

SAP NetWeaver Process Integration 7.1 – Customer Scenarios



BST NetWeaver Solution Management
Solution Management Rollout – SOA Middleware

December 2008

Agenda



Introduction

SAP NW PI 7.1 Scenario at Swiss Post

SAP NW PI 7.1 Scenario at AMD

SAP NW PI 7.1 Scenario at EnBW

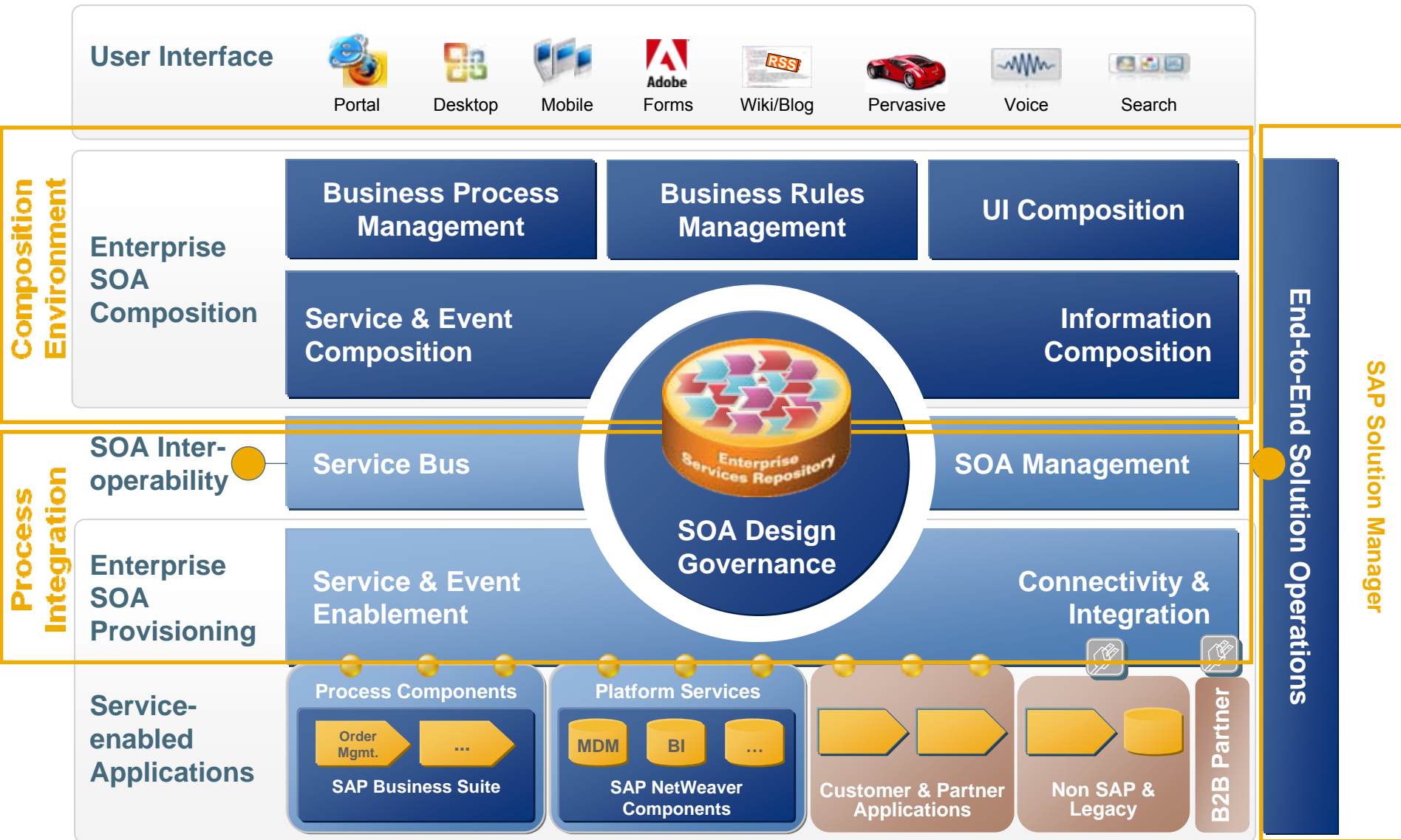
SAP NW PI 7.1 Scenario at Swisscom

SAP NW PI 7.1 Scenario at Dräger

Summary and Further Information

End-to-end SOA Infrastructure - TODAY

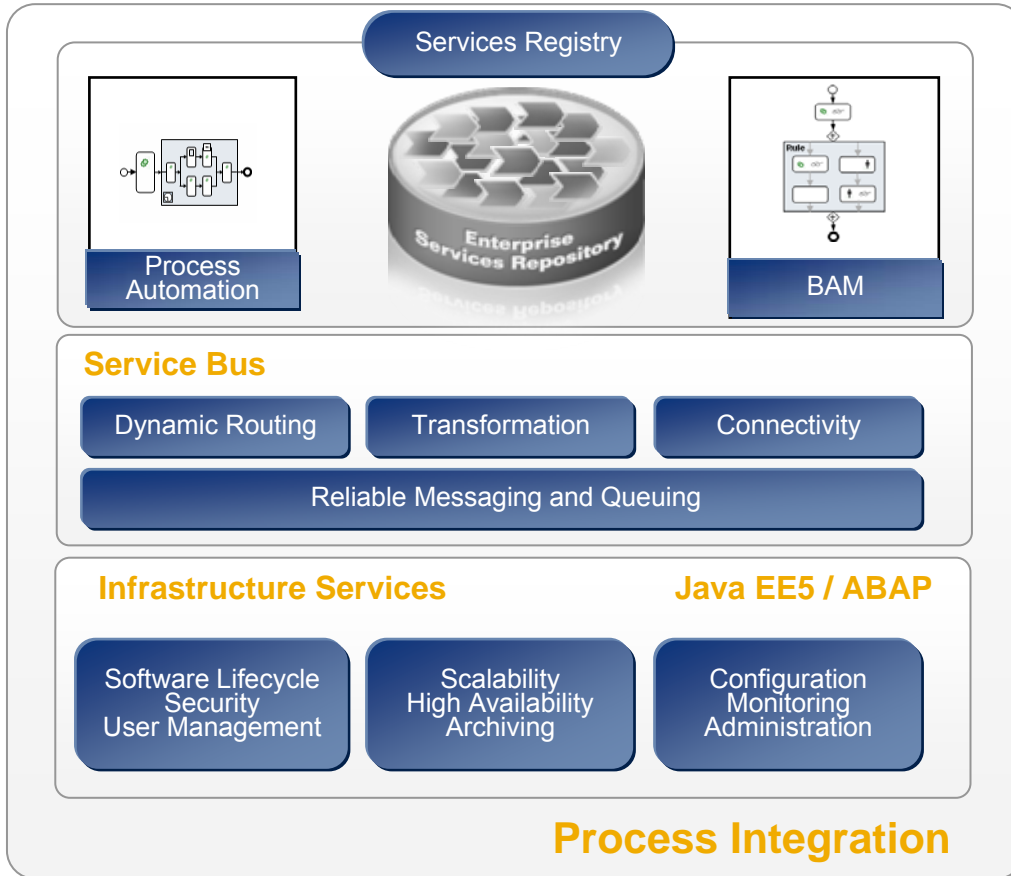
Enabling Managed Process Flexibility



SAP NetWeaver Process Integration 7.1 Overview



User Interaction (for example, Business Task Management)



B2B Partner

SAP

3rd Party Application

3rd Party Middleware

Repository-based Modeling and Design

- Enterprise Services Repository
- Services Registry - UDDI V3.0
- BPEL modeling enhancements
- User-defined mapping function library
- Business Activity Monitoring (BAM) infrastructure

Service Bus-based Integration

- WS-RM 1.1, WS Policy 1.2, WS Security 1.0, SAML 1.1
- XML validation
- Local processing in Advanced Adapter Engine (AAE)
- Message packaging
- Improved performance for ccBPM

SOA Management

- Next steps towards central configuration and administration
- Enhanced configuration for AAE
- Reduced Sizing

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Summary and Further Information

Who is Swiss Post, what do they produce?

- Swiss Post is a Switzerland based logistics company that deals with Postal, logistics, and transportation services. They have around 58,000 employees and an annual revenue of about CHF 8,712 bn
- They have around 2500 post offices

System landscape at Swiss Post

- Over 65% of their applications are non SAP
- Several Microsoft .Net custom built applications
- **15 scenarios where pure non SAP to non SAP integration already running on PI 7.1**
- Development teams familiar with .Net, Oracle, SUN, BEA technologies

SAP NW PI 7.1 – Ramp-up Project at Swiss Post Billing Process Scenario



Challenge

- Increased competition in a deregulated Postal market
- Substitutes and hybrid mail services
- Changing customer behavior - Customer demands more flexible and reliable services
- Emerging of new technologies for customer service and operations

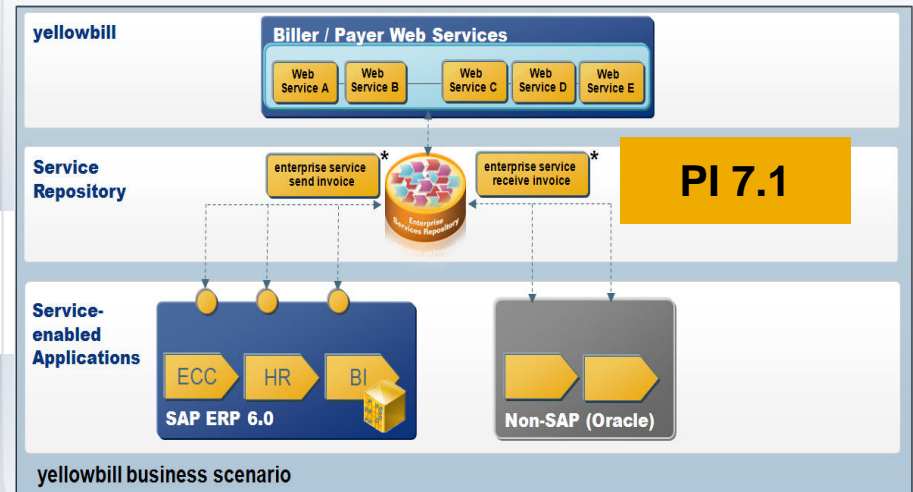
Business Goal

- Shift from paper based billing towards electronic delivery
- Invoice send and receive process including e-document generation
- “eInvoicing” of supplier invoices and invoicing of logistic services providers of Post Logistics

Biller value chain



Payer value chain



Business Case

- Several individual interfaces were replaced by two enterprise services compliant to SAP enterprise SOA development standards
- SAP System connection via PI is now based on reusable services and user interfaces
- PI's Enterprise Services Repository used as central repository for non SAP SOA assets
- Reduced processing time and processing cost including “e-Document” approach
- **Easy replacement of existing BEA Web Logic solution**
- Faster integration of external customers and partners for billing processes (B2B and B2C)



What are your high level scenarios and business problems solved with SAP NW PI 7.1?

- Integration between non-SAP system and non-SAP system
- Use PI for both A2A, B2B including EDI and service enabling legacy applications
- **Benefit from performance enhancements for high volume scenarios**
- **Extensively use the Enterprise Services Repository for SOA design governance**
- **Leverage pre-packaged integration content delivered for SAP applications**

Key benefits of using SAP NW PI 7.1

- **Three weeks to go live** on their PI 7.1 implementation project starting with a fresh installation
- High performance for business critical processes
 - 1.2 million messages processed overnight.
 - Response time of 200ms for an end to end B2B transaction
- Enterprise Services Repository used to define re-useable services rather than classical interfaces
- Enterprise Services Repository and Services Registry delivering profitability at every step of the Service lifecycle

Do you use SAP NW PI as your Enterprise wide Service Bus?

- Yes
- PI is used to create abstraction between heterogeneous sender and receiver systems based on SOA standards to provide unified access to legacy systems
- Content from BEA Weblogic technologies easily migrated to PI to save IT platform costs
- **All web services and enterprise services that are available to their customers go through SAP NetWeaver PI**

Do you use mainly synchronous or asynchronous scenarios?

- A mix of synchronous and asynchronous scenarios

Future plans with SAP NW PI

- SAP NetWeaver PI will play a key role driving innovation at Swiss Post
 - Provision new web services in a technology independent way
 - Reduce development and integration efforts by two thirds through reuse of enterprise services
 - long-term goal is to link all of their non-SAP systems – about 65% using SAP NetWeaver PI
 - Consolidate communications, as well as support flexible adoption of business processes to meet changing business requirements

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Who is AMD, what do they produce?

- Advanced Micro Devices, Inc. (AMD) is an American multinational semiconductor company that develops computer processors and related technologies for commercial and consumer markets
- AMD's main products include microprocessors, motherboard chipsets, embedded processors and graphics processors for servers, workstations and personal computers, and processor technologies for handheld devices, digital television, and game consoles

What SAP systems do you have in your landscape?

- SAP ECC 6.0
- SAP ERP 6.0 HCM
- SAP Solution Manager 4.0
- SAP SRM 5.0, SAP SCM 5.0
- SAP Business Objects
- SAP NetWeaver Business Intelligence, SAP NetWeaver Enterprise Portal
- SAP CRM 2007 (Ramp-up), GTS 7.1 (Ramp-up), SAP NW PI 7.1



Challenge

- Integration of two different application systems, **both non-SAP**
- Inventory Management process not efficient

Business Goal

- Design, develop and implement a solution that integrates Inventory Management System (SQL Server Database) and Forecasting and Production Planning system (Oracle Database) for Inventory Replenishment Planning.
- Optimize the business process between the Inventory Management system
- Eliminate manual process of data transformation and develop automated capabilities for increasing efficiency

Inventory Replenishment Planning



Business Case

- A single middleware platform that would integrate the systems in a heterogeneous landscape
- Integration capable of laying a strong foundation for other integration needs with 3rd party systems

What are your high level scenarios and business problems solved with SAP NW PI 7.1?

- **Integration between non-SAP system and non-SAP system**
 - **Integration of Inventory Management System with Forecast & Production Planning System.**
 - **This interface is currently live with SAP NW PI 7.1.**
- Current development includes integration between Product Data Management System and SAP ECC 6.0
 - Product data is maintained in Product Data Management System and the same is replicated in SAP ECC using standard IDocs (ECMMAS, MATMAS, CLFMAS, MATMAS, DOCMAS and BOMMAS).
 - Product Data Management System posts HTTP request to SAP NW PI 7.1 and the data is transformed to the above IDocs based on business rules.
- Development is in progress for integration between Partner Relationship Management and SAP CRM
 - Partner Registration is done in web and internally gets created as a Business Partner in SAP CRM.
 - The Go-LIVE data will be after the SAP ECC upgrade Go-LIVE.
- There are many other interfaces identified and the development will start in a phased manner

What are the key benefits of SAP NW PI 7.1 for you?

- **SOA Design governance** using Process component models in the ESR
- **Out of the box process templates** for High Tech using Business Package for RosettaNet
- **Superior taxonomy** for naming SOA artifacts using Folder concepts, local software component version for testing purpose
- **Re-usability** of user defined mapping functions
- **Developer productivity** enhanced using
 - Re-factoring capability of structure / nodes in message mapping in order to repair target field mappings after structure changes
 - Mapping editor adjusts automatically after structure changes
 - Automatically map original node to the new node
 - Parameterized mapping for data binding during runtime
 - Graphical RFC look-up for cross referencing data transformation
 - SQL metadata import functionality to pull database table schemas into Enterprise Services Repository
 - Import / export functionality (saving the .tpz locally)
- **Integrated lifecycle management** using CTS+ for transports

What are the next steps towards using SAP NW PI in your SOA landscape?

- To implement a **single integration backbone** and use the standard out-of-the-box functionality to reduce gaps and complexity in end-to-end business process integration
 - Optimize the business process between the systems
 - Eliminate manual process of data transformation
 - Develop automated capabilities for increasing efficiency
 - Implement customer centric strategy for collaborating and interacting with partners worldwide
 - **Replace and migrate existing middleware** to set one integration platform for both SAP and non-SAP systems
 - **Integrate and interact with Business Partner systems**
 - Out-of-the-box integration for third party systems / applications
- Leveraging new features and capabilities of SAP NW PI 7.1 in day to day integration
- Successful Go-LIVE of remaining SAP PI 7.0 based interfaces on SAP NW PI 7.1 as per the proposed planned date

Do you use SAP NW PI as your Enterprise wide Service Bus?

- Yes

How would you rate the new SAP NW PI 7.1 release in comparison with former versions?

- SAP NW PI 7.1 looks great with the new features and capabilities especially leading to SOA

In which areas could you realize cost / time savings?

- As a single point of integration backbone we will leverage SAP NW PI 7.1 to the full extent

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SAP NW PI 7.1 – Ramp-up Project at EnBW Collaborative Electric Supply Network



Challenge

- Complexities of deregulation
- 5-10 large Electricity producers + a host of smaller ones owned by cities
- Keeping track of who is producing what, who gets billed what and usage
- Work together with Competitors through integrated systems

Business Goal

- Decouple delivery from billing
- Lower interface cost through out of the box process templates
- Integrate with logistics systems of different electricity providers
- Deliver better services to customers through accurate billing

Business Case

- Customers want to access and leverage Enterprise Services Repository (ESR) provided by SAP
- SAP has knowledge of integrating with logistics systems
- **Lower TCO because SAP provides out of the box process templates that cuts time and cost out of integration**



What is EnBW, what do they produce?

- With some six million customers, EnBW Energie Baden-Württemberg AG is the third-largest energy company in Germany. The core activities of EnBW focus on the segments electricity, gas as well as energy and environmental services.

What are your high level scenarios and business problems solved with SAP NW PI 7.1?

- Evaluation of Enterprise Services Repository, Services Registry, XML validation, user defined message mapping functions, user interaction with ccBPM, Business Activity Monitoring (BAM) and Advanced Adapter Engine (AAE)
- Utility B2B scenario based on SAP NW PI 7.1 for internal and external (EDI) communication
- Interoperability of SAP NW PI 7.1 with other third party middleware (e. g. via JMS)

What are the key benefits of SAP NW PI 7.1 for you?

- Increased performance, especially via local processing on Advanced Adapter Engine
- Central modeling environment in Enterprise Services Repository, especially Process Component Models
- Available Enterprise Services

What are the next steps towards using SAP NW PI in your SOA landscape?

- Usage of **Enterprise Service Repository/Services Registry**, e. g. for **SOA design governance**
- Usage of **SAP NW PI 7.1 as central and strategic integration platform**
- Usage of message packaging functionality with SAP NW PI 7.1 for increased performance
- **Productive usage of SAP NW PI 7.1 since Q3 / 2008**, partly with new scenarios and partly with migrated scenarios from SAP XI 3.0

Do you use SAP NW PI as your Enterprise wide Service Bus?

- SAP NW PI is the central and strategic integration platform
- Some integration scenarios run via other third party integration solutions, such as IBM, Tibco, MS BizTalk and SEEBURGER BIS
- Specific integration needs could require dedicated third party middleware e. g. for the integration of MS systems or external partner communications

Do you use the modeling capabilities of SAP NW PI?

- Yes, for the new interfaces EnBW uses the modeling capabilities in the Enterprise Services Repository, such as process component models

Do you use the Services Registry?

- Yes, services from SAP systems are published into the Services Registry extensively use custom classifications
- Non-SAP services are also available in the Services Registry

How would you rate the new SAP NW PI 7.1 release in comparison with former versions?

- A very positive impression of SAP NW PI 7.1 in comparison to SAP XI 3.0 SP18, especially with respect to
 - New functions
 - Good stability
 - Modeling environment of Enterprise Services Repository and Service Registry
 - Good performance via local processing on Advanced Adapter Engine
 - Much faster cache refresh

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SAP NW PI 7.1 – Ramp-up Project Feedback (1) Implementation by Swisscom IT Services AG



What is Swisscom, what do they produce?

- Swisscom is delivering services and products for mobile, fixed and IP-based voice and data communications
- Swisscom has 5.2 million mobile customers, and more than 5.29 million fixed lines, including 1.69 million broadband connections

What are the key benefits of SAP NW PI 7.1 for you?

- Faster processing times through the Advanced Adapter Engine
- Additional throughput based on the same hardware sizing
- Reassessment of the interfaces through Business- and Development Team

Do you use SAP NW PI as your Enterprise wide Service Bus?

- Yes, SAP NW PI is the strategic integration platform



SAP NW PI 7.1 – Ramp-up Project Feedback (2) Implementation by Swisscom IT Services AG



What are your high level scenarios and business problems solved with SAP NW PI 7.1?

- SAP NW PI 7.1 was introduced in conjunction with an upgrade to SAP ERP 6.0. It is a complete implementation of all modules like HR, FI, CO, SD, CS incl. Portal and CRM etc.
- The existing interfaces to partners and internal units have been assessed during the project, there were no requirements to change the interfaces from a business logic point of view
- New development guidelines have been introduced and were implemented when possible
 - E. g. separate IDs and namespaces for each interface, naming conventions for mappings, etc.
- Currently 16 interfaces are productively running via SAP NW PI 7.1. The most important scenarios are:
 - License Management (LMS)
Contract data are stored in a 3rd party data base and sent via SAP NW PI 7.1 to an SAP system. The contract data are used for billing and purchasing
 - Customer Data
Enterprise wide customer data (change, delete, etc.) are exchanged between an SAP and a non-SAP system via SAP NW PI 7.1
 - Order Management
Purchasing department orders IT products at suppliers
 - SLA (Service Level Agreement) Calculation
Data for contract, personal, material, cost center are exchanged between an SAP and a non-SAP system via SAP NW PI 7.1



SAP NW PI 7.1 – Ramp-up Project Feedback (3) Implementation by Swisscom IT Services AG



What are the next steps towards using SAP NW PI in your SOA landscape?

- For January 2009 it is planned that all interfaces will be productively running on SAP NW PI 7.1. These are more than 200 interfaces
 - Most of these interfaces were running already on SAP XI 3.0; around 10 interfaces are new
 - The total message volume is currently around **150,000 – 200,000 messages per day**
- Currently, rules and best practices for the transition of web services towards enterprise services are defined
 - It is planned that in the future the modeling capabilities of the Enterprise Services Repository will be used, such as Process Component Models, global data types, Enterprise Services



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Summary and Further Information

Who is Dräger, what do they produce?

- Dräger is an international leader in medical and safety technology
- Dräger has a company history spanning over nearly 120 years and registered countless patents in above mentioned areas

What are the high level scenarios and business problems solved with SAP NW PI 7.1?

- The SAP NW PI 7.1 upgrade project was an add-on to an SAP SCM - ICH upgrade project
- Three ICH (Inventory Collaboration Hub) processes are implemented:
 - **Supplier Managed Inventory**
 - **Purchase Order Collaboration Process**
 - **Dynamic Replenishment**
- Existing scenarios on SAP XI 3.0 will be migrated to SAP NW PI 7.1

What are the key benefits of SAP NW PI 7.1 for you?

- **SAP NW PI used as state of the art middleware** concept incl. SOA enabling
- The used SAP XI 3.0 content can be upgraded to SAP NW PI 7.1

What are the next steps towards using SAP NW PI in your SOA landscape?

- Plan to upgrade the remaining SAP XI 3.0 integration scenarios in fall 2008
- Plan to have 20 scenarios in productive use through SAP NW PI 7.1 in the near future

Do you use SAP NW PI as your Enterprise wide Service Bus?

- SAP NW PI in an integral part of Dräger's SOA strategy
- Other integration tools currently used are MS BizTalk for the integration of MS systems

Do you use pre-defined ESR content provided by SAP?

- **SAP SCM - ICH content is deployed on SAP NW PI 7.1**

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SAP NW PI 7.1 – Statistics on Usage of Selected Functions (1)



Function	Swiss Post	AMD	EnBW	Swisscom	Dräger
Integrated applications	Non-SAP to non SAP, non-SAP to SAP, SAP to SAP	Non-SAP to non SAP, non-SAP to SAP, SAP to SAP	Non-SAP to non SAP, non-SAP to SAP, SAP to SAP	non-SAP to SAP, SAP to SAP	non-SAP to SAP, SAP to SAP
Synchronous & Asynchronous Scenarios	Both	Both	Mainly async	Both, but mainly sync	Both, but mainly async
A2A and B2B scenarios	Both	Mainly A2A, B2B with RosettaNet Business Package	Mainly A2A	Both	Mainly A2A, but also B2B

SAP NW PI 7.1 – Statistics on Usage of Selected Functions (2)



Function	Swiss Post	AMD	EnBW	Swisscom	Dräger
Message Volume	1.2 million messages overnight; response time of 200ms for a B2B transaction	250 MB in 2 hours; each message size 13 MB (10,000 records)	Up to 250,000 messages per day; single message size up to 80 MB; extensive integration processes	Planned volume of up to 200,000 messages per day	Planned volume of up to 50,000 messages per day in future
Upgrade or migration	Migration	Migration	Migration	Migration	Upgrade

SAP NW PI 7.1 – Statistics on Usage of Selected Functions (3)



Function	AMD	EnBW	Swisscom	Dräger
Adapter types	HTTP, JDBC, RFC, IDoc	JMS, Mail, File, SOAP, JDBC, RFC, IDOC, ABAP proxies	SOAP, FTP, IDoc, RFC, ABAP proxy; 3rd party sFTP adapter	IDoc, ABAP proxy
Mediation capabilities	Mainly graphical mapping	Graphical, XSLT, ABAP, Java mapping; content based routing; extensive integration processes	Graphical, XSLT, Java mapping; content based routing	XSLT mapping; content based routing planned for future
Security	Message encryption, principle propagation	SNC via RFC		

- **Integration centric entry point to SOA** clearly seen as the highest driver
 - Service enable legacy applications in preparation for full fledged SOA projects
- Customers **replace existing middleware and consolidate** on PI 7.1 as their strategic integration platform
- Customers benefit from the **performance enhancements** delivered via the Advanced Adapter Engine and message packaging
- Customers **start with a new installation** in order to further optimize their processes
 - New governance methodologies are applied
 - Limit the number of interfaces to avoid redundancies
 - New naming and guidelines adopted as part of this project
 - Use new hardware for the new deployments
 - Manual configuration of scenarios requiring usage of Advanced Adapter Engine
- Customers with a huge SAP footprint use the **pre-packaged integration content** resulting in minimized costs for integration
- Customers use the automated configuration aspects for **increased developer productivity**

- Upgrade restrictions apply for multi usage type deployments
 - Limitation explained in note 1004107

- Improved usability of configuring XML validation

- Advanced Adapter Engine not supported for all connectivity options and mediation flows

- NetWeaver Administrator for PI require enhancements for monitoring in productive landscapes

- Landscape recommendations required for set up of central Enterprise Services Repository and Services Registry

All the above points are addressed in the upcoming enhancement packages for SAP NetWeaver PI 7.1

SAP NetWeaver PI 7.1 — Feedback From Five Customers



EnBW

- Key benefits: Modeling environment of Enterprise Services Repository and increased performance with Advanced Adapter Engine
- SAP NetWeaver PI to integrate non-SAP systems with non-SAP applications

Dräger

- Key benefits: SAP NetWeaver PI used as state of the art middleware includes SOA enabling
- Existing content from SAP NetWeaver Exchange Infrastructure (SAP NetWeaver XI) 3.0 can be upgraded to SAP NetWeaver PI 7.1



DIE POST

- **65%** of applications are non-SAP
- **1.2 million messages** processed overnight.
- **Response time of 200ms** for an end to end B2B transaction
- **Go-live in three weeks!**



AMD

- Key benefits include the re-usability and re-factoring capabilities within the Enterprise Services Repository
- SAP NetWeaver PI 7.1 will be the ESB, i. e. replace and migrate existing middleware



swisscom

- Key benefits: Faster processing times and additional message load through Advanced Adapter Engine
- SAP NetWeaver PI is the strategic integration platform

SAP NetWeaver – SOA Middleware on SDN

<https://www.sdn.sap.com/irj/sdn/nw-soa>

- **Repository-based Modeling and Design**
<https://www.sdn.sap.com/irj/sdn/soa-modeling>
- **Service Bus-based Integration**
<https://www.sdn.sap.com/irj/sdn/soa-servicebus>
- **SOA Management**
<https://www.sdn.sap.com/irj/sdn/soa-management>

Dedicated Topics about SAP NetWeaver PI 7.1 on SDN:

- [Customer Examples for High Volume Scenarios with SAP NW PI](#)
- [Upgrade to SAP NetWeaver 7.1](#)
- [Quicksizing SAP NW PI 7.1](#)
- [Quickly Install, Configure, and Run SAP NW PI 7.1](#)
- [Available Adapters for SAP NW PI 7.1](#)