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You Need Complete and Trusted Information to Make Good Business Decisions

“90% of upper level management feel they don’t have the necessary information for critical business decisions; 50% of them are afraid they are making poor decisions because of it.”

Economist Intelligence Unit

“BI strategies are deemed to fail without a trusted data foundation”

Gartner

“The #1 risk for building a data mart or data warehouse is data quality”

tdwi

How Good is the Data Behind My Dashboard?

Where did these numbers come from? Are we considering all our relevant sources?

Are these terms consistent with our business definitions?

How current is this data? When was it last updated?

Can I trust this data enough to make my critical decisions? Has the data passed all our business rule checks?
Data Quality Issues Reduce BI Efficacy

Gartner 2009 survey of senior finance managers

Accenture 2007 survey of 160 CIOs

SAP Enterprise Information Management
Core Capabilities

Access All Information
- Access information from structured sources such as databases, applications, files
- Extract information from unstructured sources like documents and text fields
- Connect to both internal and external sources of data

Integrate and Transform Data
- Powerful built-in joining and transformation capabilities
- Simple to use unified design environment

Improve Data Quality
- Profile, cleanse and augment data
- Validate data to conform to business rules
- Eliminate duplicates using advanced matching capabilities

Deliver Data at the Right Time
- Deliver information in batch/real-time, physically/virtually, transaction/row-based

Understand Data Context
- Analyze metadata and understand data relationships
- Bring business context to the physical data
**Customer Pains around Metadata Management**

- **Lineage**
  - Where did the data come from?
  - What are the mapping expressions of calculations?

- **Impact**
  - Which reports will be impacted by object changes?
  - Who will be impacted by design changes?

- **Audit**
  - What is the access permission of a user?
  - Which tables or reports contain compliance data?

- **Usage**
  - Which objects are frequently used?
  - Which universes are not used by any report?

- **Definition**
  - What are the comments of other users?

- **Standardization**
  - Which objects are not conforming to standards?
  - What are the similar or duplicate objects?

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**SAP NetWeaver BW 7.3**

Overview

- **Performance & Scalability**
  - Scalable data models with semantic partitioned objects
  - Optimized load performance
  - Enhanced built-in analytical capabilities
  - BWA-based reporting on objects in SAP NetWeaver BW 7.x.
  - Query as an InfoProvider enabled for better data handling.

- **Integration with BusinessObjects**
  - Optimized integration of SAP BusinessObjects BI Tools Xcelsius, WebI.
  - Tighter integration with SAP BusinessObjects Data Services.
  - Tighter Integration with SAP BusinessObjects Metadata Management.

- **Development Efficiency**
  - Combining real-time transactional data with historical data via HybridProvider.
  - Smarter data flow modeling with remarkably reduced manual effort.
  - Hierarchies integrated into SAP NetWeaver BW 7.x data flow.
  - Flexible modeling environment for analytical indices.
  - ABAP based Planning Modeler w/o requiring a Java stack.

- **Simplified configuration & operations**
  - Faster system set-up with a wizard-based system configuration.
  - Enhanced monitoring capabilities with new content for SAP NetWeaver BW.
  - Administration Cockpit and integration in SAP Solution Manager.
  - Using EIM to maximize the Value of Business Intelligence and Data Warehouse Investments.
BusinessObjects Integration
SAP BusinessObjects Information Management (IM)

<table>
<thead>
<tr>
<th>SAP BusinessObjects Data Services</th>
<th>Release:</th>
<th>Next major Release 4.0/ BW 7.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tighter integration of BusinessObjects Data Services into extended SAP NetWeaver BW data flow concept (DataServices to support BW 7.x DataSource concept)</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>New Source System type in BW: ‘Data Services’ with access to Data Services ‘data stores’ and generation of Data Services data flows (i.e. simple dataflow from data store to BW DataSource)</td>
<td>✔</td>
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</tr>
<tr>
<td>Execute and control process chains from SAP BusinessObjects Data Services to extract data via Open Hub Service</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>SAP BusinessObjects Data Services to schedule loading processes of SAP NetWeaver BW</td>
<td>✔</td>
<td>✔</td>
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<thead>
<tr>
<th>SAP BusinessObjects Metadata Management</th>
<th>Release: XI 3.1/ BW 7.0</th>
<th>Planned for next Rel. in Q2 2011/ BW7.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extend existing BOMM data lineage and impact analysis: include detailed mapping information from source to target</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Change impact analysis between SAP NetWeaver BW objects such as DataStore objects, InfoSets, BEx Queries, and InfoCubes</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>End-to-end capabilities for all data sources through SAP BusinessObjects Data Services</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>End-user access to data lineage information for trusted SAP NetWeaver BW deployment</td>
<td>✔</td>
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Agenda

SAP BW Integration Aspects for …

1. SAP BusinessObjects Data Services
   - SAP BW 7.3 Staging BAPI for 7.0 DataSources
   - SAP BW 7.3 Real-time Data Acquisition for master data
   - SAP BW 7.3 New Source System Type ‘DataServices’

2. SAP BusinessObjects Metadata Management
   - SAP BW 7.3 Metadata Repository Integration
   - SAP BW 7.3 Data Flow Integration

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**SAP BW Integration Aspects for ...**

**SAPBusinessObjects Data Services XI 3.2**
- Tighter integration with increased flexibility leveraging the extended SAP NetWeaver BW 7.0 data flow concept with BW 7.3 Staging BAPI (Data Services 4.0)
- Use Data Integrator to schedule loading processes of SAP NetWeaver BW
- Execute and control process chains from SAP BusinessObjects Data Services to extract data via Open Hub Service
- Leverage Data Quality services (e.g. Data Cleansing)
- Large set of supported Data Sources e.g.:
  - Enterprise applications – JD Edwards OneWorld and World, Oracle Business Suite (EBS), Siebel, Salesforce.com ...
  - Relational data – IBM DB2/UDB, Informix IDS, Microsoft SQL Server, mySQL, Netezza, Teradata, Oracle ...
  - Mainframe via Partner Solutions (e.g. Attunity) - ADABAS, ISAM, VSAM, IMS-DB ...

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**BW 7.3 Layered Scalable Architecture (LSA)**

**Data Services ETL & Quality Tools**

![Diagram of BW 7.3 Layered Scalable Architecture (LSA)]
Load clean and enriched data to SAP NetWeaver BW through SAP BusinessObjects Data Services.

**BW 7.3 Layered Scalable Architecture (LSA)**

Data Services ETL & Quality Tools and OpenHub Interface

- **Strategic reporting**
- **Operational reporting**
- **Corporate Memory**
- **Data Propagation Layer**
- **Master Data**
- **Operational Data Store**

- **Near-line Storage**
- **Data Acquisition Layer**

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Extract data from SAP NetWeaver BW through Open Hub via SAP BusinessObjects Data Services

SBO DataServices – SAP BW as Source System

Open Hub Destination Display: Overview

SBO Data Services 3.2 – SAP BW OpenHub Support

- Tighter integration of BusinessObjects Data Integrator into extended SAP NetWeaver data distribution concept (OpenHub Service)
- Use SAP BusinessObjects Data Services to schedule distribution processes of SAP NetWeaver BW
- Execute and control process chains from Data Services to extract data via Open Hub Services
Benefits for the Customer

SAP BusinessObjects Data Services – the best integrated ETL and Data Quality tool for BW customers

Completes the delivery of an integrated EIM stack

- Extend SAP NetWeaver BW’s connectivity to virtually any data source
  - From files, to databases, applications and mainframe.
  - Knowledge about third-party ERP’s through Rapid Marts

- Ensure trustworthiness of data loaded into SAP NetWeaver BW
  - Cleanse and standardize data before loading into SAP NetWeaver BW
  - Common validation rules to filter bad data to error tables for correction
  - Cleanse and enrich existing data already available in BW using the BW OpenHub interface
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   - SAP BW 7.3 Metadata Repository Integration
   - SAP BW 7.3 Data Flow Integration

SAP BW Integration Aspects for …

SAP BusinessObjects Data Services XI 3.2

- Accurate reliable master data for operational BI needs
- Real-time Data Acquisition (RDA) for master data available with BW 7.3
- BW concept of RDA with WebServices extendable into DataServices framework
  - Data Services Datastore of type Web Service
  - Referencing BW generated WebService Despiption (WSDL)
  - Web Service Security (WSS) standards acknowledged
In marketing we are always in trouble with the quality of address data. Any news in that direction? Can I have Operational BI quality for Master Data updates with minimal latency times as well?

… no problem – we would recommend to:

- Implement Real-time Data Acquisition for master data in BW
- Use DataServices Quality tools for Address Cleansing and Geo Coding
- Use DataServices datastore type WebService to support BW with up-to-date information

### Address Cleansing Scenario I

Enrich existing BW Customer Master Data

1. Extract customer master data (addresses) from SAP NetWeaver BW by calling a process chain and get the data via an Open Hub Destination
2. Join this data with non-SAP data from a relational database table (with bank account numbers)
3. Cleanse & correct the address information
4. Add geocoding information (latitude/longitude) to visualize customers on a map
5. Load the cleansed and enriched data back to a SAP NetWeaver BW DataSource
**Address Cleansing Scenario II**

RDA WebService Push into BW Customer Master Data

**Modelling within the Data Warehousing Workbench and the SOA Manager**

- RDA capable WebService DataSource
  - Push Controller
  - WebService: Data
  - Endpoint

**Requests opened and closed “on demand”**

- InfoPackage
- RDA Processing
- PSA

**Datastore Type**

- WebService Datastore Definition based on BW WebService URL

- Datastore Type WebService
  - LP
  - Proxy: Data

**Application Data**

**Example: WebService Push DataSource with Real-time Data Acquisition in BW**

- SAP BW
  - ODL from TekmaDic
  - TechEd BW WebService

**Real-time Data Acquisition using WebService DataSources (Push)**

- System generated WebService based on DataSource definition
- WebService Administration within SOA Manager offering detailed service definitions for
  - WSDL descriptions
  - Selected binding and additional Web Security Services
Data Services WebService Datastore supporting Real-time Data Acquisition in BW

Real-time Data Acquisition using BW WebService DataSources (Push)
- Datastore type Web Service configured with BW generated WSDL
- Web Service Security supported for system connection
- BW WSDL descriptions generate Schema definitions in DataServices

Data Services Dataflow supporting Real-time Data Acquisition in BW

Real-time Data Acquisition using BW WebService DataSources (Push)
- Dataflow in Data Services with Web Service call configured with BW generated WSDL
- Web Service call part of a Query stage
- Self managed status monitoring
Benefits for the Customer

SAP BusinessObjects Data Services – Web Service support for operational BI needs

Completes the BW Real-time Data Acquisition (RDA) framework

- Extend SAP NetWeaver BW’s RDA concepts to virtually any data source using Data Services Datastores of type Web Service
- Reliable Address and Geo Coding Information for successful Marketing Campaigns with minimized latency
- Future BW Web Service Pull Concept will also be supported on Data Services side

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   - SAP BW 7.3 Data Flow Integration
SAP BW Integration Aspects for ...

SAP BusinessObjects Data Services XI 3.x

- Outlook: BW Source System Type ‘Data Services’
  - Seamless Data Services integration into the BW dataflow design process
  - One design environment for all dataflow objects
  - Data Services Datastore categories visible in the BW Admin Workbench Modeling environment
  - BW based generation of new Data Services Datastore source and target objects
  - BW based generation of Data services dataflows with simple one to one mapping queries
  - BW based generation of InfoPackages to launch hidden data flows in Data Services

BW Source System Type ‘Data Service’ – DS DataStores visible in BW Admin Workbench

Data Warehousing Workbench:

- Visualization of Data Services Datastores of different types
- Datastores link to specific source tables or views

BW Source System Type ‘DataService’

- Visualization of Data Services Datastores of different types
- Datastores link to specific source tables or views
BW Designtime for Source System and DataSource – Automated Generation of DataStore Entries

Data Warehousing Workbench: Modellierung

BW controlled Data Services design
- BW DataSource definition directly generates Datastore entries in DataServices
- BW DataSource structure can be selected from datastore of different types

BW Designtime for DataSource and Infopackage / generated DS Workflow

Generation of Data Services job and dataflow
- Based on BW DataSource definition
- BW InfoPackage descriptions including jobname, repository, and job server
Data loaded successfully to BW

Benefits for the Customer

Leveraging Data Services connectivity capabilities for BW users

Extending the reach of BW design time environment

- Source Systems of the BW Modeling Workbench enhanced with all types of Data Services Datastores
- Implement simple Data Services data flows remotely from BW
- Enhance pre-generated DS data flows with sophisticated quality and cleansing transforms in the Data Services Designer (Caution: Will be lost after regeneration of BW DataSource)
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What are the Business Challenges for SAP BusinessObjects Metadata Management Prospects?

Key Challenges

- Disparate metadata from various tools and sources
  - Each create its own metadata - Lots of overlap
  - Each metadata may have its own formats and representation

- Lack of a consolidated view of metadata relationships across tools
  - Nearly impossible to view metadata relationships across tools
  - Difficult metadata traceability
  - Metadata silos by IT and business organizations

- Compromised ability to provide impact analysis and data lineage for the entire intelligence Environment
  - Can I trust the accuracy of my reports?
  - Where is the data coming from?
  - What if I change a table or row?...what would the impact to that change?
SAP BusinessObjects Metadata Management Brings All Your Metadata Together in One Place

Consolidate, Integrate, Audit, and Trust your Metadata

BI Systems
- BusinessObjects Explorer
- SBOP Business Intelligence
- SAP NW BW

Databases
- DB2
- Oracle
- MS SQL Server
- Sybase – Teradata

ETL
- SBOP Data Integrator
- SBOP Data Federator
- IBM DataStage
- Informatica PowerCenter
- Oracle Warehouse Builder
- Microsoft SSIS

Modeling Tools
- CA Erwin
- Sybase PowerDesigner
- Embarcadero ER/Studio
- CWM XML

SAP Metadata Management for SAP Netweaver Business Warehouse

Metadata Directory for the Navigation in the metadata of different applications

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Available object types of an SAP NetWeaver Business Warehouse..

Additional SAP NetWeaver Business Warehouse object types...
Graphical overview of objects related to InfoObject 'CUSTOMER'.

Data Lineage overview for the persistency of the master data InfoObject 'CUSTOMER'.
Metapedia —
A Business Metadata Encyclopedia

Supports data governance, data stewardship, and proactive compliance

- Business glossary of terms related to the business data
- Organizes terms hierarchically (subject area/BU)
- Link business terms to related metadata objects
- Build a standard business vocabulary of words, phrases, or business concepts
- Synonyms and keywords to associate a metadata object with a particular term
- Category and subcategory of terms to denote a common functionality

1. New business metadata functionality
2. Search includes business terms and categories
3. Categorize business terms

Benefits for the Customer

Information you can trust

- Metadata Management consolidates metadata from multiple systems and provides information on the use of data in the entire BI landscape – a DW of metadata
- Understand your entire BI environment and data migration projects
- Lower your TCO by tracking usage and promote reuse of data and reports
- Improve decision making and regulatory compliance
- Industry first Metapedia – an encyclopedia that translates metadata into business definitions
Roadmap: From Metadata Management to Information Steward

- ICC version 1 is a **first step** towards a longer-term solution supporting data governance
- **Integrated** metadata management, business glossary, data quality assessment, and data quality monitoring
- **“One place”** for data stewards and business analysts to collaborate and govern their data asset
- Various **perspectives** to understand and analyze trustworthiness of data
- **Easy and secure** access to a rich set of metadata & data sources

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2. **SAP BusinessObjects Metadata Management**
   - SAP BW 7.3 Metadata Repository Integration
   - SAP BW 7.3 Data Flow Integration
SAP BW Integration Aspects for ...

SAP BusinessObjects Metadata Management  XI 3.1

- End-to-End Data lineage and change impact analysis in heterogeneous environments
- View all metadata associated with your BI systems, DB sources, DI systems, and modeling tools
- Analyze lineage to understand where the data came from and what sources provide data for your BI reports
- Analyze the impact of changing a source table, column, or report field on your BI reports
- Detect and analyze relationships (such as "same as", "is related to" across metadata sources.

SAP NetWeaver Business Warehouse 7.30
Complex Metadaten Management

For tax compliance reasons, we need to make the calculation of key figures transparent to our business users. How can this be done in a complex system landscape with several different meta models.

… no problem – we would recommend to:

- Use Business Objects Metadata Management to provide visibility into how data flows throughout the various systems and Meta Models
- Share metadata information among different modeling environments and visualize impact and lineage diagrams
Data Lineage directly from InfoView

User performs analysis with up-to-date date lineage information from within his reports.

Impact Analysis from the Metadata Management Explorer

IT users can see what the impact of changes in a source will mean for universes, reports and users.
Typical BI Landscape for Customers with SAP ERP & BW

IT users can see complete dataflows across different data models

Benefits for the Customer

Only BI centric metadata management solution that promotes data governance and enables trusted information

Reliability and Trustworthiness of Information counts

- Provide visibility into how data flows throughout the various system models
- Lower your TCO by tracking usage of data and reports
  (for instance: You can determine which data in your DW is never used in your BI reports or which reports are never viewed by users)
- Verify Impact Analyses and Data Lineage across system boundaries
- Give End-Users Access to Data Lineage for trusted information
- Data Lineage Helps Users Make Confident Decisions
SAP NetWeaver BW 7.3

Overview

- Scalable data models with built-in Semantic Partitioned Object (SPO)
- Optimized load performance for DataStore Objects and Master Data
- Enhanced built-in analytical capabilities for SAP NetWeaver BW Accelerator
- BWA-based reporting on Data Store Objects (via Hybrid provider)
- Query as an InfoProvider enabled for mass data handling

Performance & Scalability

- Optimized integration of SAP BusinessObjects BI Tools Xcelsius, WebI
- Tighter integration with SAP BusinessObjects Data Services
- Tighter Integration with SAP BusinessObjects Metadata Management

Integration with BusinessObjects

- Combining real-time transactional data with historical data via HybridProvider
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- Enhanced monitoring capabilities with new content for SAP NetWeaver BW
- Administration Cockpit and integration in SAP Solution Manager

Simplified configuration & operations

Enterprise Information Management with SAP

Further Information

- SAP Public Web:
  SAP Developer Network (SDN): http://www.sdn.sap.com/irj/sdn/nw-informationmanagement

- Related SAP Education and Certification Opportunities
  http://www.sap.com/education/

- Related Workshops/Lectures at SAP TechEd 2010
  EIM262, Model your EDW with SAP NetWeaver BW 7.3, H2 and other sessions of this subtrack …
Feedback

Please complete your session evaluation.

Be courteous — deposit your trash, and do not take the handouts for the following session.

THANK YOU!