New BI Capabilities in SAP NetWeaver 2004s

Product Management SAP NetWeaver BI

Version 2.0
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SAP NetWeaver is a technology suite that:

- Leverages core SAP’s strengths (proven, mission-critical)
- Delivers the foundation for all application needs (complete)
- Is integrated out of the box (low TCO)
- Built to extend SAP and to integrate non-SAP (open, standards-based)
Historically
- BI limited to IT Experts, Business Analysts, High Level Reports for Senior Management
- BI → mainly a tool business & not integrated into the underlying infrastructure
- No integration into operational tasks
What Is Needed for the future

Seamless integration of transactional and analytical content

Unified modeling environment for business users and developers

BI for the masses (Information consumers)

High performance use of BI

Business Intelligence for People Empowerment

- Robust & Scalable Infrastructure
- Push & Subscription mechanisms
- Speed and flexibility
- On-the-fly analytical insight
- Actionable BI
- High Visual Appeal & Usability
In 2005, SAP NetWeaver BI will provide a foundation for reporting and analytics in business applications, extend the reach towards masses of end-users, integrate planning into user interfaces and services, and push forward its role as a strategic data warehouse platform.

BI as enabler technology for SAP and non-SAP business applications. The focus in 2005 is put on Operational Reporting and embedded BI as well as to service-enable the BI platform in a service-oriented framework.

In the age of “information democracy” every employee is (potentially) a consumer of BI applications. SAP NetWeaver BI will facilitate to extend the reach of BI by providing business user-oriented easy-to-use UIs as well as reliable and fast response-time performance.

Today, planning and simulation is seen as the natural extension of BI. This is nothing new from the business process point of view. However, it is currently not adequately reflected in most of the BI product offerings. In 2005, a fully integrated BI and planning solution will be provided: Common user interfaces, design tools, services, engines, persistency, meta data,…

The information provided and stored in a modern data warehouse must be current, complete, and represent an enterprise view of your entire organization to ensure that decisions are accurate, strategic, and timely. SAP NetWeaver BI will further support a strategic deployment as an enterprise-wide data warehouse: Easier administration and life cycle management, enhanced data transfer processes,…
SAP NetWeaver BI in 2005

Enterprise Data Warehousing

Enterprise Reporting, Query, and Analysis

Business Planning and Analytical Services

SAP NetWeaver BI beyond 2005
Enterprise Data Warehousing – Variants & Processes

Modeling the EDW

- Meta Data & Document Management
- Data Modeling
- Data Acquisition
- Transformation
- Data Distribution

Running the EDW

- User Management
- Administration & Monitoring
- Data Flow Control
- Performance Optimization
- Information Lifecycle Management
Modeling the EDW - Main Processes Overview

Data Modeling
Data modeling supports and facilitates highly flexible and comprehensive information models. In particular, it enables an EDW layering that also supports future information requirements (‘supporting the unknown’).

Meta Data & Document Management
Meta data and documents must be managed, searchable and open with respect to exchanging them with other systems. Documentation on meta data should be generated.

Data Acquisition
Data acquisition plugs your SAP BI to various (heterogeneous) source systems – either via direct BI connections or via SAP Exchange Infrastructure. It also includes remote connectivity to source systems (federated query).

Transformation
Transformation is the main process for data consolidation, cleansing and integration. Data from possibly heterogeneous sources can be semantically synchronized here.

Data Distribution
In addition to querying on the data residing in the Data Warehouse (see other Scenario Enterprise Reporting), data can also be distributed to other warehouse – in case your EDW landscape consists of several warehouses.
Data Modeling – 1 –

SAP NetWeaver 2004s provides additional flexibility for implementing new data models and changing existing ones:

- **Data Warehousing Workbench as successor of Administrator Workbench**
- Improved usability
  - Split into modeling and administration aspects
  - New InfoCube maintenance UI
  - Display complete dataflow from source to target
  - Integrated Object Editor
  - New navigation possibilities
Modeling the EDW - Main Processes
SAP NetWeaver 2004s provides additional flexibility for implementing new data models and changing existing ones:

- **Enhanced DataStore objects (formerly: ODS objects)**
  - Improved performance and flexibility
  - Performance optimization of activation process
  - New DataStore Type: Write-optimized DataStore (without change log, no activation, Partitioning supported)

- **Example for write-optimized DataStore object:**
  - Staging of large volumes of document data with unique key into fast inbound layer
    - Data can be directly written into the DataStore without activation
    - The request information enables further processing/update of the data
    - Missing change log does not allow delta determination of multiple records with the same key
Modeling the EDW - Main Processes

Edit DataStore Object

DataStore Object: Select Type

DataStore Object: PM_DSSLS
Description: DataStore Sales Order (EDW)

Type:
- Standard
- Direct Update
- Write-Optimized

Version
- Save
- Not saved

Settings
- Type of Data Standard
- Generation c
- Unique Data
- Set Quality S
- Activate Data
- Update Data

Key fields:
- Sales doc0 DOC_NUMBER CHAR 10
- Sales doc08_ORD_ITEM NUMC 06

Data Fields:
- Confirmed q CCONF_QTY QUAN 09 Quantity
- Desired Delivered QTY QUAN 09 Quantity
- Date on which CREATEDON DATS 08 ODATE
- Amount with ODIS QTY QUAN 09 Quantity
- Net price ONET_PRICE CURR 09 Amount
- Material OMATERIAL CHAR 18
- Sold to party OSOLD_TO CHAR 10
- Company code OCOMP_CODE CHAR 04
- Customer group OAGT_GROUP CHAR 02
- Distribution channel ODISTR_CHAN CHAR 02
- Sales group OAGT_GRP CHAR 03
Data Modeling – 3 –

SAP NetWeaver 2004s provides additional flexibility for implementing new data models and changing existing ones:

- **Enhanced InfoSets**
  - Improved flexibility
  - Integrate InfoCubes into join condition

- **Example for new InfoSet features:**
  - Slow-seller’s analysis
    - Define outer join condition between article master data and sales InfoCube
    - Result: all articles – even those, which have not been sold

- **Transitive Attributes**
  - Join InfoCube containing material to InfoObject material and join material to InfoObject material group
  - Now you can also use the (‘transitive’) attributes from material group
Modeling the EDW - Main Processes
SAP NetWeaver 2004s provides additional flexibility for implementing new data models and changing existing ones.

**Re-Modeling Toolbox**
Changing InfoCubes without rebuilding them from scratch – improved flexibility

- Remove, exchange, replace, add & fill dimension characteristics and key figures
- Information: during (dictionary-based) conversion process, queries are not possible; aggregates will be automatically deactivated and must be rebuilt afterwards
Remodeling Rule CG1_ZAK_MRT1 - Infopovider ZAK_MRT1

0. Operation Description - Msg in RSCNV
   1. Add characteristic ZCOUNTRY to dimension ZAK_MRT11.
   2. Replace characteristic ZDISTR_CH with ODISTR_CHAN.
   3. Add key figure OAMOUNT.
   4. Replace key figure ZINVCD_VA with ZINVCD_VAL.

Add characteristic: ZCOUNTRY
To Dimension: ZAK_MRT11

Using:
- Constant
- Attribute: ZCOUNTRY
- Of characteristic: ZFA8HPT0
- 1:1 Mapping
- With characteristic
- Customer Exit
Meta Data & Document Management – 1 –

SAP NetWeaver 2004s supports customers in quickly building up their data model out of pre-delivered business content. It also supports quality checks of customer-specific content objects.

- **Content Analyzer**
  - New Tool which is delivered with BI Content 7.0.2 Add-On:
    - Analysis of BI content objects with respect to errors and inconsistencies
    - Easy access and determination of the results of analysis
    - Extensive reporting possibilities based on the results of analysis
    - Role-specific deployment: analysis (administration) and reporting (governance)
SAP NetWeaver 2004s supports customers in quickly building up their data model out of pre-delivered business content. It also supports quality checks of customer-specific content objects.

**Content Browser**

New standard business content objects. The content browser helps customer getting a clear overview about business content which is applied in the customer’s SAP BI and provides an easy way to find out the appropriate standard business content:

- Overview about business content in a given area (e.g. CRM, SRM etc)
- Usage of customer-defined content and SAP standard content
- Relationship between different content objects
Modeling the EDW - Main Processes

Data Acquisition

SAP NetWeaver 2004s improves and streamlines the data source definition. In addition, it enhances remote access capabilities.

- **New DataSource concept**
  - Unified and improved maintenance
    - E.g. Web Service (XML), UD Connect
    - Additional DataSources enabled for remote access (including flat files and DB Connect)

- **Enhanced remote capabilities**
  - Remote master data access – no data replication, low TCO
    - Remote access of master data from source systems
Modeling the EDW - Main Processes

Data Warehousing Workbench: Modeling

Source Systems
- BW
- SAP
- External System
- File
  - <No Text Available in this Language>
  - AUTHFILE
  - BENCH
  - EXCEL
  - FileSourceSystem
  - new data source for the dtp scenario
  - SAP Demo
  - T_SRC_Filesystem
  - T_SRC
  - VOP_DaSePro FlatFile
  - VOP FlatFile
  - <No Text Available in this Language>
  - VERIFICATION

DB Connect
- ID_MSS_Northwind
- G12_ORA
- SQL_OPA
- ID_MSS_Northwind Gruppe XX
- UID Connect
- UIDC
- ABO_SDK_JDBC
- SDK_J20_JDBC
- UDDTEST
- SDK_JDBC
- UIDC
- WebService
  - WEBSE

DataSources
- Unassigned Nodes
- NODESNOTCONNECTED
- RKT_Demos (Uple)
- ZURTEST
- Database: IDD_MSS Table: RUDINVOC NDB RUDINVOCES
- Northwind Customers
- DBCMS_CUST
- GetNYCustomers
- ZPAK_1YR74444/DOZZ8
- Northwind Invoices
- DBCMS_IN02
- Northwind Products
- DBCMS_PROD
SAP NetWeaver 2004s significantly improves transformation capabilities. The improved graphical UI contributes to decrease TCO.

**Transformation**

Improved performance, flexibility and usability, simplification by unifying transfer and update rules
- Unification of transfer and update rules
- New rule type: end routine
- New rule type: expert routine (pure coding of transformation)

**Unit Conversion**

Capabilities for unit conversion during data load (and reporting)
Modeling the EDW - Main Processes

Transformation Rule Display

Transformation Rule: ODSO_PM_NW03 -> CUBE NW_PM04
Source: Sales Order and Amount (PM_NW03)
Target: Sales Revenue (NW_PM04)
Version: ACTIVE
Active Version: Executable

Sales Order and Amount (PM_NW03)

<table>
<thead>
<tr>
<th>Pos</th>
<th>Key</th>
<th>InfoObject</th>
<th>Ioc</th>
<th>Descript.</th>
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<tbody>
<tr>
<td>1</td>
<td>OD_ORD_ITEM</td>
<td>Sales document item</td>
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<td>2</td>
<td>CDOC_NUMBER</td>
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<td>Material</td>
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<tr>
<td>4</td>
<td>ONET_PRICE</td>
<td>Net price</td>
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<tr>
<td>5</td>
<td>OSOLD_TO</td>
<td>Sold-to party</td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>OCOMP_CODE</td>
<td>Company code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>OCUST_GROUP</td>
<td>Customer group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>ODSISTR_CHAN</td>
<td>Distribution Channel</td>
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<td></td>
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<tr>
<td>9</td>
<td>OSALESORG</td>
<td>Sales Organization</td>
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<td>Product hierarchy</td>
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<td>Plant</td>
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<td>Division</td>
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<td></td>
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<td>14</td>
<td>OSALES_UNIT</td>
<td>Sales unit</td>
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<td>15</td>
<td>ODCCURRENCY</td>
<td>Document currency</td>
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Sales Revenue (NW_PM04)

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<th>InfoObject</th>
<th>Ioc</th>
<th>Descript.</th>
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</thead>
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<tr>
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<td>OMATERIAL</td>
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<td>Sold-to party</td>
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<tr>
<td>4</td>
<td>OCOMP_CODE</td>
<td>Company code</td>
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<tr>
<td>5</td>
<td>OCUST_GROUP</td>
<td>Customer group</td>
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<tr>
<td>6</td>
<td>ODSISTR_CHAN</td>
<td>Sales Channel</td>
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<td>Sales Organization</td>
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<td>Material group</td>
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<td>ODIVISION</td>
<td>Division</td>
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<td></td>
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<tr>
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<td>Calendar Day</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>OCALENDAR</td>
<td>Calendar Year/Month</td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>OCALENDAR</td>
<td>Calendar Year/Quarter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>OCALENDAR</td>
<td>Calendar Year</td>
<td></td>
<td></td>
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<tr>
<td>16</td>
<td>OFSYEAR</td>
<td>Fiscal year</td>
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<td></td>
</tr>
<tr>
<td>17</td>
<td>OFSQUARTER</td>
<td>Fiscal year / period</td>
<td></td>
<td></td>
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</tbody>
</table>

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Modeling the EDW - Process Flow

Data Modeling

1. Activate Business Content InfoObjects
2. Implement Data Store Objects (DWH layer)
3. Implement InfoCubes (archit. data mart)
4. Implement other InfoProviders (InfoSets, MultiProviders, …)
5. Exchange metadata with other systems
6. Generate documentation and store it in KM
7. Connect InfoProviders to source systems (SAP sources, databases, files, …)
8. Connect BI to XI

Meta Data & Document Management

9. Define transformations for data consolidation
10. Define data distribution to other systems

Data Acquisition

Transformation

Data Distribution
Enterprise Data Warehousing – Variants & Processes

Modeling the EDW

- Data Modeling
- Data Acquisition
- Transformation
- Data Distribution

Running the EDW

- Administration & Monitoring
- Data Flow Control
- Performance Optimization
- Information Lifecycle Management

Meta Data & Document Management

User Management
Running the EDW - Main Processes Overview

- **Data Flow Control**
  Controlling the data flow facilitates design and set-up of data transfer processes and InfoPackages. Real-time data acquisition is one possibility of this set-up. In addition, this process also enables the definition of process chains.

- **Administration & Monitoring**
  Administration & Monitoring covers all scheduling and monitoring activities including data quality features. This process is focused on minimal TCO and highest reliability in data quality.

- **Performance optimization**
  Performance management includes all (primarily query) performance aspects like aggregate modeling, Caching strategies and the new high performance analytics (HPA) feature. It targets high end user satisfaction.

- **Information lifecycle management**
  Information lifecycle management helps reducing the amount of data to be administrated in the data warehouse. It classifies data in current/online data, less important/nearline data and old/archived data. Hence, information lifecycle management helps in reducing TCO and improving performance.

- **User management**
  User management facilitates adaption of company guidelines concerning data security. End user authorizations can be granted in a highly flexible fashion. Additionally, (standard) authorizations of system administrators are covered within this process.
SAP NetWeaver 2004s improves and streamlines the data flow definition and the process chain set-up. In addition, it provides new real-time data acquisition capabilities that facilitate operational reporting:

- **Data transfer process (DTP)**
  - Data ‘Distribution’ within SAP BI (from PSA or InfoProviders to InfoProviders)
  - Improved transparency of staging processes across data warehouse layers (PSA, DWH layer, ODS layer, Architected Data Marts)
  - Improved performance and high scalability
  - Separation of delta mechanism for different data targets: delta capability is controlled by the DTP
  - Enhanced filtering in dataflow
  - Repair modus based on temporary buffers (buffers keep complete set of data)
Data Flow Control – 2 –

SAP NetWeaver 2004s improves and streamlines the data flow definition and the process chain set-up. In addition, it provides new real-time data acquisition capabilities that facilitate operational reporting:

Example for separation of delta logic:
Delta logic is part of the data transfer process

- One source PSA
- Two targets: One DataStore keeping daily data, another one keeping weekly data
Running the EDW - Main Processes

Data Flow Control – 3 –

SAP NetWeaver 2004s improves and streamlines the data flow definition and the process chain set-up. In addition, it provides new real-time data acquisition capabilities that facilitate operational reporting:

- Enhanced real-time data acquisition capabilities
  - XML Web service
    - Direct push into PSA (instead of Service API/Delta Queue)
- Near-real-time InfoPackage & DTP
  - Daemon-based update from delta queue (BW Service API)
  - Daemon-based update of DataStore objects (ODS layer) – including lean staging (with minimized logging)
SAP NetWeaver 2004s improves and streamlines the data flow definition and the process chain set-up. In addition, it provides new real-time data acquisition capabilities that facilitate operational reporting:

- **Process chain enhancements**
  - New Features
    - Copying process chains
    - Display-only mode
    - Parsing system command returncodes
    - Choosing background user for execution of process chain
    - Accessibility
    - Etc.

- **New process types**
  - Decision: depending on conditions, a particular path will be entered
SAP NetWeaver 2004s provides a pro-active monitoring framework and enhanced administration capabilities. TCO reduction is the guiding principle in this context.

- Data Warehousing Workbench as successor of Administration Workbench
- Improved usability
  - Contains process chain maintenance, monitors, delta queue etc.
Running the EDW - Main Processes
SAP NetWeaver 2004s provides a pro-active monitoring framework and enhanced administration capabilities. TCO reduction is the guiding principle in this context.

**Administrator Cockpit**

Centralized Monitoring

- Pro-active support of SAP NetWeaver BI administrator in status tracking and performance optimization (Data Load, Reporting and Planning)
- Focused on critical issues
- Time-lines and comparisons (with deviations)
- Drill-down from overviews to details
- Direct jump to facilitate solving problems
- Based on new technical content InfoCubes
- Based on BEx and EP technology

Enhancements easily possible
SAP NetWeaver 2004s provides a pro-active monitoring framework and enhanced administration capabilities. TCO reduction is the guiding principle in this context.

- **Enhanced query performance statistics**
  - Additional information in technical content for performance statistics
  - Additional flexibility by 4 different modes: aggregated statistics, OLAP, OLAP & Data Manager, no data
  - Recording of parallel processes
  - Improved precision
  - MultiProvider information
  - Reading Cache

- **Enhanced data load performance statistics**
  - Process chains, processes
  - Data Transfer Process details

- **New data load status**
  - PSA tables, InfoProviders, InfoObjects
  - Process chains, processes
SAP NetWeaver 2004s provides a pro-active monitoring framework and enhanced administration capabilities. TCO reduction is the guiding principle in this context.

**Data Quality: Error handling**
Data transfer process (DTP) error stack containing erroneous records
- Error stack contains erroneous records; after fixing, the process can be re-started

**Example for error stack:**
Error stack enhances former error request handling
- Stack collects erroneous records on semantic key basis
- Keeps sequence of records in order to serialize data for DataStore updates
- Keeps multiple records with the same key
Performance Optimization – 1 –

SAP NetWeaver 2004s provides various tools to increase the data load and query performance significantly – among them the innovative high performance analytics approach. Thus, the implementation of large enterprise data warehouses is facilitated.

- **High performance analytics (HPA)**
  A new paradigm for high performance data access.
  - Query performance is boosted by orders of magnitude
  - Simultaneously the realignment processes roll-up and change run are improved significantly
  - HPA is used in connection with KM search engine TREX
  - Provides linear scalability and can fully leverage grid and adaptive computing capabilities
Performance Optimization – 2 –

SAP NetWeaver 2004s provides various tools to increase the data load and query performance significantly – among them the innovative high performance analytics approach. Thus, the implementation of large enterprise data warehouses is facilitated.

Re-partitioning

Re-partitioning enables the change management of partitioned InfoCubes

- Attaching, combining partitions or complete re-partitioning

Example for Re-partitioning:

Change partitioning

- The InfoCube is partitioned on week, this partitioning has proven as too granular – too many partitions have been created during the past years
- The new partitioning should be on monthly basis
Performance Optimization – 3 –

SAP NetWeaver 2004s provides various tools to increase the data load and query performance significantly – among them the innovative high performance analytics approach. Thus, the implementation of large enterprise data warehouses is facilitated.

- Improved performance of processes
  - Extended (intrinsic) parallelism and scalability of following processes
    - Query Execution
    - DataStore object activation
    - Roll-up, change run and compression
  - Platform-specific improvements
    - Clustering on IBM DB6
Information Lifecycle Management

SAP NetWeaver 2004s supports SAP BI customers in reducing the amount of 'online' data that has to be administrated and hence improves overall performance.

- **Near-line storage**
  - Supports data aging (together with data archiving capabilities)
    - New robust, generic interface to near-line storage solutions of certified Complementary Software Partners
    - Data archiving processes implement near-line storage archiving capabilities for InfoCubes and DataStore objects
    - Near-line storage archives transparently accessible for SAP BI Queries
    - Advantage: reduction of administration costs (TCO) and improvement of high volume data warehouse

- **Example for Near-line storage:**
  - 'Clustering' data
    - Online data (= latest data until 3 years ago) is accessed regularly
    - Near-line data (= 3 – 5 years) is accessed once in a while
    - Archived data (> 5 years) is accessed very rarely; before access, data must be re-applied into SAP BI
User Management

SAP NetWeaver 2004s provides a new highly flexible approach to define end user authorizations. This new concept should facilitate even complex security paradigms.

- **New analysis authorization concept**
  - New concept replaces authorization object concept for analysis users
    - Authorization form a union (not an intersection) → ‘as expected’
    - High flexibility of authorizations (e.g. authorized only on the first 10 days of each month)
    - No restrictions in terms of number of InfoObjects
    - Changeable at every time
    - Navigation attributes individually selectable
    - Hierarchy authorizations at the same level as value/interval authorizations
    - Special dimensions for every authorization: InfoProvider, activity, validity
    - Simplified modeling
    - Lower TCO
    - Migration help available (not completely automatic)
Running the EDW - Process Flow

**BI ABAP**
1. Define data flow for all InfoProviders
2. Define real-time data acquisition
3. Set up process chains
4. Schedule processes
5. Use administrator cockpit for monitoring data load processes
6. Define aggregates and implement caching strategies
6’ Use high performance analytics (HPA)
7. Use near-line storage and archiving for data aging
8. Set up standard and analysis authorizations

**BI JAVA**
1. Define data flow for all InfoProviders
2. Define real-time data acquisition
3. Set up process chains
4. Schedule processes
5. Use administrator cockpit for monitoring data load processes
SAP NetWeaver BI in 2005

Enterprise Data Warehousing

Enterprise Reporting, Query, and Analysis

Business Planning and Analytical Services

SAP NetWeaver BI beyond 2005
Business Explorer will facilitate to extend the reach of BI by providing:

An integrated and state-of-the-art modeling environment
- for all types of queries, reports, and analytics
- for business users and IT
- BI data & external data

BI for the masses:
- High Visual Appeal & Usability
- High performance use of BI
- Actionable BI

Seamless integration into
- Portal
- Knowledge Management
- Collaboration
- Visual Composer
Enterprise Reporting, Query, & Analysis – scenario variants

Query, Reporting & Analysis
- Describes the design, deployment & execution of
  - BEx Queries with the new .NET based Query Designer in state-of-the-art .NET Windows UI (Unicode Compliant)
  - Formatted Reports with the new .NET based Report Designer using comprehensive design capabilities (Unicode Compliant)
  - BEx Web Applications with the new .NET based Web Application Designer in WYSIWYG mode (Unicode Compliant)

AdHoc Query
- Describes how a Business User can use the BEx Web Analyzer to analyze ad-hoc queries and create views on various data providers

Excel Integration
- Describes how a Business User can use BEx Analyzer in order to design and interact with MS Excel based BI Apps & workbooks (Unicode Compliant)

Information Broadcasting
- Describes the design, deployment & execution of Information Broadcasting Settings
- Describes how the BI and KM end-user experience can be completely blended together. Seamless integration of BI capabilities with Enterprise Portal, Collaboration and KM

Modeling BI Data with the Visual Composer
- Enables Business Analyst to easily configure BI Applications in a visual modelling environment and to deploy the results into the Enterprise Portal
### Scenario Variant 1: Query, Reporting & Analysis

#### Designing a Query
1. Choose InfoProvider
2. Design query
3. Save query
4. Open query
5. Design report
6. Save report
7. Create new Web template
8. Insert Web items
9. Assign Data Provider
10. Configure interaction
11. Save Web application
12. Deploy

#### Designing a Report
13. Access BI data
14. Analyze data (if applicable)
15. Personalyze data (if applicable)
16. Integrate documents (if applicable)
17. Use KM services (if applicable)
18. Use export/printing services (if applicable)
19. Use Information Broadcasting (if applicable)

#### Designing a Web Application

#### BI User Interaction

---

**Usage Type:** BI Java

**Tools:** Business Explorer

---

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Designing a Query

Query design takes place in the Business Explorer (BEx) Query Designer, a Visual Basic .NET-based Unicode-compliant tool.

State-of-the-art UI concept, providing for example:

- Available tasks for a selected object presented via a *task pane*
- Message panel shows warnings and error messages in context → helps to avoid or correct errors
- Enhanced application menus, toolbars and context menus
- Extended visualization of status and user actions

Support of multi-selected objects – drag&drop, properties

Options for BI-integrated Planning
Designing a Report

- Standard formatting: Font styles (e.g. bold, italic) and colors, etc.
- Group level changes with individual formattings
- Layout options, for example
  - Height of rows, width of columns
  - Multiline column headers
  - Flexible positioning of fields
  - Merger of cells
- Support of hierarchies
- Rules for the presentation of special characteristic values
- Integration of texts, pictures, and charts
- Header and footer for reports and pages

Designing a Web Application

Web application design takes place in the Business Explorer (BEx) Web Application Designer, a Visual Basic .NET-based, Unicode-compliant tool.

- Model-driven BI application building
  - Wizards for charts, maps, command editing
  - Wizard for layout elements (e.g. buttons)
  - „Intellisense“ support for Web API developers
  - Easy integration of native HTML commands
- New layout elements (Tab strips etc.)
- New Web items
- New chart types, e.g. GANTT chart, MTA chart
- Design of planning aware business applications
Review the top 5 products
Analyze top 5 products contributions.
BEx Web Printing

Comfortable PDF based BEx Web printing

- Any type of BEx Web query, Report or Web Application can be converted to PDF and printed
- Leveraging the SAP NetWeaver AS integration with Adobe Document Service
- Adobe Acrobat Reader required, no plug-ins necessary
- Printing options can be maintained globally or individually by an end-user

![pdf-conversion of a web item]
BEx Web Printing

Comfortable PDF based BEx Web printing

- Fit to page width
  - Repeat column headers
- Fit to one page
- Wallpaper
- Page margins
- Export Themes (e.g. black & white)
- Format & Allignment
- Additional Headers & Footers
- Print graphics and tables
- Batch Printing via Broadcaster
Scenario Variant 2: Ad-hoc Query & Analysis

Usage
Type: BI Java
Tool: BEx Web Analyzer

Selecting a Info Provider
(1) Select data provider (BI data or non-BI data)

Performing Ad-hoc Analysis
(2) Set filter values
(3) Use Drag&Drop to change order of columns
(4) Drill-down to characteristic values
(5) Show data as chart
(6) Create a top N condition
(7) Save query view (if needed)
(8) Save the result and broadcast it (if needed)
The processes in the Ad-hoc Query & Analysis variant are performed in the Business Explorer (BEx) Web Analyzer.
Intuitive Ad-Hoc Analysis

Web-based Ad-hoc Design Leveraging Drag & Drop

- Easy navigation, when dropping characteristics on top of rows or columns
- Easy filtering, when dropping a characteristics to filter area
- Personalized Filters
- Saving and distribution of analysis results through strong portal integration
- Close integration to Information Broadcasting and Knowledge Management
- Wizard-based definition of exceptions and conditions
- Query view creation on top of SAP BW and 3rd party data (via XMLA Connectors)
Selecting a Data Provider

- New open dialog
- Data providers can be an arbitrary BI Info Providers or come from a non-SAP BI system
Performing Ad-hoc Analysis 1

- In the initial view, all the characteristics and key figures are displayed that are available for the selected data provider.
- Filter values can be selected using the newly available filter area.
- The result set can be arranged using Drag&Drop.
Performing Ad-hoc Analysis 2

Chart settings can be configured using the chart configuration options provided on the “Chart” tab page.
Performing Ad-hoc Analysis 3

- Guiding Wizards help in creating exceptions or conditions

- After finishing the analysis, you can
  - Save a data view, assign it to a role and use it in other Business Explorer tools
  - Save the result of the analysis and broadcast it
# Scenario Variant 3: Excel Integration

## Query Design
- **Usage Type:** BI Java
- **Tool:** BEx Query Designer
  - (1) Choose InfoProvider
  - (2) Create Query
  - (3) Save Query

## Embedding Queries, Views & InfoProviders
- (4) Open Query, View or InfoProvider
- (5) Embed Query
- (6) Analyze Query
- (7) Save WB

## Workbook Design
- (8) Create WB Layout
- (9) Choose Design Items and Data Binding
- (10) Use Excel Formatting and/or Formulas
- (11) Save WB

## BI User Interaction
- (12) Access BI Data
- (13) Analyze Data (if applicable)
- (14) Personalize Data (if applicable)
- (15) Integrate Documents (if applicable)
- (16) Use KM Services (if applicable)
- (17) Use Export/Printing Services (if applicable)
- (18) Use Information Broadcasting (if applicable)

---

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**THE BEST-RUN BUSINESSES RUN SAP**
Embedding Queries, Views & InfoProviders

- Direct Access to InfoProviders as well as queries & query views
- New workbook default layout
- Intuitive User Interaction via Drag & Drop and re-designed property dialogues
- Personalizable Filter Value Lists (Favorites & History)
- Full accessibility and unicode support
- Excel based data entry and planning. Manual Data entry into Planning Aggregation Levels and usage of planning functions
- Taking advantage of many new information broadcasting features
Workbook Design

- Application-building in Excel (similar to Web Application Designer)
- New Options for Queries with 2 Structures
  - Excel Formulas allow access to any cell of the result set
  - Excel Formatting options can be fully leveraged for BEx Workbooks (e.g. blank lines, fonts etc.
  - Combining Excel Formulas and Excel Formatting allows the design of High-End Formatted solution workbooks
- Integration of Business Planning
### Sales Overview: March 2005

<table>
<thead>
<tr>
<th>Product Group</th>
<th>Product</th>
<th>Net Sales</th>
<th>Billed Quantity</th>
<th>Sales Plan</th>
<th>Billed Quantity Plan</th>
<th>% Variance Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bag &amp; Outdoor</td>
<td>Automatic umbrella</td>
<td>$23,396</td>
<td>1,688 ST</td>
<td>$23,224</td>
<td>1,674 ST</td>
<td>-0.7 %</td>
</tr>
<tr>
<td></td>
<td>Matchstick</td>
<td>$20,356</td>
<td>2,219 ST</td>
<td>$20,363</td>
<td>2,208 ST</td>
<td>-0.5 %</td>
</tr>
<tr>
<td></td>
<td>Ad. Writing Case</td>
<td>$21,316</td>
<td>1,720 ST</td>
<td>$21,291</td>
<td>1,718 ST</td>
<td>-0.1 %</td>
</tr>
<tr>
<td></td>
<td>Laptop-Backpack</td>
<td>$25,813</td>
<td>952 ST</td>
<td>$25,812</td>
<td>952 ST</td>
<td>0.0 %</td>
</tr>
<tr>
<td>Result</td>
<td></td>
<td>$90,880</td>
<td>6,777 ST</td>
<td>$90,569</td>
<td>6,751 ST</td>
<td>-0.3 %</td>
</tr>
<tr>
<td>Accessories</td>
<td>Bottle fastener</td>
<td>$17,997</td>
<td>1,961 ST</td>
<td>$17,689</td>
<td>1,943 ST</td>
<td>-0.6 %</td>
</tr>
<tr>
<td></td>
<td>Cansy Tin</td>
<td>$22,232</td>
<td>16,107 ST</td>
<td>$22,131</td>
<td>16,036 ST</td>
<td>-0.5 %</td>
</tr>
<tr>
<td></td>
<td>Goofy Mug</td>
<td>$23,001</td>
<td>10,435 ST</td>
<td>$23,016</td>
<td>10,310 ST</td>
<td>-0.2 %</td>
</tr>
<tr>
<td>Business Card Case</td>
<td></td>
<td>$25,346</td>
<td>5,692 ST</td>
<td>$25,269</td>
<td>5,613 ST</td>
<td>-0.3 %</td>
</tr>
<tr>
<td>Result</td>
<td></td>
<td>$88,476</td>
<td>34,035 ST</td>
<td>$88,895</td>
<td>33,807 ST</td>
<td>0.7 %</td>
</tr>
<tr>
<td>Office</td>
<td>Mousepad</td>
<td>$21,619</td>
<td>9,439 ST</td>
<td>$21,165</td>
<td>9,241 ST</td>
<td>-2.8 %</td>
</tr>
<tr>
<td></td>
<td>Lamy Pencil</td>
<td>$22,647</td>
<td>4,491 ST</td>
<td>$22,427</td>
<td>4,447 ST</td>
<td>-1.0 %</td>
</tr>
<tr>
<td></td>
<td>Multifunctional-Pen</td>
<td>$23,854</td>
<td>2,261 ST</td>
<td>$23,748</td>
<td>2,251 ST</td>
<td>-0.5 %</td>
</tr>
<tr>
<td>Result</td>
<td></td>
<td>$68,120</td>
<td>16,191 ST</td>
<td>$67,337</td>
<td>15,939 ST</td>
<td>-1.1 %</td>
</tr>
<tr>
<td>Overall Result</td>
<td></td>
<td>$248,476</td>
<td>57,003 ST</td>
<td>$246,821</td>
<td>56,496 ST</td>
<td>-0.7 %</td>
</tr>
</tbody>
</table>

Data Validity: 05/30/05
Information Broadcasting allows you to make objects with Business Intelligence content available to a wide variety of users according to their needs

... the right information: based on BEx Queries, Query Views, Workbooks, Web Applications & Reports

... in different formats: HTML, MHTML, PDF, ZIP, Printer Formats, Online Links, SAP Alerts...

... to the right people: e.g. single users, groups, distribution lists, user-specific or Role-specific (incl. Non-SAP Users)

... in different channels: e-Mail, Portal, BEx Portfolio (Unified access based on Knowledge Management Folders), Collaboration Rooms, Universal Work List...

... at the right time: event driven, exception driven, Ad-Hoc, scheduled
Using KM Services

BI and KM end-user experience can be completely blended together

KM Services enabled on top of any broadcasted BI data as well as on any document attached to BI data

Use KM Services for:

◆ Subscription
◆ Feedback
◆ Discussion
◆ Collaboration
◆ Rating
◆ TREP search
◆ Notes
◆ Download
Additional new broadcasting features include:

New Object Types

- Query Views
- Formatted Reports

New Distribution Types

- Data Bursting → Broadcast to recipients derived from BW master data and optionally adapt the output format for each recipient
- Exception broadcasting - Create Alert settings based on defined exceptions
- Integration into SAP Alert Framework &UWL

New Output Options

- Printers
- PDF Files
Exception-based Alerts can be defined within the Broadcaster.

The Broadcaster can check exceptions in the background.

Can trigger an Alert via the SAP Alert Framework:

- Within the SAP Alert Management you define alert categories. In The BEx Broadcaster these categories can be assigned to specific alerts.
- The category defines the conditions when a specific alert is sent to whom.
BI User Interaction - Accessing Broadcasted Data

**UWL**

- centralized way to access work and relevant information
- Aggregates workflow task items from multiple and different systems
- Enables end users to make direct decisions and actions
- Personalization of the presentation of work items
New Document Integration Features in SAP NetWeaver 2004s BI

- Assignment & Upload of documents via BEx Web
- New Document Browser
- Easy Editor to create and attach HTML documents on the fly
- Assignment of Metadata documents to Hierarchy Nodes
- Enhanced displaying of documents in web applications
- Administration & Maintenance of all the documents via the web (using KM functionality)
- Include existing documents from the BW server via the BW repository managers and/or migration of documents residing in BI to CM Standard Repository
- Use CM standard repository to store documents
Scenario variant 5:
Modeling BI Data with the Visual Composer

Usage Type: EP

Tool: Visual Composer

Modeling Queries in VC

1. Choose Connection
2. Select Query Template
3. Select Query View
4. Model query (freeform)

Reconfiguring Queries in VC

5. Reconfigure / Change if necessary
6. Edit Query Properties
7. Use MDX / SQL Editor
8. Check application within Portal
9. Deploy in Portal
Modelling of BI Applications using the BI Kit of the Visual Composer

- Allows Business Users to create analytical content for SAP Enterprise Portal
- Offers the integration with BI InfoProviders (e.g. InfoCubes, BEx Queries and Query Views, BEx Web Applications) via WEB API as well as with heterogeneous data sources (including OLAP and relational data sources) via Java Connectors
Business Explorer Suite

Visual Composer BI Kit

Enterprise Portal

Business Explorer Suite (BEx)

Information Broadcasting

BEx Web
- BI Pattern
  - Web Analyzer
  - Web Application Designer
  - Report Designer
- BI Consumer Services

BEx Analyzer
- MS Excel Add-in

BEx Query Designer

BI Platform
- Analytic Engine
- Meta Data Mgr

Data Warehouse
- DB Connect
- BAPI
- Service API
- File
- XML/A

UDI
- SAP Query
- JDBC
- XMLA
- ODBO

KM

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VC Dashboard Examples

- Capacity Analysis (SCM)
- Interaction Center (CRM)
- Learning Dashboard (HCM)
- Blocked Order List (FIN)
- Sales Operations (CRM)
- Sales Manager (CRM)
- Visual Composer
VC Composite Dashboard

Sales
Forecast for Current Month: March 2005 (Thousands)

<table>
<thead>
<tr>
<th>Sales Representative</th>
<th>This Month’s Target</th>
<th>Current Opportunity Revenue</th>
<th>Forecast Confidence</th>
<th>Likely Revenue</th>
<th>% of Target Likely to be Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheaton</td>
<td>$36</td>
<td>$36</td>
<td>75 %</td>
<td>$27</td>
<td>75</td>
</tr>
<tr>
<td>Jordan</td>
<td>$80</td>
<td>$80</td>
<td>62 %</td>
<td>$50</td>
<td>62</td>
</tr>
<tr>
<td>Davidson</td>
<td>$44</td>
<td>$40</td>
<td>100 %</td>
<td>$40</td>
<td>100</td>
</tr>
<tr>
<td>Delaney</td>
<td>$200</td>
<td>$175</td>
<td>150 %</td>
<td>$263</td>
<td>151</td>
</tr>
<tr>
<td>Parkinson</td>
<td>$160</td>
<td>$160</td>
<td>82 %</td>
<td>$131</td>
<td>82</td>
</tr>
</tbody>
</table>

Revenue and Margins (YTD 2005 By Customer)

Lost Opportunities (YTD 2005 By Reason)

Lost Opportunities (YTD 2005 By Competitor)
VC Dashboard – Embedded BI

Blocked Order List

<table>
<thead>
<tr>
<th>Doc Number</th>
<th>Short Text</th>
<th>Customer</th>
<th>Net Value</th>
<th>Currency</th>
<th>Creation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000010708</td>
<td>MAG DX 1SF/F</td>
<td>CMS00000040</td>
<td>11279.85</td>
<td>EUR</td>
<td></td>
</tr>
<tr>
<td>0000010733</td>
<td>MAG DX 1SF/F</td>
<td>CMS00000040</td>
<td>7519.9</td>
<td>EUR</td>
<td></td>
</tr>
<tr>
<td>0000010734</td>
<td>MAG DX 1SF/F</td>
<td>CMS00000040</td>
<td>7519.9</td>
<td>EUR</td>
<td></td>
</tr>
<tr>
<td>0000010872</td>
<td>MAG DX 1SF/F</td>
<td>CMS00000001</td>
<td>8990</td>
<td>USD</td>
<td></td>
</tr>
<tr>
<td>0000010873</td>
<td>MAG DX 1SF/F</td>
<td>CMS00000001</td>
<td>8990</td>
<td>USD</td>
<td></td>
</tr>
</tbody>
</table>

Decisions

- Release Order
- Cancel Order
- Recheck Order

Customer Detail

- Customer: CMS00000040
- Credit Score: 59
- Risk Class: E (Very High Default Risk)
- Country: Great Britain

Exposure List

<table>
<thead>
<tr>
<th>Business Unit</th>
<th>Credit Limit</th>
<th>Exposure</th>
<th>Credit Limit Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Credit Segment</td>
<td>$ 500,000.00</td>
<td>$1,645,115.49</td>
<td>329.0</td>
</tr>
<tr>
<td>IDES AG</td>
<td>39,000.00 EUR</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>IDES UK</td>
<td>39,000.00 EUR</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>IDES US INC</td>
<td>$ 300,000.00</td>
<td>$1,645,115.49</td>
<td>329.0</td>
</tr>
<tr>
<td>IDES US INC - Services</td>
<td>39,000.00</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>IDES Financial Services</td>
<td>0.00</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

Exposure Chart by Business Unit

- Main Credit Segment
- IDES AG
- IDES UK
- IDES US INC
- IDES US INC - Services
- IDES - Financial Services

Customer Score History

- Exposure
- Credit Limit

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BEx / Visual Composer Roadmap

Shortterm (BI & VC in NW04s)

- The Visual Composer BI Kit lets you integrate SAP NetWeaver BI data via
  - XML/A, a generic MDX-based Web Service
  - a Web Service based access to BEx Queries and Views
  - embedding a complete BEx Web Application

- The Visual Composer BI Kit leverages important SAP NetWeaver BI features
  - E.g. variable support

- The Visual Composer BI Kit supports wizard-based as well as a freeform modeling of queries

Roadmap (2-3 years)

- BI Pattern (Information Consumer Pattern etc.) can be configured with Visual Composer
- Visual composer will be able to leverage services of the BEx BI Consumer Services Layer
- Finally the BEx Web Application Designer capabilities will merge into the Visual Composer
- Other BEx Tools (Query Designer, Analyzer, Web Analyzer, Report Designer) remain as stand-alone tools in the BEx suite but can also be plugged into the VC and the NW Developer Studio
Enable composite business processes covering analytic, collaborative and transactional steps with embedded Analytics.

Enable highly interactive exploration and planning using Web-Cockpits & Advanced User Interaction.

Enable Analysis and Reporting as:
- Excel-based Reports
- Formatted Enterprise Reports
- Multidimensional Analysis
- Ad-Hoc Analysis

Visual Composer to build integrated insight driven Applications

Web Application Designer to build advanced BI-based Analysis & Planning Applications

BEx Tools such as Query Designer, Report Designer, Analyzer, Web Analyzer
VC & BEx Design Tools in a BI context

Tools: Today: Pattern Designer, Future: VC
zero training, ready to use, easy configuration, any context: from pure BI to BI embedded into a transactional context

Dashboard & Analytical Applications
Tools: Today: BEx¹ & VC; Future (Roadmap): VC
VC focus: seamless combination of SAP NetWeaver BI and Non-BI data; high visual appeal, composite apps
BEx¹ focus: BI only context, High integration with SAP BI, highly interactive BI Apps, fully leveraging BI planning & analytical services

Ad-Hoc Analysis
Tool: BEx²
allows web-based adhoc query & analysis on BI & 3rd Party BI data

Excel-based Analysis
Tool: BEx³
allows MS Excel Users to fully leverage SAP BI’s Analytical services and seamless integration with Excel Formulas and Formatting

Enterprise Reports
Tool: BEx⁴
allows the creation of highly formatted Enterprise Reports

Queries
BEx Query Designer

BI Patterns

Tools: Today: Pattern Designer, Future: VC
zero training, ready to use, easy configuration, any context: from pure BI to BI embedded into a transactional context

Business Analyst

Information Consumer

VC = Visual Composer
BEx¹ = BEx Web Application Designer
BEx² = BEx Web Analyzer
BEx³ = BEx Analyzer
BEx⁴ = BEx Report Designer

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SAP NetWeaver BI in 2005

Enterprise Data Warehousing
Enterprise Reporting, Query, and Analysis
Business Planning and Analytical Services

SAP NetWeaver BI beyond 2005
The IT processes Business Planning and Analysis Services run as follows

- **Planning Model Design**
  
  You can create your planning model in the Planning Modeler. In addition, you can select your InfoProvider and then you can create your aggregation levels and filters.

- **Planning Function Creation**
  
  Choose the aggregation level that you created in the „Planning Model Design“ process and create planning functions in the BW Planning Modeler.

- **Query Design**
  
  You can choose an aggregation level and create queries in the BEx Query Designer.
For this process, there are two different options for publishing the query:

**Option I**

Publishing the query using the **BEx Web Application Designer**

In the “Web Application Designer” process you can create and configure a web application. After this step, you must choose a data binding and configure a interaction. You can configure queries and functions and use them in web templates.
Web Application Design / Excel Integration

For this process, there are two different options for publishing the query:

Option II

Publishing the query using the BEx Analyzer

In the “Workbook Embedding” process you can open a query and save it to a workbook. After that, you must save this workbook. You can configure queries and functions and publish them in Excel and make use of the Excel enhancements.
Online Execution of the Planning Application

In the end of the different steps you can execute the process in Web and Excel.

Planning Sequence Batch Execution

Planning Sequences can be executed in batch as step in a process chain.
The IT scenario variant Business Planning and Analytical Services covers processes that collect data from InfoProviders, queries or other BI objects, transform this data in various ways and write the new information back into a BI InfoProvider (real-time InfoCube and aggregation level).

This includes capabilities for:

- **Homogeneous** analysis and planning user interface
- **One** generic planning tool for all solutions
- **BI Analytical Services** (for example drilldown, alerting, calculated key figures, …) for planning
- **Simplification** of system operation using component consolidation
CHALLENGE

- Slow reaction times due to long analysis and planning processes
- Availability of actual data for forecasting
- Turn high-volume data into high-value information
- Increasing importance in more and more business processes

SOLUTION

- Open and flexible planning framework for all SAP applications
- Fully integrated with BI and analytics services
- One user interface, one design environment, one engine
- Shared services and persistency and integrated meta data
Planning Model Design

You can design your planning structure using the Web-based Planning Modeler.

- Demand for modelling of planning scenarios by business experts that do not have access to Datawarehousing Workbench (RSA1)
- Administration of a planning process requires frequent changes of settings (variables, data slices, formulas)
Planning Model Design

By means of a Planning Wizard, a business expert can create a planning model in a simple way.

The InfoProvider determines the data basis for planning. It contains all the objects that are relevant to a planning model. In most cases this is a real-time InfoCube for direct update. It can also be a partially writable MultiProvider.

Example: the InfoCube contains the characteristics fiscal year, country, product line and product and the key figures quantity, amount and revenue.

Select an InfoProvider. If you choose “start” immediately without making further entries, the system displays all InfoProviders that can be used for planning. You can restrict the list that is displayed according to various search criteria. Select the InfoProvider you want to use by clicking on the relevant row.
Planning Model Design

General benefits of a common concept of planning and analysis:

- Multi-dimensional business structures
- Common variable concept
- Shared authorization concept
- Dynamic lock concept (for example, user locking)
Planning Model Design

Choose Real-Time InfoCube

- InfoCube as the common database for planning and analysis
- Defines relationship between characteristics
- Concept for locking of specific values (for example actual data)
- Flexible design of variables concept
Planning Model Design

Create Aggregation Level

- Selection of key figures and characteristics for the planning process
- Defines level of aggregation for the planning process (top down, button up)
Planning Model Design

Create Filter

- Define a selection of characteristics values within your aggregation level
- Dynamic using of variables, hierarchies and attributes
- Flexible design of a version concept
- Define the work packages for the planner
- Filter is shared with the Query Designer
Planning Function Creation

Definition of Planning Function: With these features, you can edit your plan data by algorithm.

- This step contains the automatic functions for planning and simulation
- Choose from a list of function types delivered by SAP (copy, revaluate, distribute, formula,…)
- Option to develop customer-specific function types
Planning Function Creation

Automatic Functions

- Planning Functions -

- Revaluation
- Reposting
- Formulas
- Currency translation
- Unit conversion
- Copy
- Distribute with reference data
- Distribute by keys
- Delete
- Repost (characteristic relationships)
- Delete (invalid combinations)
Planning Function Creation (Formula Editor)
Planning Sequence Creation

Create planning sequence

- You can use your planning functions in planning sequences.
- You can integrate planning sequences into process chains for an automatic execution of your processes.
Validate your data model when you create it. You can capture data manually and validate it if your data model delivers the expected result.

- Step-by-step execution of functions and manual data entry
- Manual ad-hoc data entry and display for initial test
Queries that are based on aggregation level are able to write back to the InfoProvider.

Following new features for planning:

- Drilldown
- Hierarchical data in rows and columns
- Calculated key figures
- Structures
- Unit conversion
- Alerts
- Conditions
- Graphics
- Ad-hoc currency
- Currency translation

The features will be explained in more detail in the scenario “Query, Reporting & Analysis in Detail”
### Product Planning and Analytical Services

![Microsoft Excel - ProductPlanningAn1](image)

**The Best-Run Businesses Run SAP**

<table>
<thead>
<tr>
<th>Product Line</th>
<th>Juice001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>Germany</td>
</tr>
<tr>
<td>Product</td>
<td></td>
</tr>
</tbody>
</table>

**Product Calendar Year/Month:**

<table>
<thead>
<tr>
<th>Product Calendar Year/Month</th>
<th>Quantity Fixed Unit</th>
<th>01.2005</th>
<th>02.2005</th>
<th>03.2005</th>
<th>04.2005</th>
<th>05.2005</th>
<th>06.2005</th>
<th>Overall Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product 1</td>
<td>220 L</td>
<td>0,000 L</td>
<td>363 L</td>
<td>440 L</td>
<td>121 L</td>
<td>3</td>
<td>1,144 L</td>
<td></td>
</tr>
<tr>
<td>Product 2</td>
<td>242 L</td>
<td>484 L</td>
<td>121 L</td>
<td>365 L</td>
<td>121 L</td>
<td>605 L</td>
<td>1,936 L</td>
<td></td>
</tr>
<tr>
<td>Product 3</td>
<td>121 L</td>
<td>242 L</td>
<td>0,000 L</td>
<td>0,000 L</td>
<td>121 L</td>
<td>722 L</td>
<td>726 L</td>
<td></td>
</tr>
<tr>
<td>Product 4</td>
<td>242 L</td>
<td>0,000 L</td>
<td>121 L</td>
<td>242 L</td>
<td>121 L</td>
<td>121 L</td>
<td>242 L</td>
<td></td>
</tr>
<tr>
<td>Product 5</td>
<td>0,000 L</td>
<td>242 L</td>
<td>121 L</td>
<td>121 L</td>
<td>121 L</td>
<td>968 L</td>
<td>968 L</td>
<td></td>
</tr>
<tr>
<td>Overall Result</td>
<td>825 L</td>
<td>968 L</td>
<td>847 L</td>
<td>1,287 L</td>
<td>484 L</td>
<td>1,089 L</td>
<td>5,500 L</td>
<td></td>
</tr>
</tbody>
</table>
Workbook Design

New workbook default template (similar to the BEx Web Template)
Intuitive user interaction using Drag&Drop and redesigned property dialogs
Personalizable filter value lists (Favorites & History)
Full accessibility and Unicode support
Excel-based data entry and planning. Manual data entry into planning aggregation levels and usage of planning functions
Takes advantage of many new information broadcasting features

- Integration of business planning
- Application-building in Excel
- Excel formulas allow access to any cell of the result set
- Excel formatting options can be fully leveraged for BEx Workbooks (e.g., blank lines, fonts etc.)
- Combining Excel formulas and Excel formatting allows the design of high-end formatted solution workbooks
BEx Web Application Designer

Combine planning and analysis capabilities in Web Applications to provide intuitive planning for end users.

The IT process steps run as follows:

- Create a layout
- Configure a layout
- Choose data binding
- Configure interaction
Web Application Design - Example -

Navigation Blocks:
- Revaluate
- New Product
- Forecast
- Refresh
- Save

Welcome to BI Integrated Planning!

Use planning services: "Revaluate", "New product", or "Forecast" for automated calculation of planned quantities per product.

For manual correction of plan figures, product line, product and country have to be specified either in the view or be part of a filter.

In case of trouble call 012345678.

Plan data:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Juice001</td>
<td>Product 1</td>
<td>383 L</td>
<td>440,000 L</td>
<td>123,000 L</td>
<td>121,000 L</td>
<td>684 L</td>
<td>101 L</td>
</tr>
<tr>
<td></td>
<td>Product 2</td>
<td>347 L</td>
<td>363,000 L</td>
<td>605,000 L</td>
<td>121,000 L</td>
<td>1,059 L</td>
<td>242 L</td>
</tr>
<tr>
<td></td>
<td>Product 3</td>
<td>353 L</td>
<td>11,000 L</td>
<td>242,000 L</td>
<td>121,000 L</td>
<td>374 L</td>
<td>11 L</td>
</tr>
<tr>
<td></td>
<td>Product 4</td>
<td>385 L</td>
<td>242,000 L</td>
<td>121,000 L</td>
<td>1,000 L</td>
<td>354 L</td>
<td>1 L</td>
</tr>
<tr>
<td></td>
<td>Product 5</td>
<td>484 L</td>
<td>242,000 L</td>
<td>121,000 L</td>
<td>121,000 L</td>
<td>484 L</td>
<td>0 L</td>
</tr>
<tr>
<td></td>
<td>Result</td>
<td>2,540 L</td>
<td>1,295 L</td>
<td>1,212 L</td>
<td>495 L</td>
<td>2,985 L</td>
<td>355 L</td>
</tr>
</tbody>
</table>

| Product Line | Product 6 | 484 L   | 11,000 L   | 121,000 L | 363,000 L | 435 L    | 11 L        |
|--------------| Product 7 | 726 L   | 300,000 L  | 404,000 L | 324,000 L | 1,059 L  | 330 L       |
|--------------| Product 8 | 966 L   | 330,000 L  | 121,000 L | 7,000 L   | 458 L    | -510 L      |
|--------------| Product 9 | 352 L   | 440,000 L  | 404,000 L | 77,000 L  | 1,001 L  | 856 L       |
|--------------| Product 10| 121 L   | 1,000 L    | 1,210 L   | 680 L     | 3,010 L  | 346 L       |
|              | Result    | 2,562 L | 1,111 L    | 1,210 L   | 680 L     | 3,010 L  | 346 L       |
|              | Overall Result | 5,302 L | 2,405 L    | 2,422 L   | 1,174 L   | 6,005 L  | 763 L       |

All products and countries:

[Bar chart showing data]
Common Features
for Embedding Queries into Workbooks and Web Application Design

Configure individual End User UIs from BI Building Blocks

- Tables / charts for templates
- Buttons for execution of planning functions
- Wizards for charts, maps, command editing
- Wizard for layout elements (e.g. buttons)
- Dialog boxes for parameterization of planning and analysis services
- Navigation area for selection
- Dropdown for selection
- Variable selection by:
  - Dropdown, radio button group, input field
- Document browser
Planning Application Execution

You can execute your Excel-based process in the BEx Web Application Designer and your Web-based process in the Enterprise Portal.

To run your planning sequences automatically, embed the sequences in process chains.
Simulation

Applications can also be executed for simulation purposes

Available features for simulation:

- Multiple Versions
- Forecast
- Forecast (Methods)
- Excel Capabilities
- Reference Data
- Planning Sequences
- Formulas (Loops, Iteration)
- Aggregation
Benefits

- Brings together analysis & planning on the same database (single version of the truth).
- Improved strategy implementation through flexible top-down distribution capacities and target setting
- Fast reaction to market changes using analytical methods which allow to turn data into action
- Find cross-selling opportunities through market basket analysis
- Great usability and flexibility through graphical design, most sought-after transformations and 3rd-party interfaces to yet more specialized data mining tools
- Companies can easily enhance their existing SAP BI implementation through data transformation, data entry and planning functionality.
Designing a Web Application

Planning Model Design

(1) Choose Info Provider
(2) Create Aggreg. Level
(3) Create Filter
(7) Test Planning Model

Planning Function Creation

(4) Choose InfoProvider (Aggreg. Level)
(5) Create Planning Function
(6) Create Planning Sequence

Designing a Query

(8) Choose InfpProvider (Aggreg. Level)
(9) Create Query
(10) Save Query

Designing a Web Application

(11) Create new Web template
(12) Insert Web items
(13) Assign Data Provider
(14) Configure interaction
(15) Save Web application

Planning Application Execution*

(16) Executing

*IT-Processes are covered by IT-Scenario „Business Reporting, Query and Analysis“
## IT Processes in this process: Business Planning – Excel based

### BI JAVA
- **(1) Choose Info Provider**
- **(2) Create Aggreg. Level**
- **(3) Create Filter**
- **(7) Test Planning Model**
- **(4) Choose InfoProvider (Aggreg. Level)**
- **(5) Create Planning Function**
- **(6) Create Planning Sequence**
- **(8) Choose InfoProvider (Aggreg. Level)**
- **(9) Design Query**
- **(10) Save Query**

### BI ABAP

- **(11) Open Query**
- **(12) Embed Query**
- **(12) Save Workbook**
- **(13) Create WB Layout**
- **(14) Choose Design Items and Data Binding**
- **(15) Use Excel Formatting and/or Formulas**
- **(16) Save WB**
- **(17) Execute**

*IT-Processes are covered by IT-Scenario „Business Reporting, Query and Analysis“*
SAP NetWeaver BI in 2005

SAP NetWeaver BI beyond 2005
ANALYTICS FACING ESA PROMISES

PEOPLE PRODUCTIVITY

ANALYTICS/REPORTING

SERVICE COMPOSITION

SERVICE ENABLEMENT

LIFE-CYCLE MGMT

- Model driven
- Configurable
- Extensible
- Services composition
- Process innovation
- DRIVING PRODUCTIVITY
- People productivity
- Embedded analytics
- Process efficiency
- Process flexibility

BUSINESS OBJECTS, COMPONENTS, AND ENGINES

SAP's Enterprise Services

Partner Services

Enterprise Services Repository

Bus. Partner

Legacy
New Analytics

- Based on integrated and historicized information
- Allowing time-based analysis, planning and forecasting
- Supporting a process
- Embedded in operational context

Integration and process-centricity as key differentiators to traditional BI and KM
INTEGRATED WORLDS
Enterprise Information Management leverages enterprise information for competitive advantage complementing the ESA strategy

ADAPTABLE SERVICES
Services-oriented composition of Analytical Applications allow adaptable embedding of information into tasks, processes and applications

ENABLING THE BUSINESS
Flexible tools and services empower the business user to create analytics independently from IT departments
EASE OF USE
User Interface patterns and Euclid fast query technology exceed the usability and response time expectations of the business user

EFFICIENT INFORMATION ACCESS
Enterprise search and Knowledge Management unlock the information assets of a company and enable real Information Democracy

INFORMATION TO ACTION
Planning and Collaboration allow to take action on queries, reports, business objects and documents