

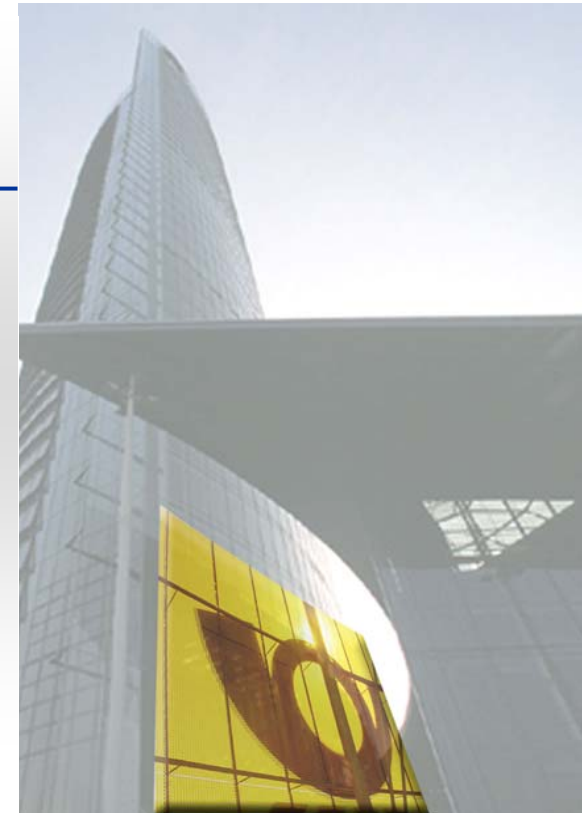
Enterprise SOA – Service activity monitoring

SOPSOLUTIONS

Michael Herr
Head of SOPSOLUTIONS®

CITT Expertengespräch, 19. Juni 2006

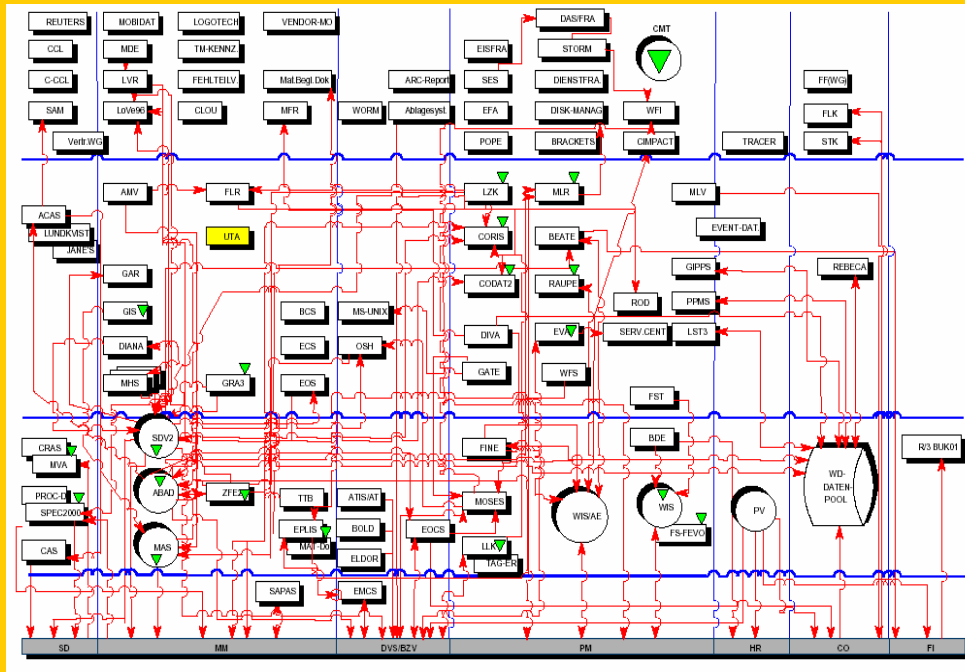
- Business oriented SOA: Agility and Flexibility
- Application Integration: Policy-driven ESB
- Process Integration: Service orchestration
- SOA Events: Management of SOA Services
- SOA vision and outlook



Are you familiar with this situation?

Initial situation MAIL

1999



■ **High redundancies** through isolated „stovepipe“ solutions

■ **Missed business opportunities** through lacking/inconsistent information, little exchange, unclear data ownership

■ **High cost of maintenance/ modification/extension** through unmanaged „spaghetti“ interfaces

Source: Deutsche Post World Net

What is the IT challenge in today's fast moving world?

Changes in the Process Architecture influence directly the IT Application landscape – and vice versa

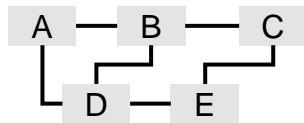
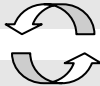
Objects of discourse

Process architecture



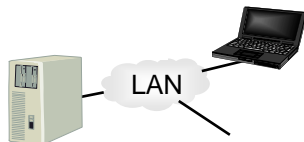
- Business processes
- Business rules

Application architecture



- Applications
- Databases
- Connectivity

Infrastructure architecture




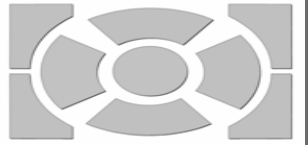
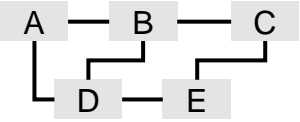
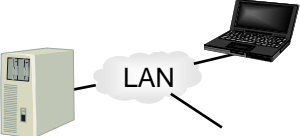
- DBMS
- Middleware
- Networks, Storage
- Operating systems, hardware platform

Source: Deutsche Post World Net

And what is the solution?

Vision: A logical layer decouples business and technology

Objects of discourse

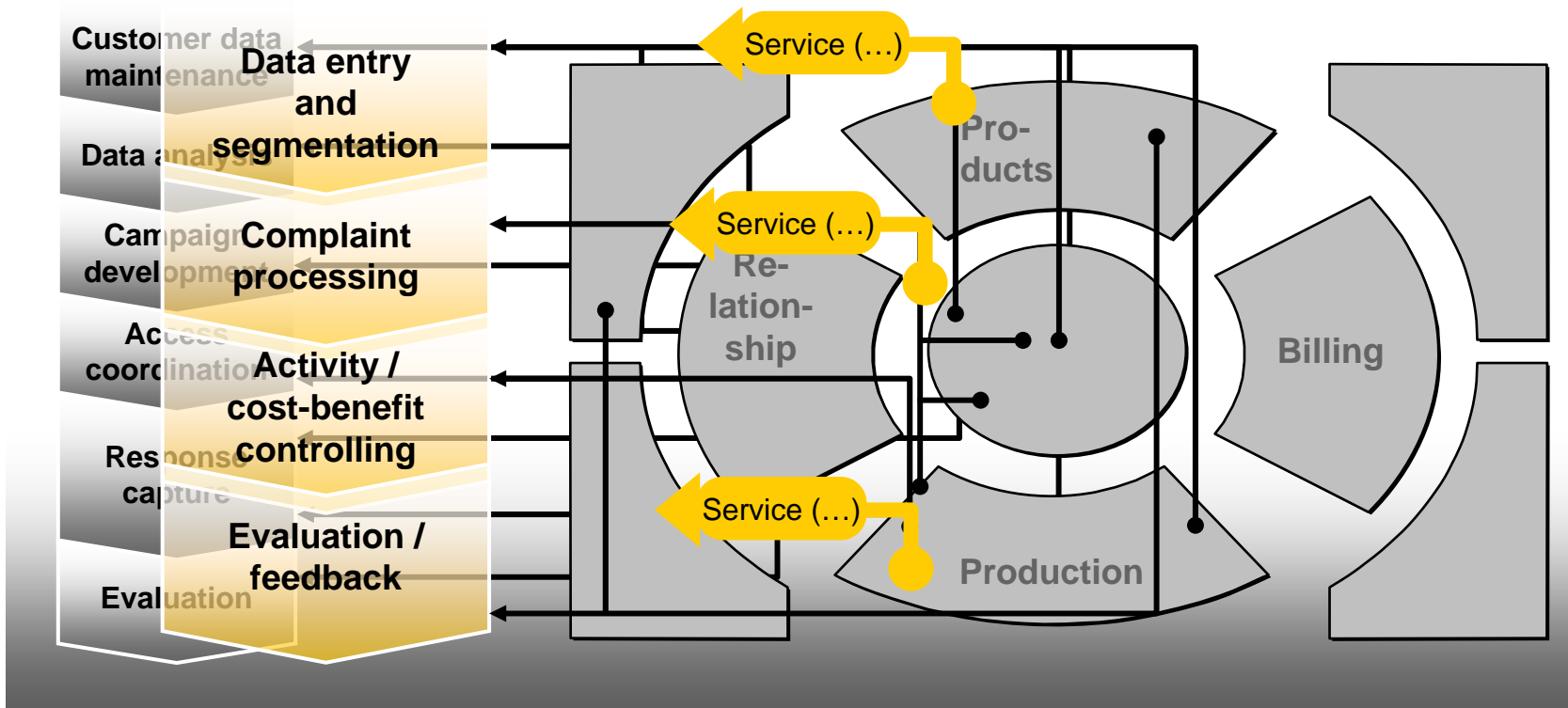
Process architecture		<ul style="list-style-type: none">■ Business processes■ Business rules
Logical service architecture		<ul style="list-style-type: none">■ Business domains and services■ Business objects■ SOA Framework
Application architecture		<ul style="list-style-type: none">■ Applications■ Databases■ Connectivity
Infrastructure architecture		<ul style="list-style-type: none">■ DBMS■ Middleware■ Networks■ Operating systems, hardware platform

Source: Deutsche Post World Net

What is the basic idea of SOA?

Modular services can be assembled like Lego pieces into new applications

Complaint Management Process

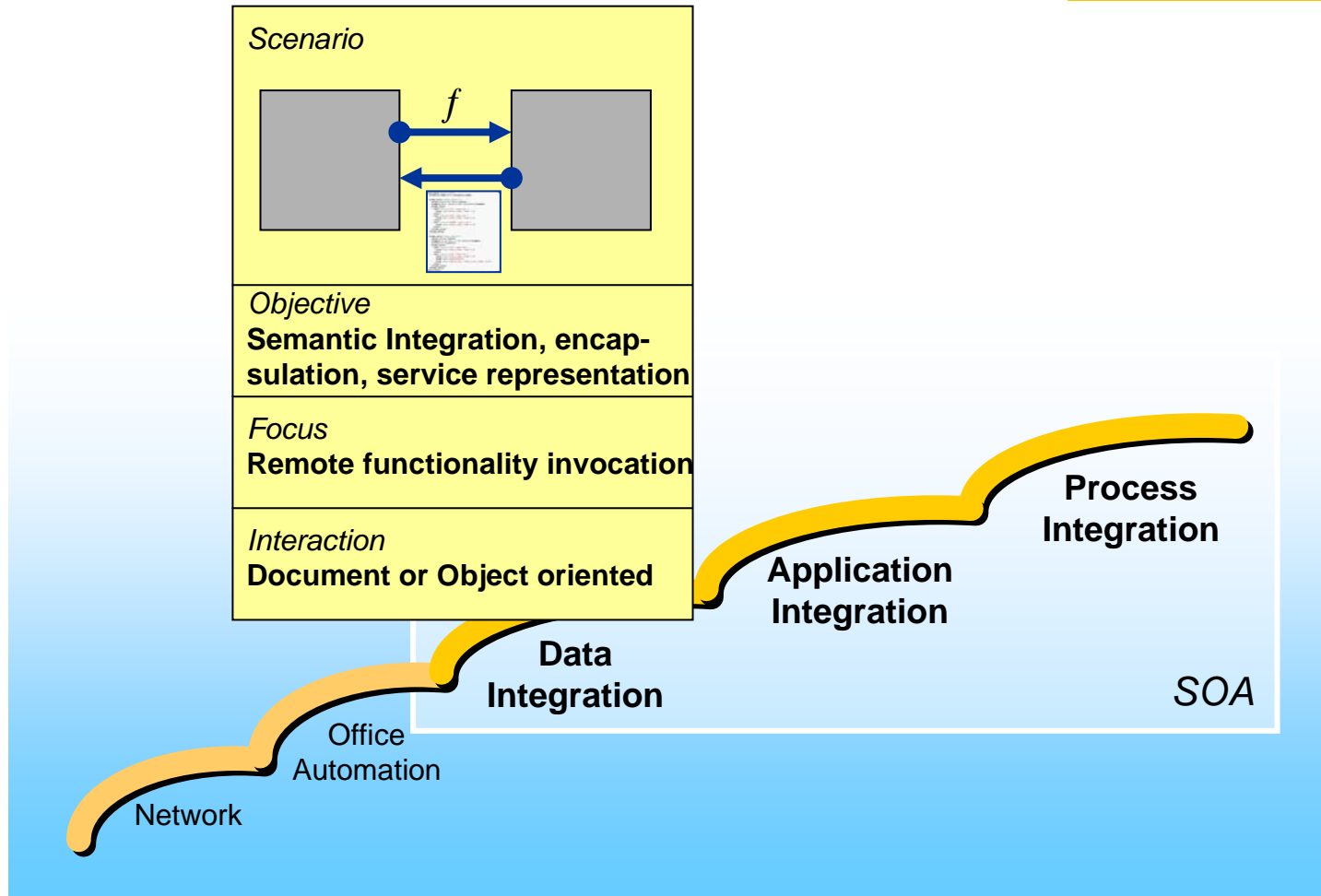


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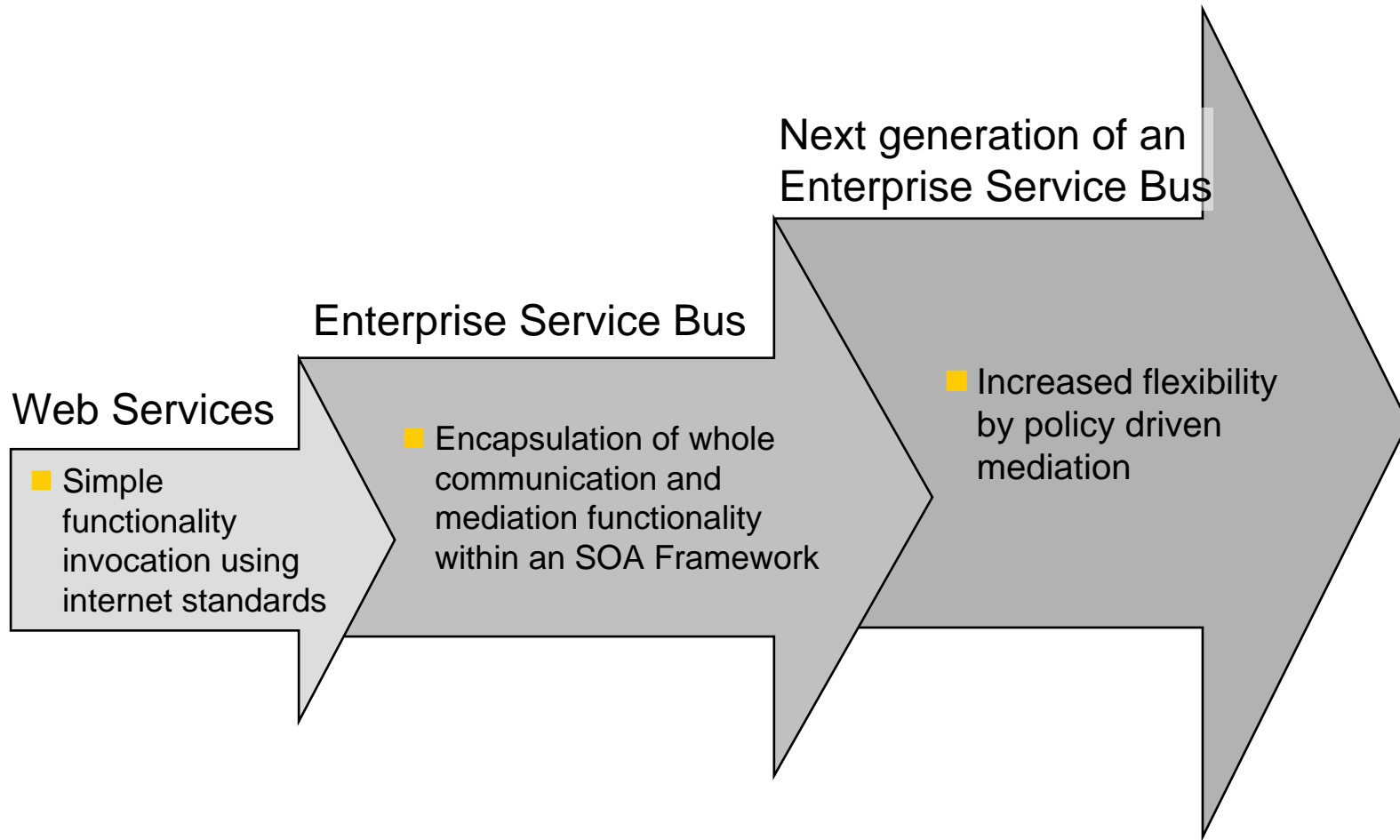
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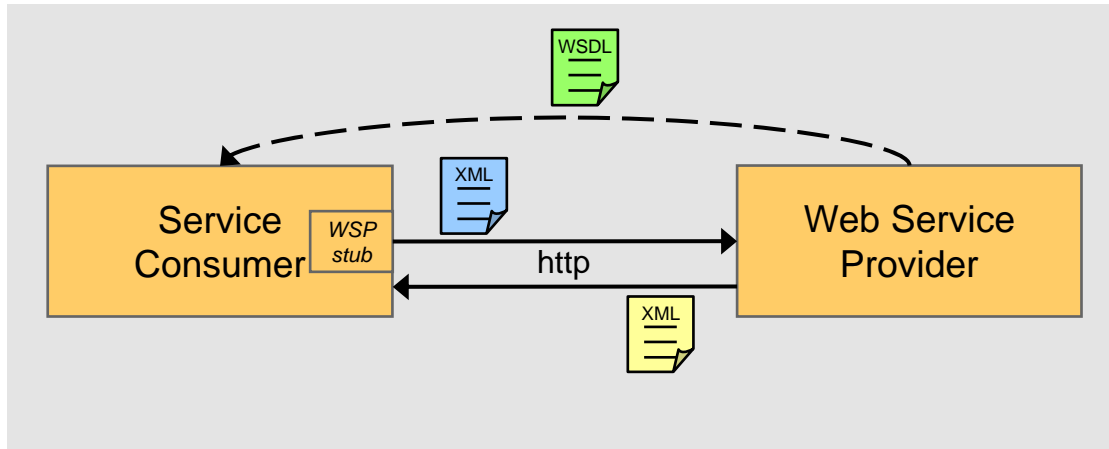
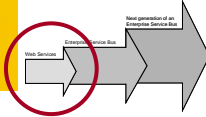
Dimensions of Integration



Source: Deutsche Post World Net



Application Integration: Plain Web Services Oriented Architecture

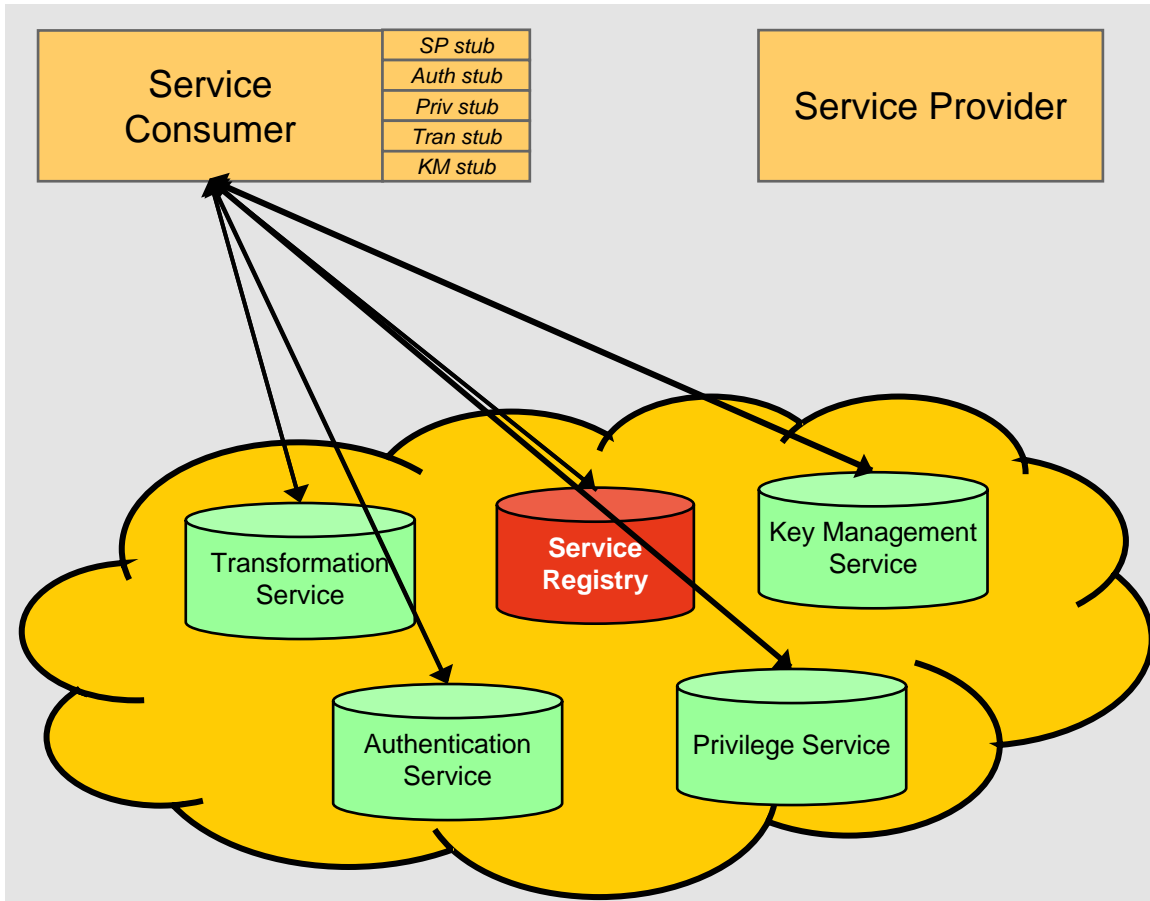
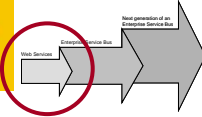


- Get WSDL file from Web Service Provider (WSP)
- Generate static bindings for WSP invocation (stub)
- Generate SOAP message and send it to Web Service Provider
- Receive response document from Web Service Provider

- ▶ Loosely coupled applications ✓
- ▶ Usage of standards and proven technology for communications ✓
- ▶ But poor “non-functional” capabilities, needed essentially for an Enterprise SOA...

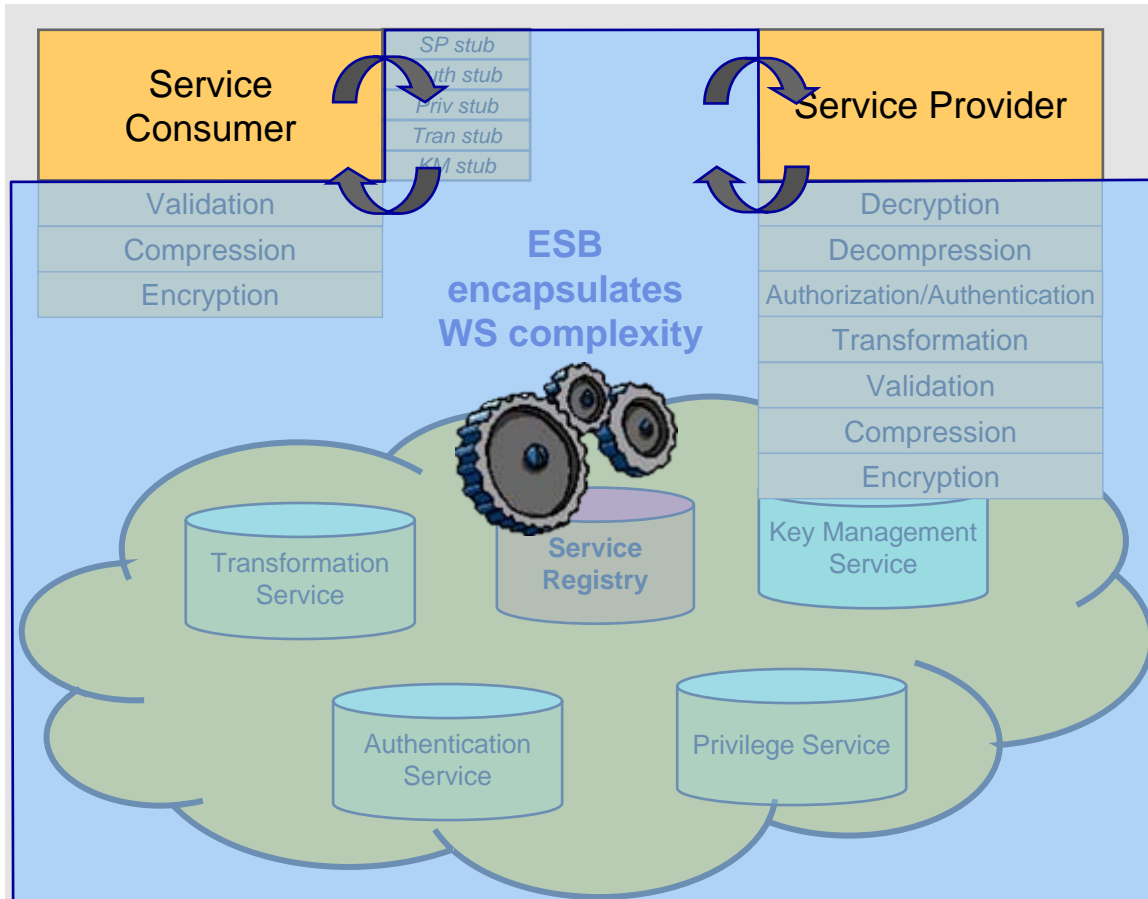
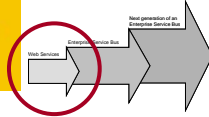
Source: Deutsche Post World Net

ESB – added value beyond basic mediation



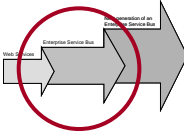
- To fulfill enterprise requirements, additional functionality is required
- Custom implementation by each participant is wasted effort

ESB – added value beyond basic mediation

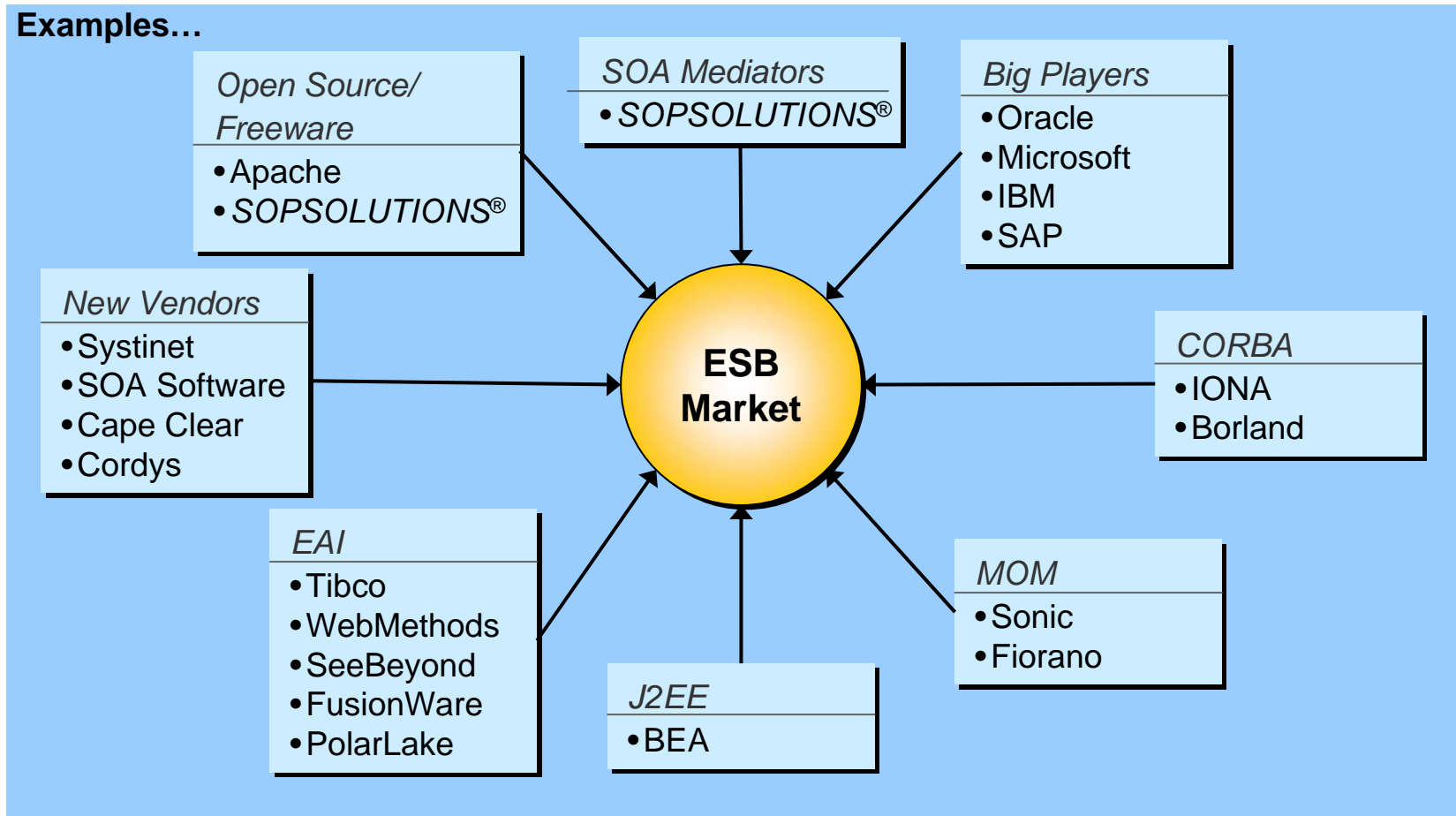


- To fulfill enterprise requirements, additional functionality is required
- Custom implementation by each participant is wasted effort
- ESB encapsulates WS complexity

Which vendors are trying to provide ESB solutions?

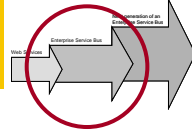


Examples...



Source: Deutsche Post World Net

What are the principle differences between ESB solutions?



The ESB infrastructure must be flexible and offer long-term stability

1

EAI-driven *versus* SOA-driven ESB solution

2

Hub & Spoke *versus* Federal Architecture

3

Single Vendor Product *versus* Best-of-Breed Integrated Solution

4

Proprietary *versus* Standard Technology (Java Business Integration JSR 208)

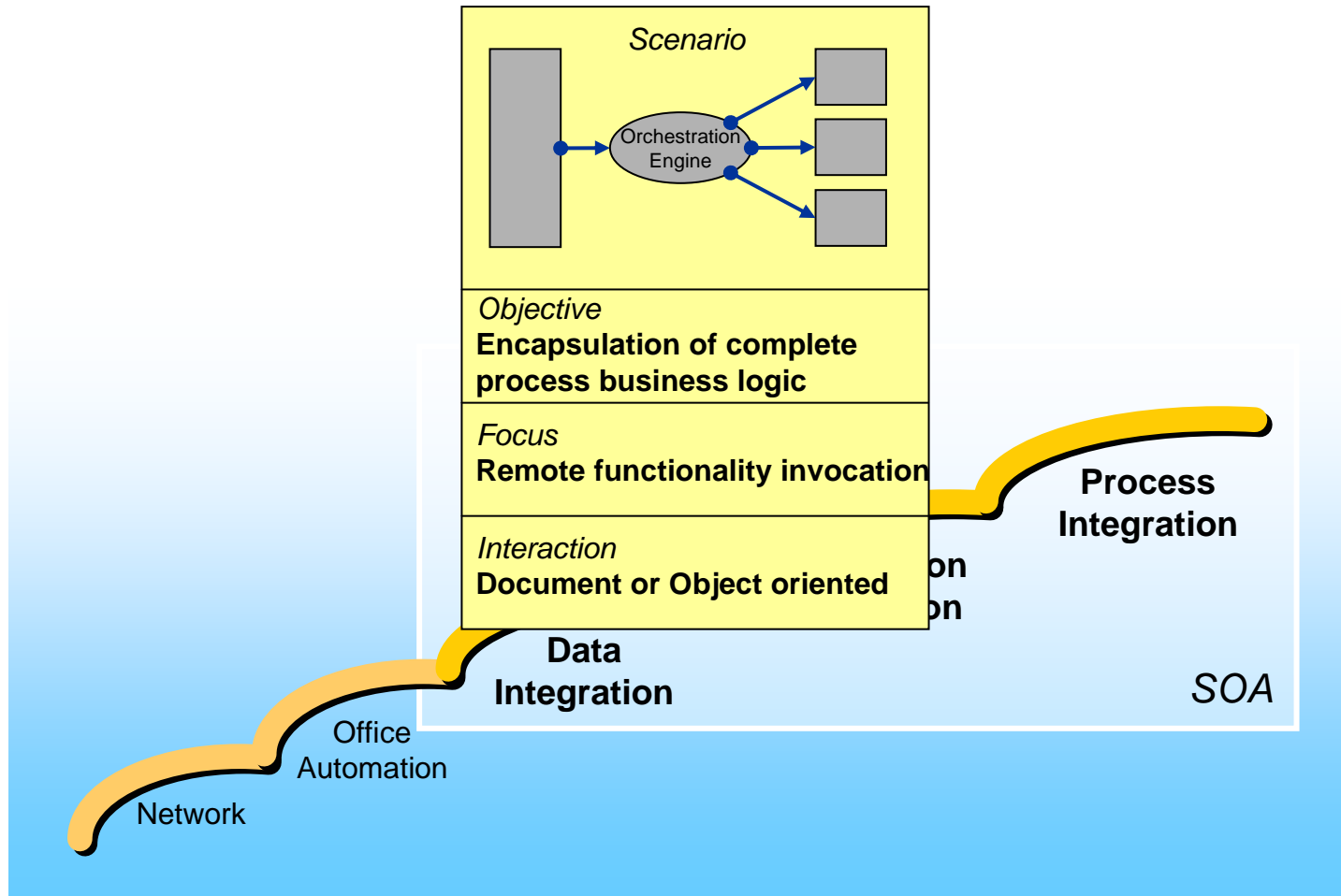
5

Configurative *versus* Policy-driven Mediation → Next generation of an ESB

Source: Deutsche Post World Net

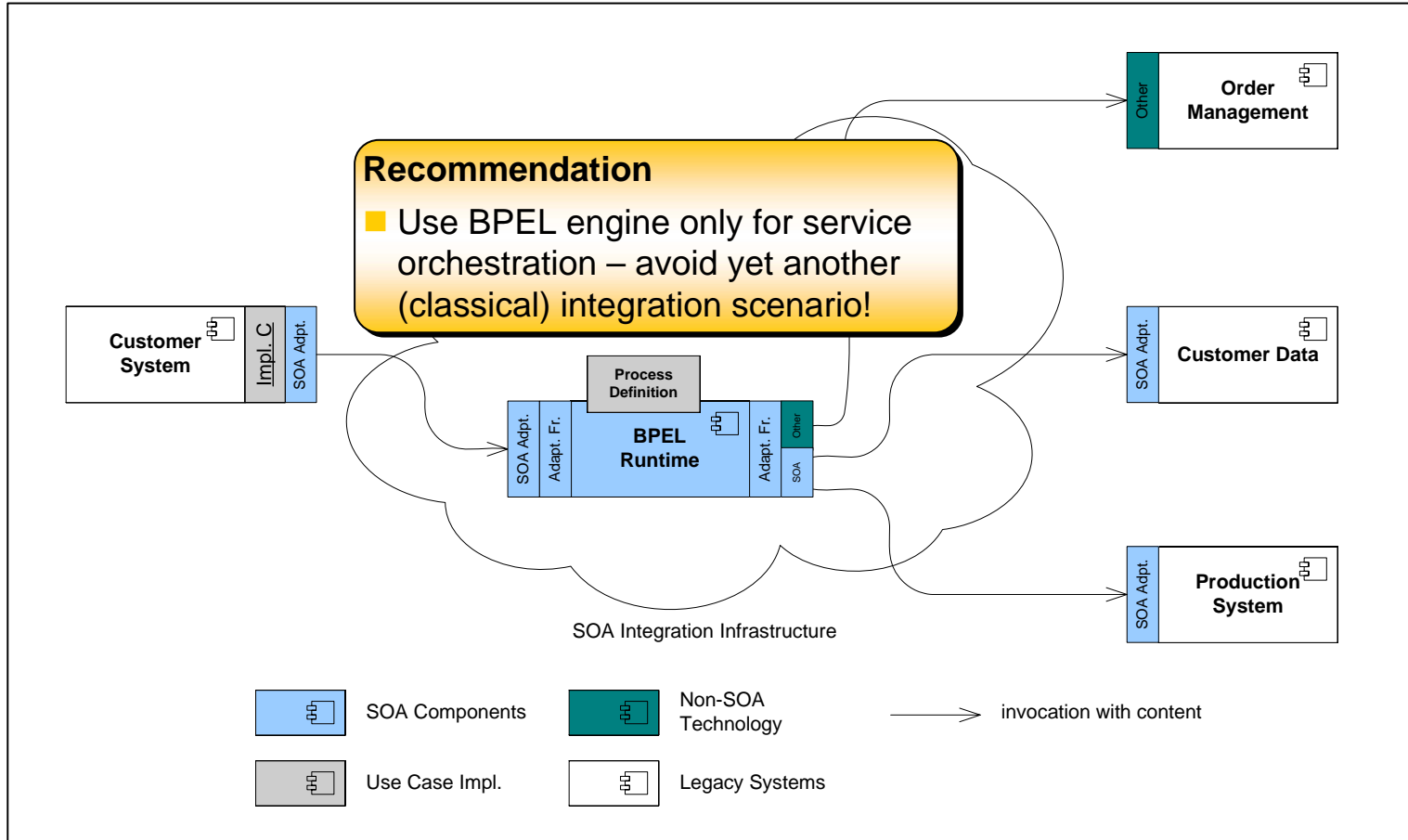
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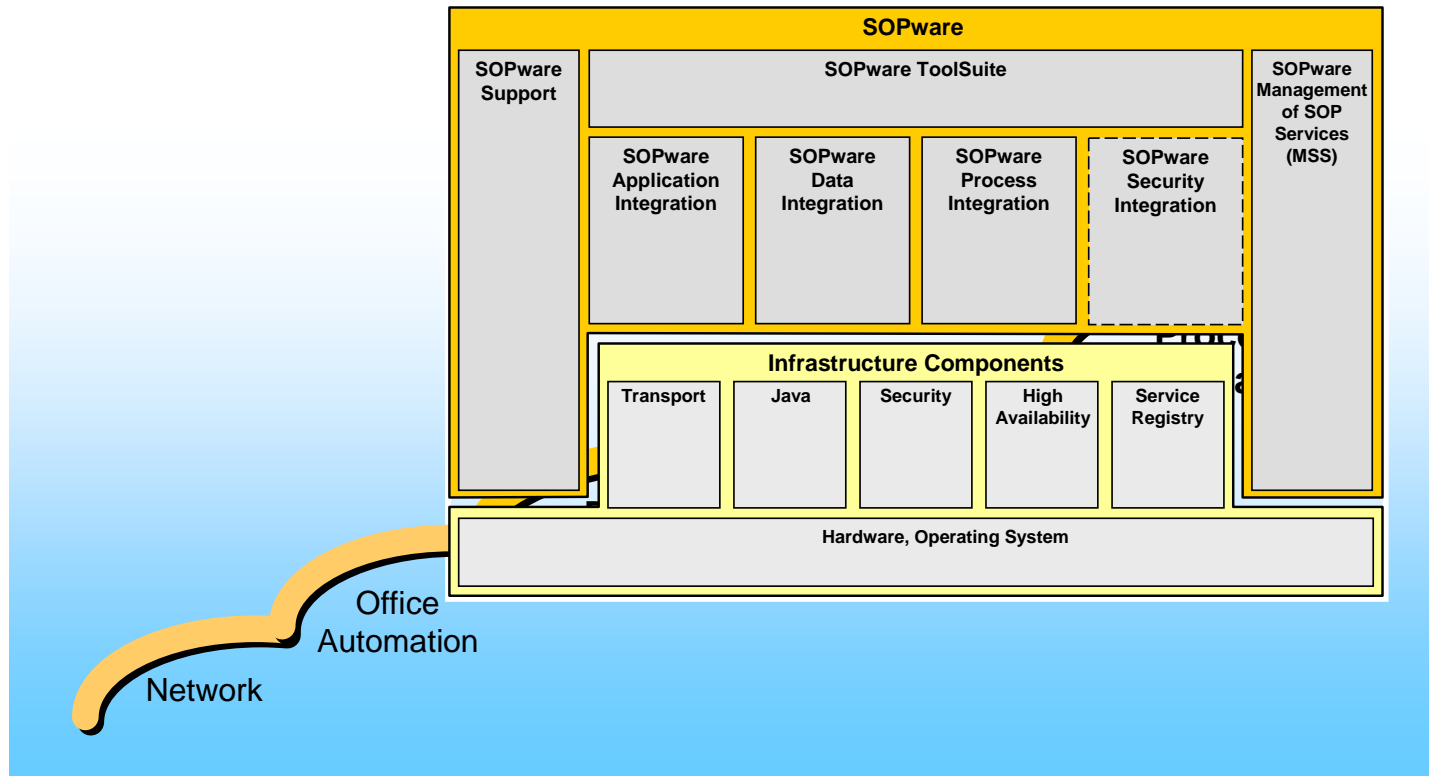
Source: Deutsche Post World Net

Process Integration Scenario: BPEL Middle-Tier Solution (Extended)



Are there good examples for SOA Frameworks?

Deutsche Post has implemented a powerful SOA Framework including the next generation of an ESB

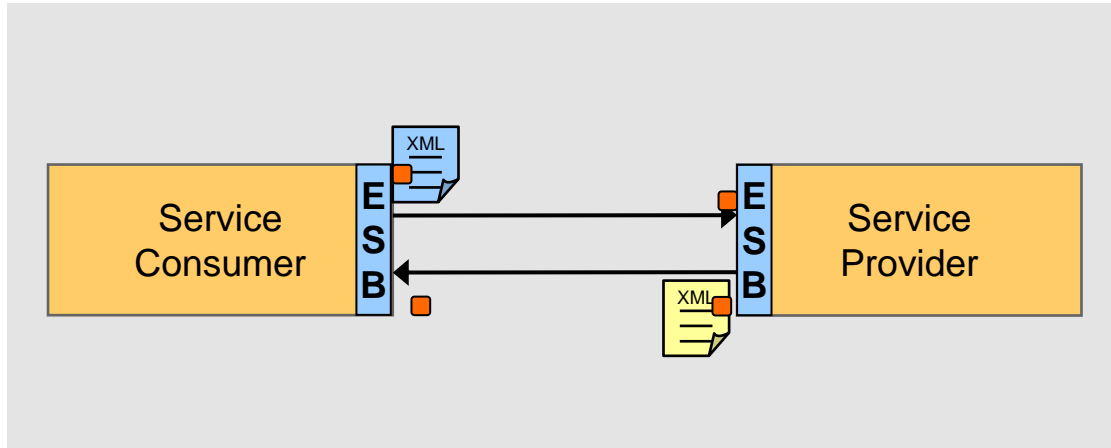


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Events in an SOA Messaging

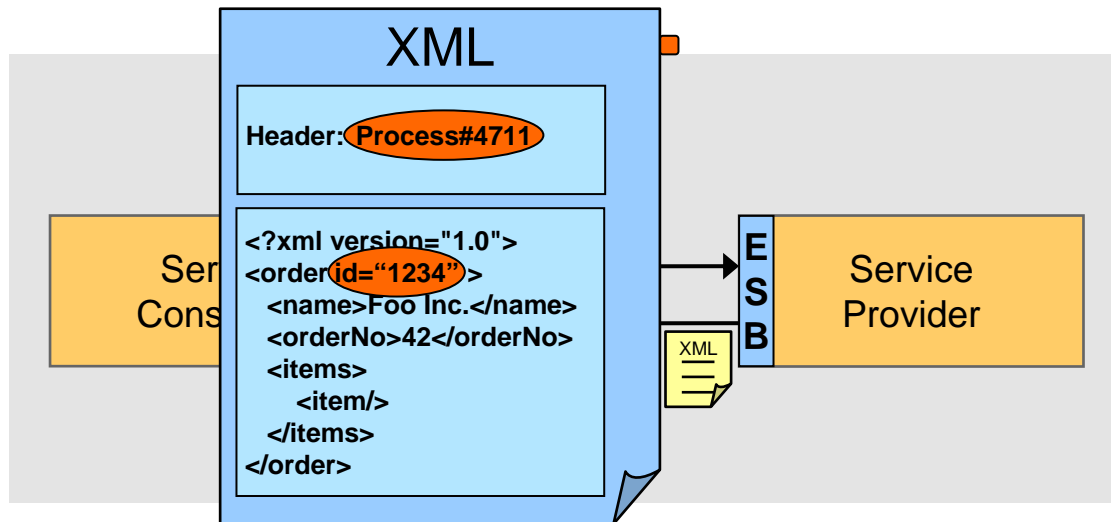


- Events when a message is processed by a participant
- Contain MessageID, MessageExchangeID, ParticipantID, time

- ▶ Events can be used to track the propagation of messages in an SOA
- ▶ Overhead to implement event generation in each application => Integrate event generation in ESB

Source: Deutsche Post World Net

Events in an SOA Correlation



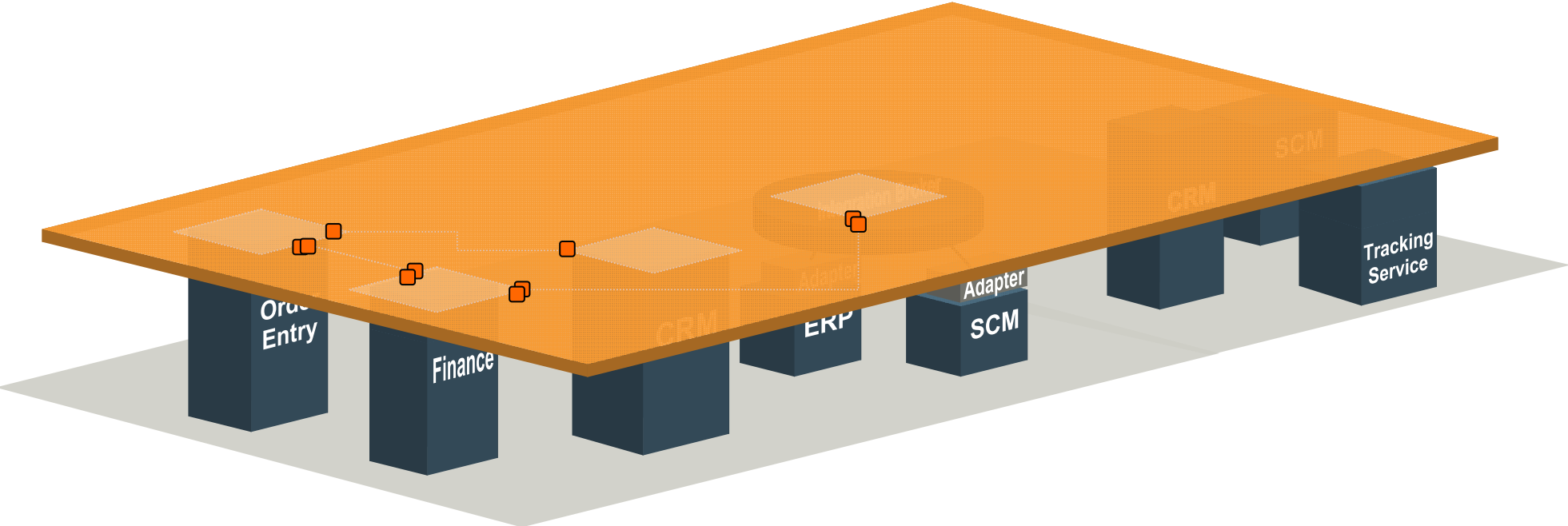
- Events when a message is processed by a participant
- Contain MessageID, MessageExchangeID, ParticipantID, time
- Correlation events contain MessageExchangeID and BusinessID

- ▶ SOA messaging events do not contain any business-related information
- ▶ provide correlation data via correlation events
- ▶ Possible sources for correlation data:
 - Message headers (set by sender application)
 - Message content (e.g., identified by xpath)

Source: Deutsche Post World Net

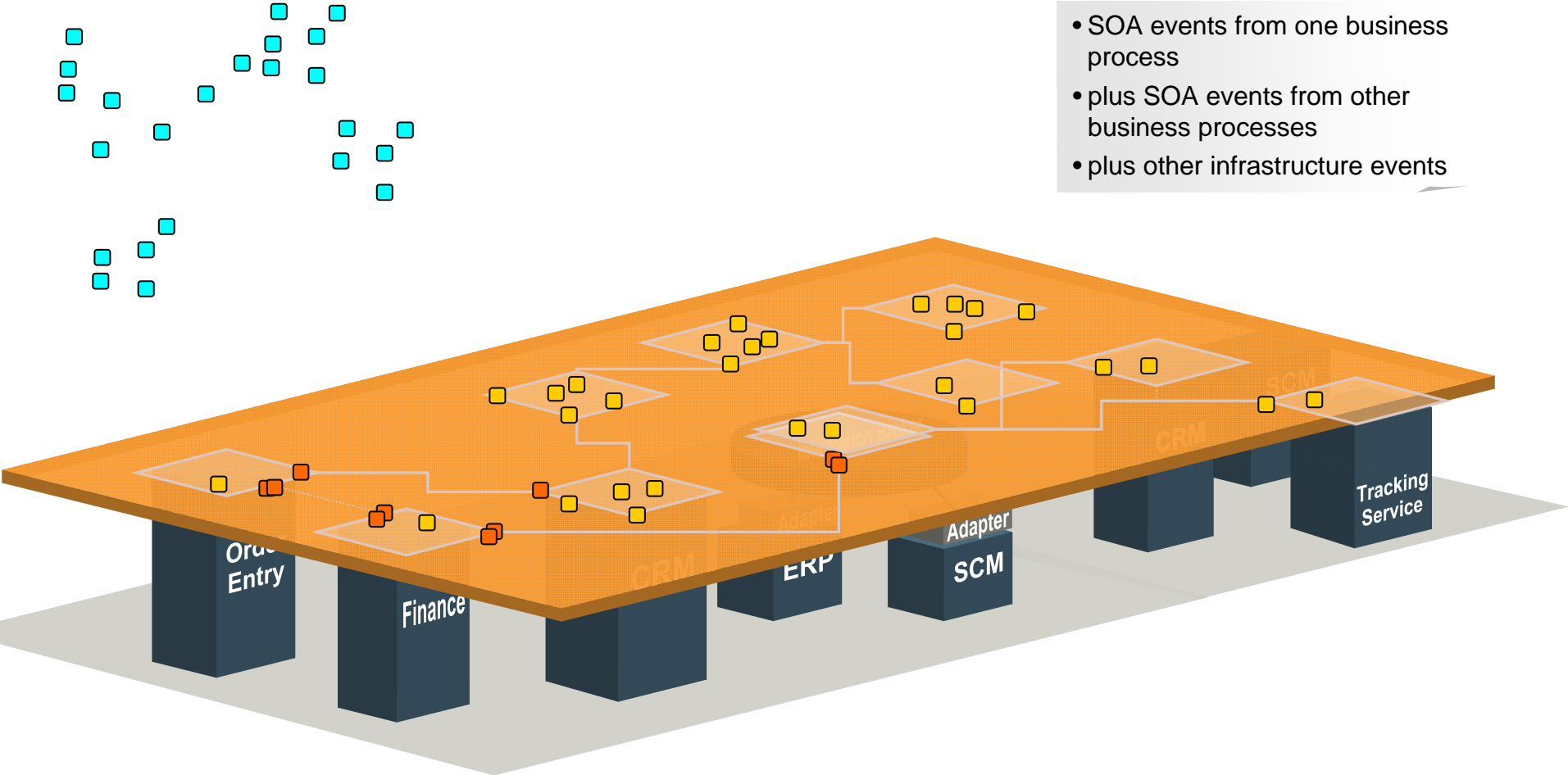
Events in an SOA Complexity

- SOA events from one business process



Events in an SOA Complexity

- SOA events from one business process
- plus SOA events from other business processes
- plus other infrastructure events



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SOA, SAM, BAM

■ Service activity monitoring

- Lifecycle and resource management of Service Participants
- Service usage metering
- QoS monitoring

■ Business activity monitoring

- High-level business events during business process execution

■ Fusion

- Given the right infrastructure, SAM and BAM can be seen in context
- Aggregation will provide insights for impact analysis, capacity planning, evaluations ...

Source: Deutsche Post World Net

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▶ **SOA Days 2006 Technology Conference**
Bonn, 20th & 21st September 2006

