Service-Oriented Architecture – Myths and Reality
Keynote SEIN 2008

Prof. Dr. Bernhard Humm
Darmstadt University of Applied Sciences
Department of Computer Science
Agenda

What SOA tool vendors promise
Myths and reality
SOA and city planning
A method for designing domains
Conclusion
Source: IBM white paper: “Smart SOA: Best practices for agile innovation and optimization”
Software AG technology can increase your visibility across a global supply chain and extend services to your business partners using B2B Integration.

Run your organization more efficiently and cost-effectively. Build new, highly competitive processes, or improve current ones with our Business Process Management (BPM) software.

With Business Activity Monitoring (BAM), you can accurately measure and improve business performance in real time. Customizable dashboards provide managers with unique views into activity, alerts to problems and built-in recommendations for improvement.

Using our Enterprise Service Bus (ESB), you can integrate your heterogeneous systems and extract features, data and services from them so they can be re-used easily in an SOA and composite applications.

Using our Application Modernization Suite, you can achieve rapid service enablement to extend core applications to an SOA and modern Web environments without extensive programming. You can also build new high-value business services that provide greater alignment between business and IT.

Using Natural and Adabas, you can rapidly develop and efficiently maintain mission-critical business applications. Natural delivers 50 percent productivity over alternatives such as Java or .NET. And with Adabas you’ll achieve peak performance in even the most demanding high-transaction environments while benefiting from a low Total Cost of Ownership (TCO).

Source: Software AG white paper “Business Infrastructure Software“
The Technical Path to Enterprise Service-Oriented Architecture: Stepwise Adoption of New Technologies

**Step 1**
Build the foundation with the SAP NetWeaver platform
- Implementation of the technical infrastructure for enterprise service-oriented architecture (SOA)

**Step 2**
Implement custom-developed composites
- Service-enablement of existing back-end systems and development of custom services

**Step 3**
Realize quick wins with enterprise services
- Leverage productized services, such as enterprise services (ES) bundles

Source: SAP „Enterprise Service-Oriented Architecture made Easy“
Source: HP white paper „Service Oriented Architecture“
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What SOA tool vendors promise

➤ Myths and reality

SOA and city planning

A method for designing domains

Conclusion
# Myths and reality

<table>
<thead>
<tr>
<th>Myth</th>
<th>Example</th>
<th>Reality</th>
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</thead>
<tbody>
<tr>
<td>▪ SOA is a technology (standards and products)</td>
<td>▪ &quot;If you’re using Web services (such as SOAP over HTTP), you’ve achieved SOA”</td>
<td>▪ SOA is paradigm for structuring the business of an enterprise which then drives the IT application landscape</td>
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<tr>
<td>▪ SOA is easy</td>
<td>▪ &quot;You can buy SOA out of the box”</td>
<td>▪ Structuring application landscapes towards a true SOA takes a long time, needs high expertise and is expensive</td>
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</table>
| ▪ Technology drives business               | ▪ “Business automatically responds to market forces, once SOA technology is implemented“ | ▪ Business must drive technology  
▪ Technology can only *support* business |
| ▪ Architecture means technical infrastructure | ▪ “Enterprise Service bus is the core of an SOA“                        | ▪ The structure of applications is the primary focus of SOA  
▪ Technical infrastructure is secondary |
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=> **SOA and city planning**

A method for designing domains
Conclusion
Application landscape of a bank
A large application landscape is like a megacity
Land utilization plans and domain models

Land utilization plan (City of Berlin)

Domain model (tour operator)

- Travel agency (TRA)
- Internet (INT)
- Call Center (CCE)
- Planning (PLA)
- Purchasing (PUR)
- Production
  - Custom Tours (PCT)
  - Package Tours (PPT)
- Booking (BOK)
- Service (SRV)
- Resource Management (RSM)
- Customer Management (CUM)
- Order Management (ORM)
- Accounting (ACC)
- Reporting (REP)
- Personell (PER)
Zoning maps and component architectures

Zoning map (Pariser Platz)

Component architecture (tour operator)
Infrastructure maps and integration architectures

Integration architecture

Infrastructure map
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Conclusion
### The domains of a (fictuous) tour operator

<table>
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<tr>
<th>CCT</th>
<th>Travel agency (TRA)</th>
<th>Internet (INT)</th>
<th>Call Center (CCE)</th>
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<tbody>
<tr>
<td>Customer Access</td>
<td>Planning (PLA)</td>
<td>Purchasing (PUR)</td>
<td>Production Custom Tours (PCT)</td>
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<tr>
<td>Core Business</td>
<td>Booking (BOK)</td>
<td>Service (SRV)</td>
<td></td>
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<tr>
<td>Resources</td>
<td>Resource Management (RSM)</td>
<td>Customer Management (CUM)</td>
<td>Order Management (ORM)</td>
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<tr>
<td>Support</td>
<td>Accounting (ACC)</td>
<td>Reporting (REP)</td>
<td>Personell (PER)</td>
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</tbody>
</table>
Step #1: Apply core business services

CCT

Customer Access

Travel agency (TRA)
Internet (INT)
Call Center (CCE)

Core Business

Planning (PLA)
Purchasing (PUR)
Production Custom Tours (PCT)
Production Package Tours (PPT)
Booking (BOK)
Service (SRV)

Ressources

Resource Management (RSM)
Customer Management (CUM)
Order Management (ORM)

Support

Accounting (ACC)
Reporting (REP)
Personell (PER)
Step #2: Apply business dimensions

- Core Business Resources
- Support
- Customer Access

- Travel agency (TRA)
- Internet (INT)
- Call Center (CCE)
- Booking (BOK)
- Service (SRV)
- Production Package Tours (PPT)
- Production Custom Tours (PCT)
- Purchasing (PUR)
- Planning (PLA)
- Resource Management (RSM)
- Customer Management (CUM)
- Order Management (ORM)
- Accounting (ACC)
- Reporting (REP)
- Personell (PER)

- Customers / Markets
- Products
- Length of Value Chain
- Customer Channels

- Premium brand
- Budget brand
- Package tour
- Custom tour
- e.g.,
  - own hotels
  - purchase in advance
  - purchase on demand
  - Premium brand
  - Budget brand
  - Package tour
  - Custom tour

Prof. Dr. Bernhard Humm, Darmstadt University of Applied Sciences. 6th Nov., 2008
Step #3: Apply business objects

CCT

Customer Access
- Travel agency (TRA)
- Internet (INT)
- Call Center (CCE)

Core Business
- Planning (PLA)
- Purchasing (PUR)
- Production Custom Tours (PCT)
- Production Package Tours (PPT)
- Booking (BOK)
- Service (SRV)

Resources
- Resource Management (RSM)
- Customer Management (CUM)
- Order Management (ORM)

Support
- Accounting (ACC)
- Reporting (REP)
- Personell (PER)
Step #4: Apply management and support services

CCT

Customer Access
- Travel agency (TRA)
- Internet (INT)
- Call Center (CCE)

Core Business
- Planning (PLA)
- Purchasing (PUR)
- Production Custom Tours (PCT)
- Production Package Tours (PPT)
- Booking (BOK)
- Service (SRV)

Resources
- Resource Management (RSM)
- Customer Management (CUM)
- Order Management (ORM)

Support
- Accounting (ACC)
- Reporting (REP)
- Personell (PER)

Management and support services
- Accounting
- Reporting
- Personell
- ...
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➡️ Conclusion
Conclusion

- Service-oriented architecture (SOA) is not a technology: using Web Services or an Enterprise Service bus doesn't make an enterprise IT architecture service-oriented.

- True SOA is a paradigm for structuring the business of an enterprise in form of services which then drives the enterprise IT architecture.

- Such a true SOA allows enterprises to faster react to market pressure, e.g., via outsourcing or off-shoring.

- We have published a method for engineering a true SOA in form of a book and numerous conference papers.

- The methods have been proven valid in projects for 18 large corporations of different industry sectors.