualization |
| | Hosted OnPremise |

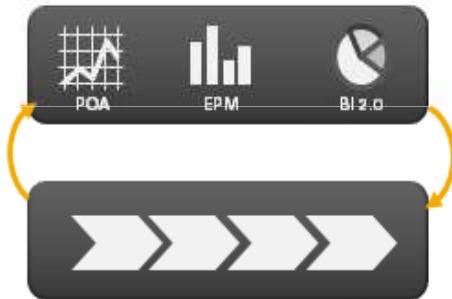
CLOUD BENEFITS

WHAT WE HEAR FROM CUSTOMERS AND PROSPECTS



People

- Insight, mobility, collaboration, personalization



Large Enterprise

- Continuous innovation at the core without disruption
- New ways to streamline and improve processes in lines of business
- Improve decision making
- Improve TCO and time-to-value
- Need to support business networks



Small & Midsize Enterprises

- Establish business core without CAPEX
- Enable growth, globalization and efficiency
- Flexibility to start small and expand

SAP CLOUD POINT OF VIEW

ON PREMISE, ON DEMAND AND CLOUD CO-EXISTENCE






- **Hybrid business solutions and networks** are becoming the norm
- Companies will choose services
- **Deployment choice** and flexibility
 - for **different purposes**
 - from both **public and private clouds**
 - **integrated** with On Premise solutions
- **Openness and ecosystem strength** will be key success factors for providers
- **Orchestration** of hybrid solution landscapes will become key

SAP CLOUD STRATEGY OVERVIEW:

WHERE DO WE PLAY?

| Strategy | Category | SAP Approach | Comments |
|------------------------|------------------------------------|--------------|--|
| Focus Cloud Areas | Software as a Service (SaaS) | ✓ | Primary focus – extend SAP leadership in business applications to On Demand |
| | Platform as a Service (PaaS) | ✓ | Co-innovation with partners based on SAP On Demand platforms |
| | Infrastructure as a Service (IaaS) | X | Run own SaaS and PaaS offerings but do not participate in generic IaaS market |
| Enabling for the Cloud | Virtualization | ✓ | Provide tools content, & certification for public/private clouds to run On-premise SAP solutions, enable Cloud vendors |
| | Hosted OP | P | Enable partners act as multipliers e.g. with hosted Rapid Deployment Solutions, self-serve test & demo environments, hybrid clouds with their own partners ... |

 Actively participate
  Do not Play
  Partner

COMPREHENSIVE ON DEMAND PORTFOLIO

SEAMLESSLY INTEGRATED FOR A HYBRID WOLD



Companies

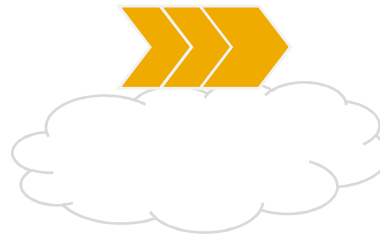


SAP Business
ByDesign

SAP Business
ByDesign for
Subsidiaries

ByD based
Partner
Solutions

Departments



Sales
OnDemand

Career
OnDemand

Carbon Impact

Travel
OnDemand

Sourcing
OnDemand

People



BI
On Demand

SAP
StreamWork

OUR CLOUD COMPUTING STRATEGY FOR SUCCESS

FOUR KEY AREAS OF INNOVATION AND INVESTMENT

- 1 Solutions for the Cloud**
ByD as OD suite (SME, LE)
On Premise solutions ready for private
and public computing clouds

- 4 Co-innovation in the Cloud**
ByD as platform for partners to build
extensions
Ecosystem play with attractive
reseller, solution, service partners



- 2 Cloud: New Ways to Sell & Buy**
SAP Store at the core of an e-
channel for SAP
Consistent E2E experience from
Web presence, store, and product

- 3 Cloud Operations & Infrastructure**
In-memory ready cloud to enable innovation
Best service at Lowest Cost through
optimization across all layers

OUR CLOUD COMPUTING STRATEGY FOR SUCCESS

WHERE SLAs MATTER

1 Solutions for the Cloud

- Basic SLA support
- Enable trusted solutions

4 Co-innovation in the Cloud

- SLA support for partner solutions
- SLAs for partner app (operators)
- Based on platform SLAs



2 Cloud: New Ways to Sell & Buy

- SLA offerings
- SLAs customization

3 Cloud Operations & Infrastructure

- SLA translation to infrastructure
- SLA-aware workload management
- SLA-aware elastic scaling

Summary

SLA@SOI and its Strategic Relevance for SAP

SLAs are of strategic importance for SAP's cloud strategy

To enable the cloud model

- For larger sets of (critical) business applications

To manage hybrid landscapes

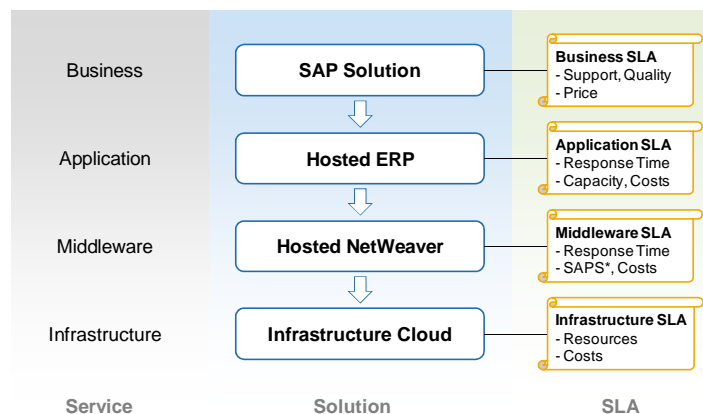
- SLAs between on-demand and on-premise systems

To support co-innovation

- SLAs for/between partner apps and SAP's business process platform

See our demo pod

- SLA@SOI framework applied to SAP solutions





Thank You!

Contact information:

Wolfgang Theilmann

Project lead SLA@SOI; Research Manager Platform Engineering

SAP Research Karlsruhe, Germany

wolfgang.theilmann@sap.com

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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