Towards A Methodology for Enterprise Services Definition – SAP Ecosystem Community Contribution to Defining Enterprise Services

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Market Development Engineering - Platform Ecosystem
What you will gain

This presentation will share key learnings gathered in a Methodology Advisory Group comprising thought leaders and top-notch universities to review and to complement existing methodologies for services identification, modelling and implementation.
SAP’s Global Research and Development Organization

Canada
Montreal

North America
Palo Alto and satellites

Germany
Walldorf and satellites

France
Sophia Antipolis

Hungary
Budapest

Bulgaria
Sofia

Israel
Ra’anana

India
Bangalore

China
Shanghai

Japan
Tokyo
SAP’s Enterprise SOA Strategy

SAP’s Platform Ecosystem

Enterprise Services Community

Community Advisory Group Methodology

Summary
SAP’s Enterprise SOA Strategy

SAP’s Platform Ecosystem

Enterprise Services Community

Community Advisory Group Methodology

Summary
Expected Benefits of SOA Investment

“What do you expect SOA to deliver” (Top 2 box rating)

- Improve business processes to reduce costs
- Fast business process innovation to grow my business
- Improve IT and business alignment
- Reduce integration costs
- Simplify existing systems
- Faster product and service innovation
- Improve customer, supplier, and employee relationships
- Code re-use to speed application development
- Better compliance
- Quickly incorporate merged or acquired businesses
- Quickly enter new geographic, product or service markets

0% 10% 20% 30% 40% 50% 60% 70%
Service-Oriented Architecture Reality Check 2007

- **SOA** market hype is on a very high level

- However, the expansion of the concept is enormous, the concept itself becomes increasingly ambiguous.

- Consequently, several studies highlight increasing customer SOA uncertainty.

→ So what can SAP contribute to clarify the discussion and to address the current fundamental business challenges?
Enterprise Services Enable the Agile Enterprise

Build vs. Buy - Adding the Third Option: COMPOSE

Build
- Custom Code
  - Home Grown
  - Home Grown

Buy
- Packaged Application
  - CRM
  - ERP
  - ...

Compose
- Adding the Third Option: COMPOSE

Build
- Home Grown
  - Home Grown

Buy
- CRM
  - ERP
  - ...

THE BEST-RUN BUSINESSES RUN SAP™
Concept: What is a Business Application Programming Interface (BAPI)?

I define what something looks like and I speak SAP slang.

Non SAP

SAP

Challenge:
Different Semantics & Different Technologies

looks like and I speak SAP slang
Concept: What is a Service?

Definition:

Services are defined using a description language and have interfaces that can be invoked to perform business processes.
Definition:

Enterprise Services are designed on the business level *not* on the IT-Level, and might be an aggregation of low level services.
A Simple Process Example: Open an Account

Create Customer → Create Account

Business View

Create_Customer → SAP FS BP

Create_Account → SAP AM

IT View
A Simple Process Example: Open an Account

Create Customer ➔ Create Account

Business View

Business Process Platform

Create Customer ➔ Create Account

Create Customer ➔ Create Account

Business Components

SAP FS BP

SAP AM
What is Needed?

1. Business Know How
   - Processes Know How

2. Business Platform
   - Technology Infrastructure
   - Process Content

3. Business Components
   - Well designed Components

Influence on each other!
Business Reality

IT-driven Business Innovations

Business Requirements

Strategic Level

Standards

Principle

Guidelines

Enable Innovation!

Architectural Models

Business Process Model

Business Object Model

Organizational Model

Physical Level

Logical Level

Business Level

Strategic Business Objectives

Operational Business Objectives

Operational Requirements

Technical Possibilities

IT Reality

SAP AG 2007

How to Explore and find the Right Services

Peter Emmel

THE BEST-RUN BUSINESSES RUN SAP™
Enterprise Software Waves
Current Wave is Changing the Game...Again

Evolutionary Stages of Enterprise Software

Industry Transition
- 1980: Immediate Processing
- 1990: Immediate Reporting
- 1995: Immediate Trading
- 2005: Immediate Change
- 2015: Ecosystem enabled Innovations

Usage Transition
- 1980: Batch
- 1990: The few, the brave
- 1995: Users in corporate functions
- 2000: New usage in sales, supply chain, R&D...
- 2005: Orchestration of customer experience

Application Transition
- 1980: Separate apps on separate platforms
- 1990: Integrated ERP on 1 platform
- 1995: Application suites on 1 platform
- 2000: xApps using common & consistent Enterprise Services
- 2005: Composition and business process platforms

Technology Transition
- 1980: Mainframe Batch
- 1990: Client/Server Wave
- 1995: Internet Wave
- 2005: Web Services Wave
‘Applistructure‘ & Partnering Opportunities

SAP NetWeaver
Business Process Platform

Enterprise Service Repository

Home Grown/ISV
SAP
Process Components
Biz partner
Subsidiary
SAP Partner Programs and Communities Overview

Powered by SAP NetWeaver

Industry value networks

Industry titans: enterprise-services ready

SDN community

Enterprise services community

BPX community

sdn.sap.com/community
SAP’s Enterprise SOA Strategy

SAP’s Platform Ecosystem

Enterprise Services Community

Community Advisory Group Methodology

Summary
Customers Need More than Large Partner Networks

Key Customer Value Drivers from SAP Ecosystem Collaboration

- Common data definition
- Common process definition
- Common integration model
- New solutions
- Reduce TCO
- Standardize on platform
- Single user interface
- Common support
- Single point of contact

Source: SAP Customer Survey at TechEd Boston September 2005

91% want ISVs to have innovations rooted on common standards with SAP

QUESTION: On a scale of 0 to 10, what is the biggest advantage you perceive from closer collaboration between SAP and its partners? (0 = not valuable; 10 = extremely valuable)
Enterprise Service Community (ESC)
Co-Innovation with Partners and Customers

- Customer / Partner
- Industry Value Networks
- ASUG
- Other

Enterprise Services Community Definition Groups

Homepage Enterprise Services Community (ESC): esc.sap.com
Further Info: wiki.sdn.sap.com/wiki/display/ESpackages/ES+Packages
These objects include:

- Business Objects
- Service Interfaces (with associated Operations, Message Types and Data Types)
- Process (ARIS) Models
- Mapping of Objects
Interoperability Types

What is the order status?

Service Consumer

Purchase Order

Service Provider

明天运输。

Semantical / Logical Interoperability
Same Understanding between Service Consumer and Service Provider, e.g. Address or Name.

Technical Interoperability
- Unified Transport Protocols (e.g. TCP/IP)
- Security standards (e.g. Web Services Security)
- Formats for structured communication (e.g. XML, SOAP...)
What makes a Service an Enterprise Service?

Readability
- Compare it to a book
  - Global data type – the letters available to build meaningful words
  - Messages and service cut – the sentences have the same grammar
  - Taxonomies of Process Components, Business Objects, Interfaces
    - the chapters in the book have the same structure

Reuse
- The reuse of services makes up the value of the ESR

Diagram:
- Enterprise Service
  - Modeled and fully harmonized across SAP solutions
- Web-Service
  - e.g. Wrap RFC/BAPI in Lighthammer or XI
- RFC, BAPI
  - Harmonization & Standardization across SAP Solutions
  - Degree of Harmonization & Standardization across SAP Solutions
**Designed for Flexibility**

**SOA**
- Order to Cash
- Cancel Order
  - Delete from database
  - Notify Suppliers
  - Rollback inventory
  - Adjust Planning
  - Cancel Invoicing

**ENTERPRISE SOA**
- Order to Cash
- Cancel Order

- Manually built
- Low reusability
- No governance
  - High Risk

- Productized services
- Business semantics
- Unified repository
  - Ensures Integrity

© SAP AG 2007 How to Explore and find the Right Services  Peter Emmel  26
The Columns of Service Modeling

Holistic Business Model

Service-oriented Process Modeling

Alignment with ES Repository Content
SAP Product Adoption

Matching against Portfolio Planning and existing Applications
Community Process
Customer Decision

Identification of Customer Specific Content
Custom Development

SAP Business Process Platform
enterprise SOA
An Enterprise Services Architecture will develop its business value – beyond integration benefits on a technical level - only if...

- the right services get identified, specified and realized.

- well defined
- with the appropriate granularity
- correspondent to the demands of the business processes
- capable for loosely coupling
- specified for extensive reuse
- correct abstraction level
- compatible with standard service catalogs (e.g. delivered by SAP)

.. the considered services get implemented right.

- flexible design
- robust implementation
- based on standards
- with consideration of the existing landscape
- optimal usage of SAP NetWeaver technology and development tools (if chosen and applicable)

Service Cut and Modeling

Service Implementation Design

A methodical modeling approach is required!
Focus of Advisory Group

- Establish a work group of partners (ISVs, SIs), industry think tanks and top-notch universities to review and to complement SAP methodology for Enterprise Services Design.

Prior Work

- Enterprise Services Design Guide Version 1.0
- Enterprise Services Design Center

Benefits for SAP and Partners

- Platform for communication
- Enterprise Services Design Guide 2.0

Lessons Learned

- Partners are very committed
- Involved SAP teams are enthusiastic about this
Working Papers are used to Streamline Discussion

- ES Design Guide v2 Subsets
- External & Internal Contribution
- Clear Governance
  - Template
  - Status Tracking, Versioning
  - Subscription
  - Roles Concept
- Examples
  - Glossary
  - Service Design Criteria
  - Service Identification
### Approach “Enterprise Service Modeling”

<table>
<thead>
<tr>
<th>Step</th>
<th>Process</th>
<th>Description</th>
<th>Business Models</th>
<th>Service Models</th>
<th>Implementation Design</th>
<th>Feasibility &amp; Evaluation</th>
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<td>Analysis of business models</td>
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#### Scope & Objectives
- Description of selected business area(s)
- Documentation of pain points and potential improvements
- Collection and documentation of (future) functional requirements

#### Business Models
- Gathering business models (e.g. event, process, entity, state)
- Analysis of business models
- Definition or refinement of business models [optional]

#### Service Model
- Business component design
- Derivation of the logical service model (service definition)
- Sanity and benefit check

#### Implementation Design
- Mapping to IT landscape (applications, modules etc.)
- Design of service consumption
- Creating a detailed implementation design

#### Feasibility & Evaluation
- Technical feasibility assessment
- GAP analysis
- Cost estimation
- Risk evaluation
- Service Model
- Implementation Design
- Feasibility & Evaluation Documentation
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### Scope & Objectives
- Description of selected business area(s)
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### Documentation
- Description of selected business area(s)
- Documentation of pain points and potential improvements
- Collection and documentation of (future) functional requirements

### Business Models
- Business component design
- Business component and user interaction analysis

### Service Model
- Sanity and benefit check
- Derivation of the logical service model (service definition)

### Implementation Design
- Mapping to IT landscape (applications, modules etc.)
- Design of service consumption
- Creating a detailed implementation design

### Feasibility & Evaluation
- Technical feasibility assessment
- GAP analysis
- Cost estimation
- Risk evaluation
Overview of Indicators (Not Complete)

General Concepts
- High Execution Time or Process Costs
- Frequent (Process) Changes

User Productivity & Centricity
- Distributed Information or manual Transfer of Information between Different Media
- Decentralized Business Know-How with Central Support Needed

Business Automation and Process Efficiency
- Process is Crossing Different Types of Borderlines
- Existing Industry Standards for Improvement of Communication
- External Synchronization within a B2B-Scenario needed

Deployment Flexibility
- Multiple Instances/Deployments of one Solution in an Enterprise and Data Exchange
- Relevant Outsourcing Scenarios of Parts or Complete Business (Sub-) Processes
## Approach “Enterprise Service Modeling”

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### Description of Business Models:
- Gathering business models (e.g., event, process, entity, state)
- Analysis of business models
- Definition or refinement of business models [optional]

### Business Models:
- Sanity and benefit check
- Model alignment
- Risk evaluation

### Service Model:
- Implementation Design
- Feasibility & Evaluation Documentation
Example Business Process:
Adjust the store-specific prices in comparison to competitors

Starting Point:
Complete Picture of Business Requirements – End-To-End
From Business Requirements to Process Identification

Discover required process steps to get from start to end point

Goal: One Composite Application

Composite Application: Store specific pricing
Define Required Actions and Services

Define needed Services…

…with no regard whether these services exist or not!
Process Components: Building Blocks for Business Processes

http://www.sdn.sap.com \rightarrow ES Workplace

mySAP ERP

- Payroll Processing
- Sales Order Processing
- Business Data Partner Management
- Product Data Management
- Price Master Data Management
- Customer Complaint Processing
- Customer Quote Processing
- Purchase Order Processing
- ...
Search for Appropriate Enterprise Services

Search and Map Enterprise Services
Map Identified Enterprise Services...

**Process Component**
**Business Partner Data Management**
- Find Business Partner by Basic Data

**Process Component**
**Product Data Management**
- Find Material by Basic Data
- Read Material by Basic Data

**Process Component**
**Price Master Data Management**
- Read Sales Price Information
- Create Sales Price Specification Calculation
...and Identify Missing Services.

Update Sales Price Information Service is not available!
SAP’s Enterprise SOA Strategy
SAP’s Platform Ecosystem
Enterprise Services Community
Community Advisory Group Methodology
Summary
The methodology proposed by CAGM contains a systematic approach for service identification, service modeling and service implementation design.

From technology-driven application development to collaborative business-driven services development with ESC.

From software or technology partners to innovation partners facilitated by SAP’s platform ecosystem.
Questions
Let’s talk ...
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