



New SAP BW 3.5 Web Application Designer Web Items and How to Use Them

Oliver J. Mayer
SAP NetWeaver RIG - BI

As a result of this presentation, you will be able to:

- n Create charts using the new Chart Designer Wizard and Chart Designer available with the BEx Web Application Designer (WebAD) in SAP BW 3.5**
- n Make use of the following new web items: the XML items, the Web Template item, and the Query View Selection item**
- n Perform analyses using the BEx Web Analyzer**

Agenda

Overview

Chart Designer

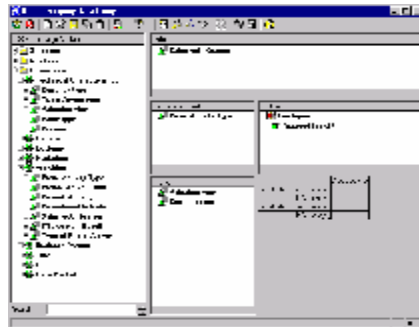
New Web Items

BEx Web Analyzer

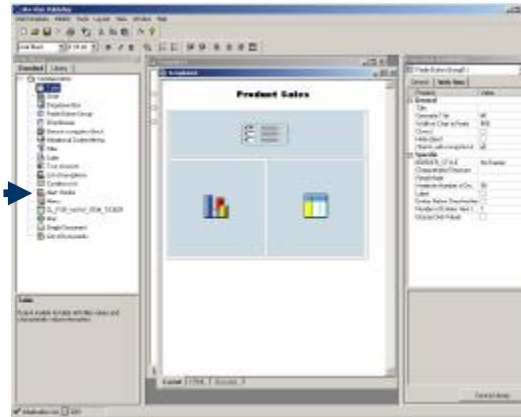
Summary

BEx Web Application Framework

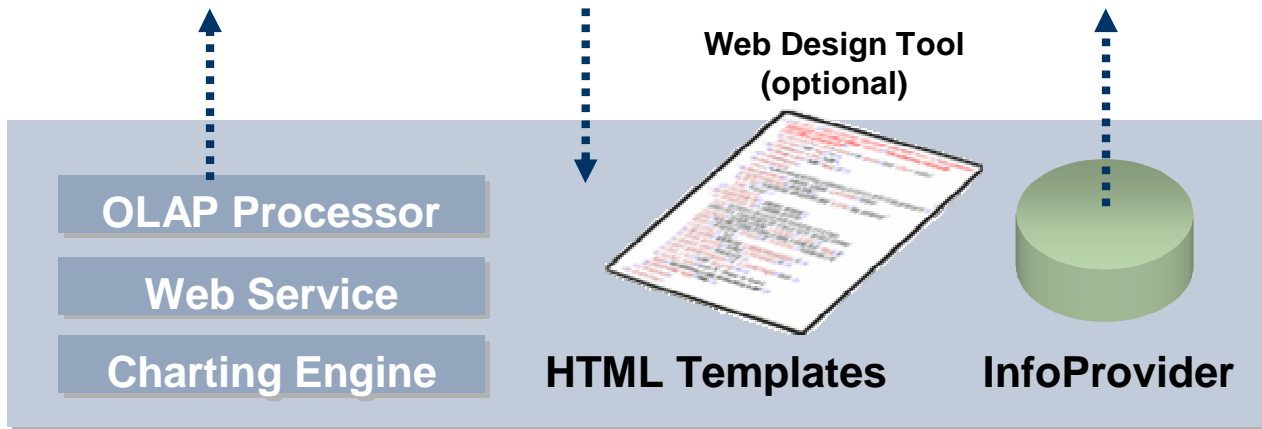
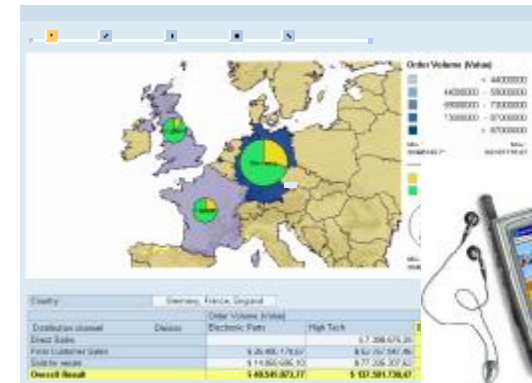
BEx Query Designer



BEx Web Application Designer



Web Browser



BW Server with SAP Web AS

Agenda

Overview

Chart Designer

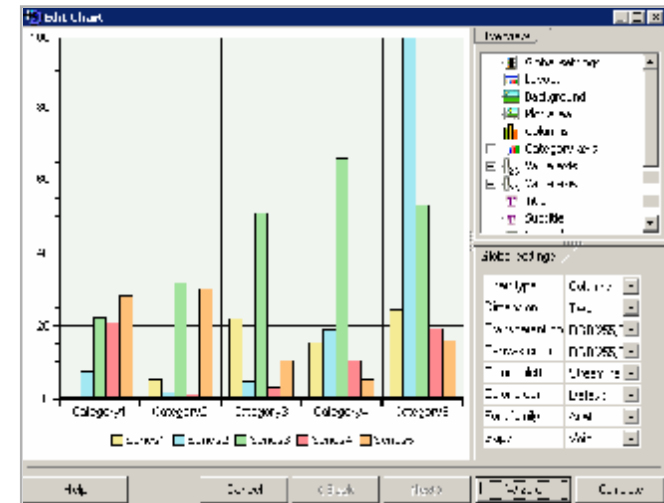
New Web Items

BEx Web Analyzer

Summary

BEx WebAD Chart Designer

- n The visual presentation of business data in form of charts eases the interpretation for the end-users and is helpful in order to support them in their decision-making.
- n The BEx WebAD Chart Designer allows for the fast and easy creation of different chart types for Web Applications based on the data of BW queries or query views.
- n With BW 3.5, the Chart Designer has been significantly enhanced. New features are:
 - n An integrated Chart Designer Wizard
 - n Five new chart types
 - n A number of additional features

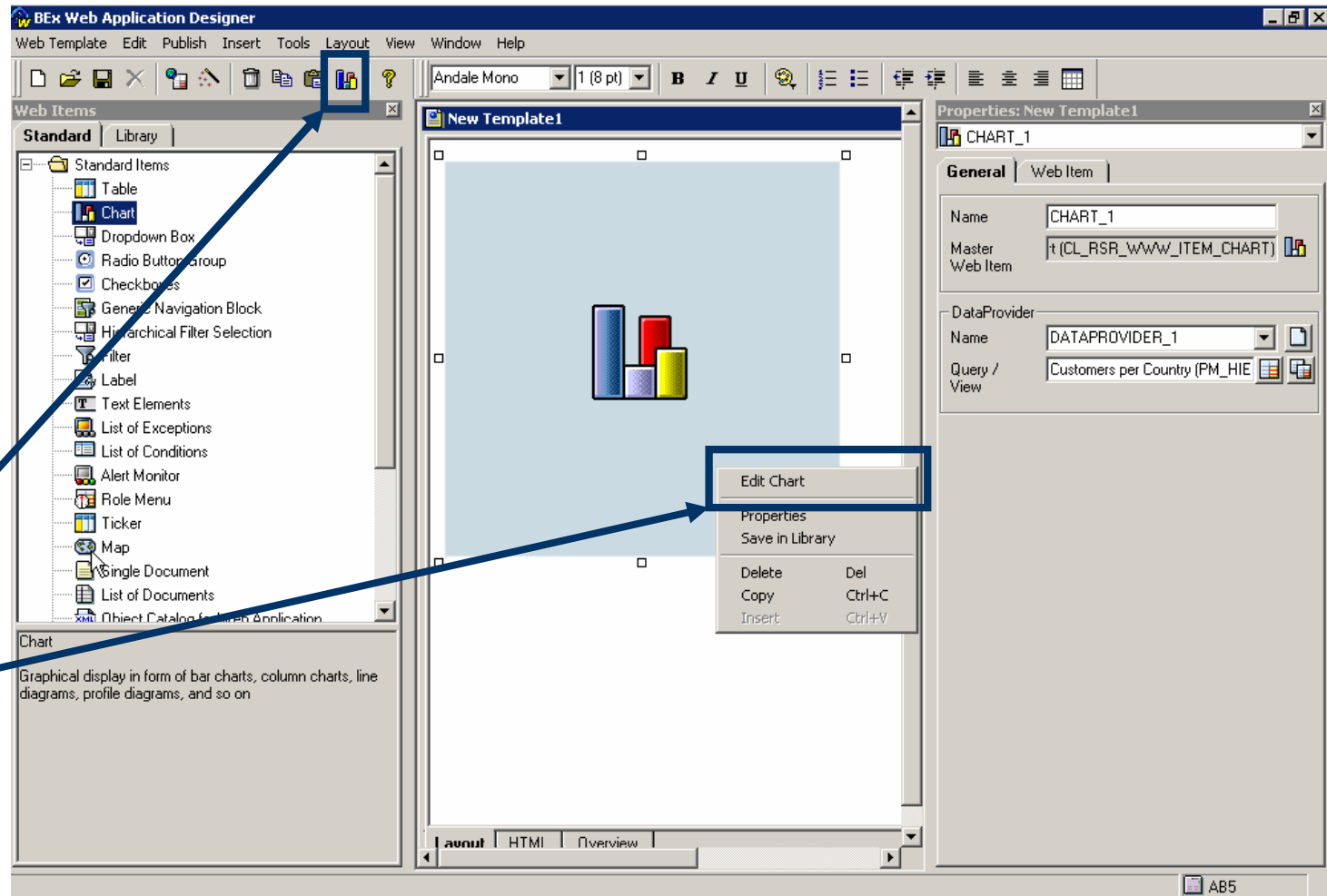


How to Start the WebAD Chart Designer Wizard

Start the Chart Designer Wizard in the WebAD after dragging a Chart Item in your template definition by:

Clicking on the “Charts” icon in the tool bar

Double-clicking on the Chart Item – choose “Edit Chart”



Using the Chart Designer Wizard

The Wizard guides you through the creation of the chart in six steps.

Here you can see a reduced overview – please check the iTutor on the Chart Designer to get a detailed introduction.

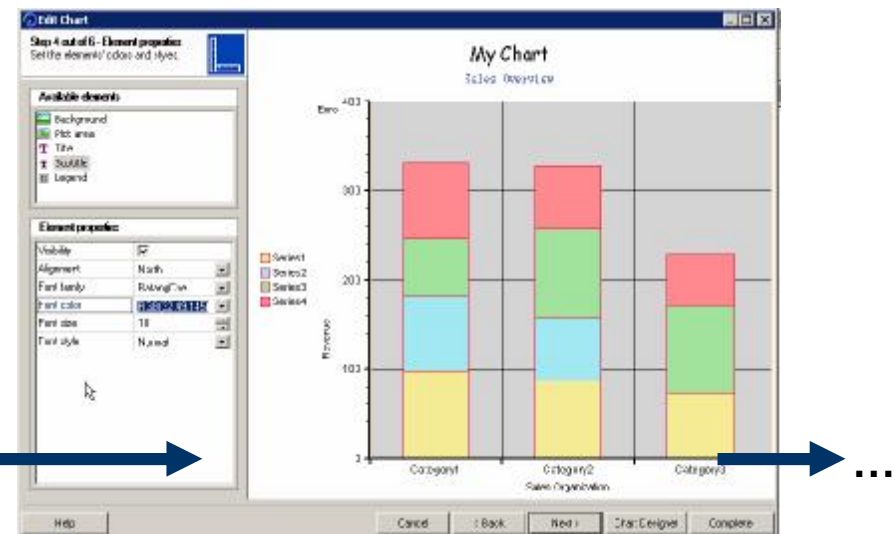
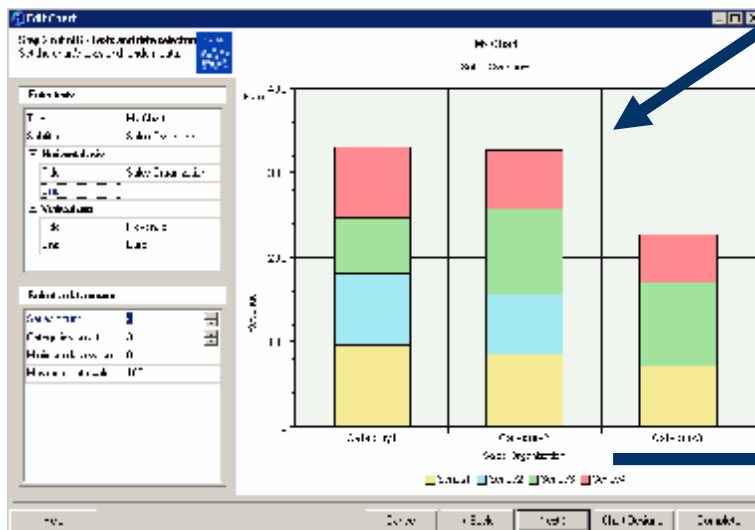
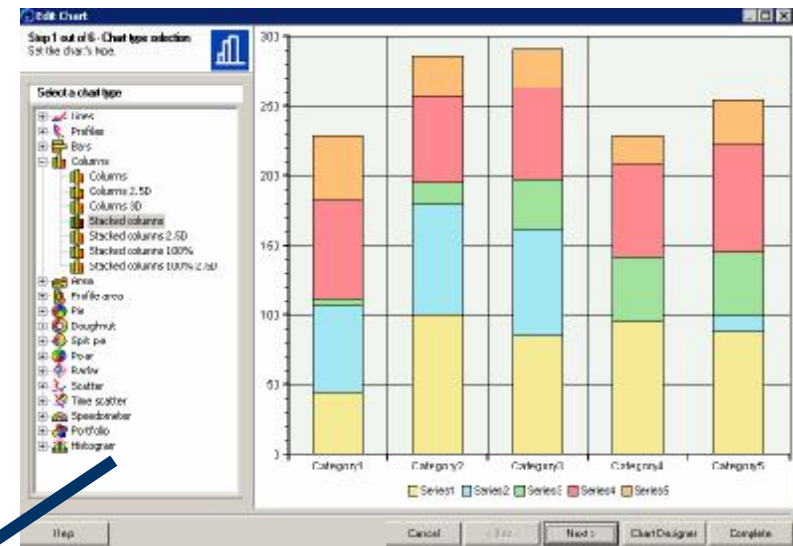


Chart Type Profile Area/Stacked Profile Area

n Up to BW 3.5, the chart type “Area/Stacked Area“ was supported in the Chart Designer. Now it is also possible to show the data in form of a profile area or stacked profile area.

n This chart type corresponds with the profile chart, but the area between axis and data series is filled.

n This allows proportions between several different data series to be visualized, e.g. the different growth rates of your three most important product groups during the last year.

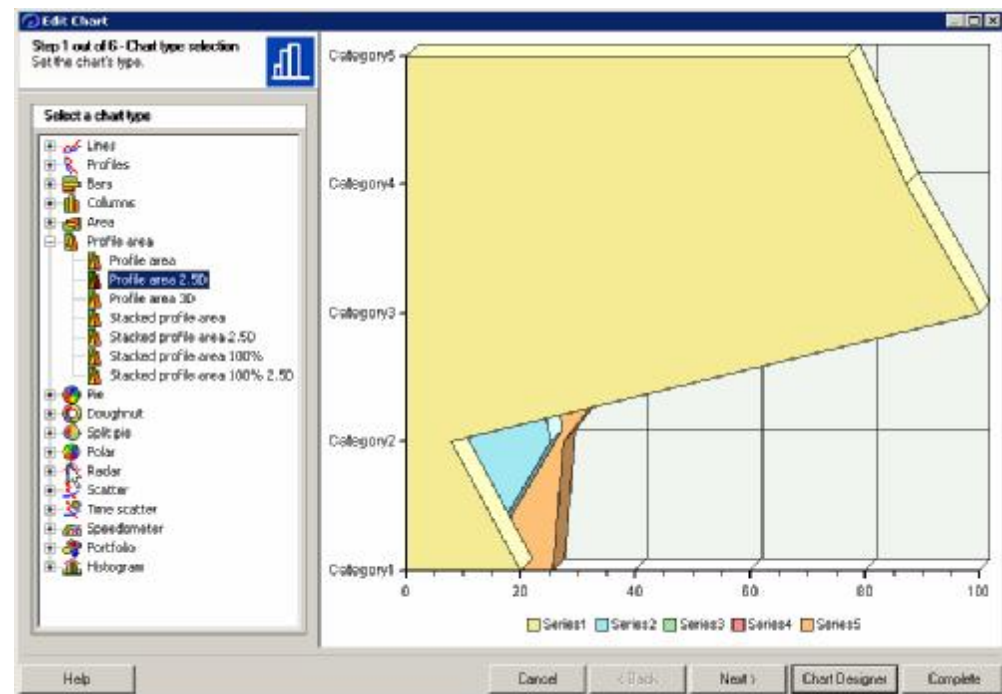


Chart Type Split Pie

The chart type “Split Pie“ completes the range of pie chart types available with the Chart Designer.

Examples:

- Use a Split Pie chart to visualize the revenues of the sales organizations in your company.
- Using different colors in each segment, you can easily visualize the revenue of a sales organization for different time periods.
- The Split Pie chart shows you the proportions of the revenue made by every sales organization at a glance.

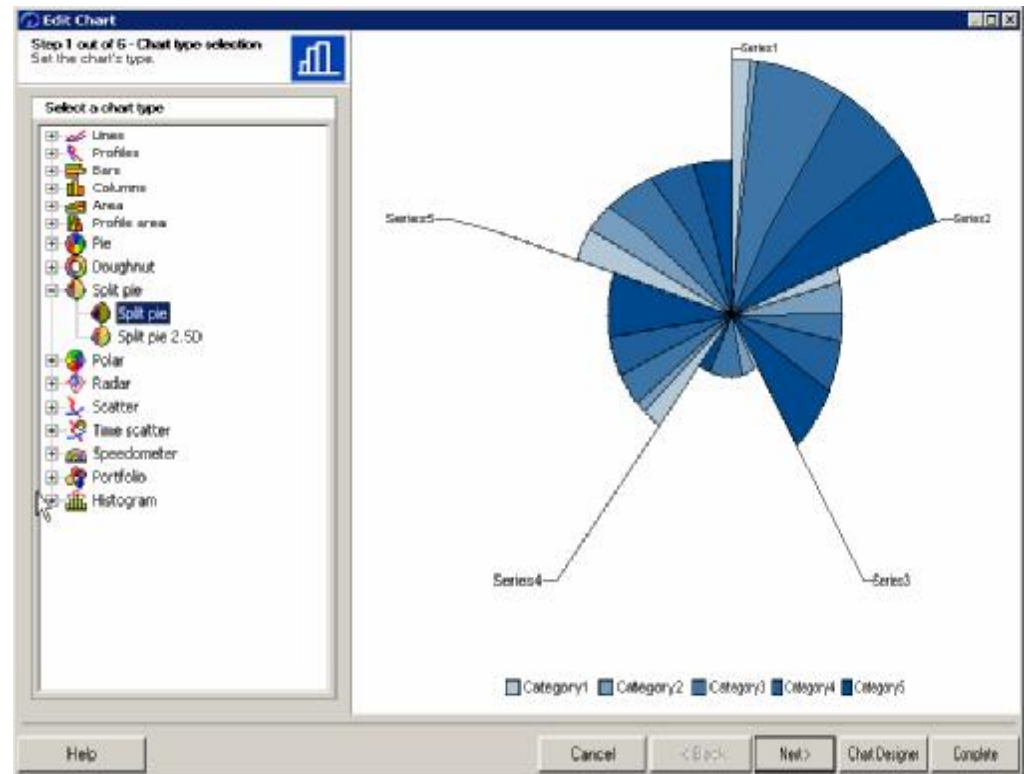


Chart Type Time Scatter

The chart type “Time Scatter“ is similar to the chart type “Scatter“:

- n It allows you to visualize the proportions between numeric values in multiple data series, or the usage of two groups of numeric values for X and Y axis in a diagram.
- n In a time scatter chart, you have the additional option to use time values (hour, minute, second) or date values (year, month, day). You can use up to three different time axes in a time scatter chart.

Example: Create a time scatter chart in order to analyze the quantity of manufactured products in your plant at each hour of a day.

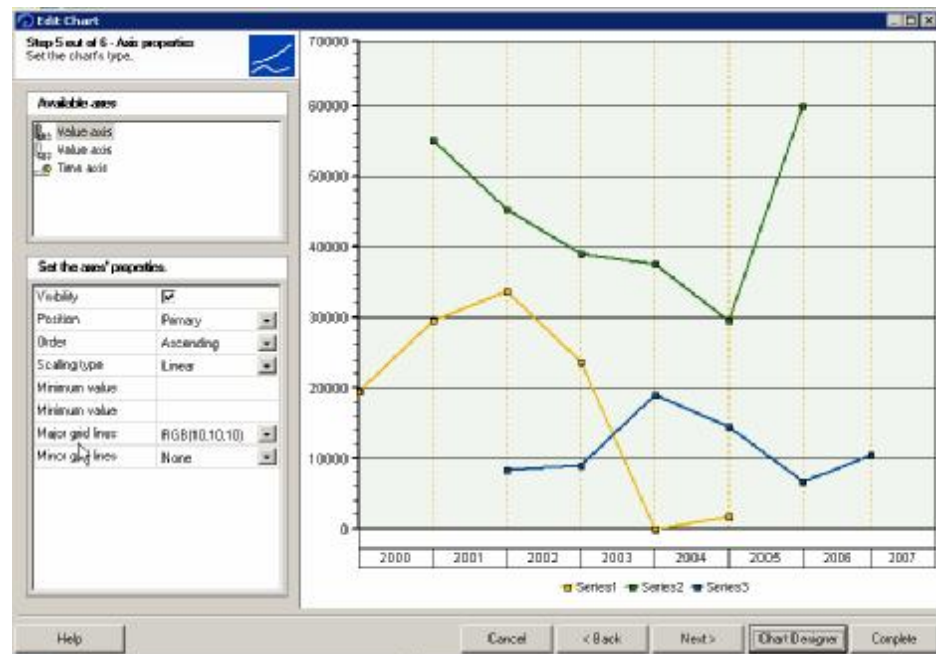


Chart Type Stacked Radar

In addition to the chart type “Radar“ available before, with BW 3.5 you have the option to create a stacked radar chart.

- n Radar charts are intended to compare data series.
- n The data series with the highest values will cover the largest part of the diagram, e.g. the products (data series) with the highest revenue in different countries (categories).

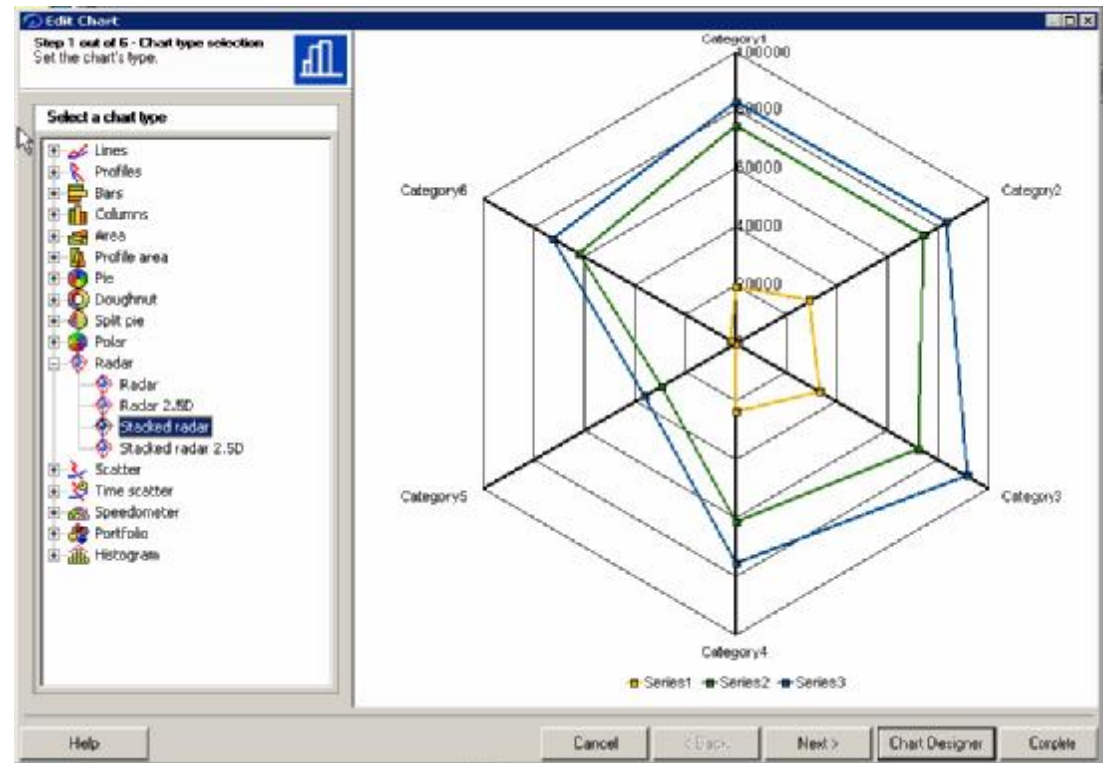


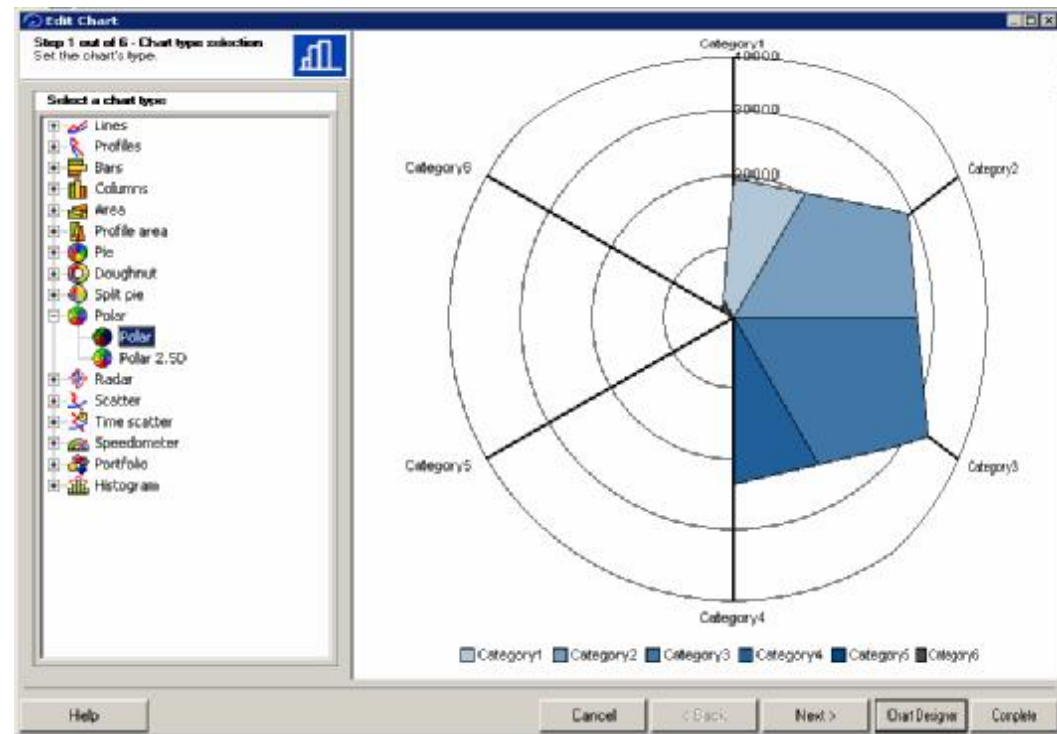
Chart Type Polar

A polar chart behaves like a pie chart. You can define which data series of a query should be displayed in the chart. Therefore the chart type “Polar” offers an additional option to visualize the proportions of characteristic values.

Example:

Use a polar chart to visualize the proportions of the revenues you made in different countries (categories).

The country with the highest revenue will show the largest colored area in the diagram.



Additional Features of the Chart Designer 1

Chart Title

The Chart Title can be positioned at the top, the bottom, the left or the right side of the chart. In addition, Subtitles can be used.

Font Setting

A global property for the font family is available with the new chart designer. This setting is used by all chart elements if their own font family is set to “Automatic”.

Abbreviation of Category Texts

The category axis has an optional mechanism for automatic abbreviation of its texts.

Customizing of Data Series

Every data series without explicit customizing use the default customizing, but can also be customized in a different way.

Legend Entries

The order of legend entries can be switched.

Automatic Coloring

Automatic coloring is used to color the series of a chart differently, e.g. the blocks within a columns chart. Several color palettes can be used for automatic coloring of data series (including a custom-defined color palette). By switching between these palettes you can easily change all colors.

Transparency Color

Any color used in a chart can be shown as a transparent color.

Agenda

Overview

Chart Designer

New Web Items

BEx Web Analyzer

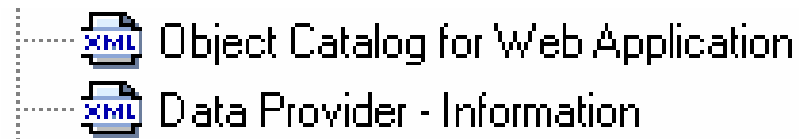
Summary

Web Items

- Table
- Chart
- Dropdown Box
- Radio Button Group
- Checkboxes
- Generic Navigation Block
- Hierarchical Filter Selection
- Filter
- Label
- Text Elements
- List of Exceptions
- List of Conditions
- Alert Monitor
- Role Menu
- Ticker
- Map
- Single Document
- List of Documents
- Object Catalog for Web Application
- Data Provider - Information
- Web Template Name
- Broadcaster
- Query View Selection
- Ad-hoc Query Designer

**New in
BW 3.5**

- Object Catalog for Web Application
- Data Provider - Information
- Web Template Name
- Broadcaster
- Query View Selection



Why XML Items?

Two XML web items are available. They provide access to data and structural information for enhanced custom web templates

- n Empowering client side development**
- n Enabling the use of JavaScript to access the information stored in XML items to provide enhanced customized navigation possibilities to their users**
- n Enabling designers to build custom applications by accessing more information than is contained in the cell contents**
- n Examples:**
 - u For example, via JavaScript a certain cell of the result set could be accessed and used for further processing**
 - u You need a list of available characteristics or the contents of the dynamic filter before you are able to jump from one report into another**

XML Item: Data Provider Information

XML Item: Data Provider - Information

- n Provides access to query and view results
- n Contains the complete navigational state description
 - u Including BW only concepts like exceptions, conditions, “calculate results / details as” etc.
- n Contains the result set with all necessary information
 - u Including the display axis as hierarchy
 - u Uses the BW terminology and BW concepts
 - u No mapping necessary and thus no mapping loss
- n The data that can be displayed consists of both the metadata (a catalog of characteristics (AXIS_INFO) for example) and the displayed values (AXIS_DATA and CELL_DATA).

```
<?xml version="1.0" encoding="iso-8859-1" ?>  
- <asx:abap xmlns:asx="http://www.sap.com/abapxml" version="1.0">  
- <asx:values>  
- <SOURCE>  
+ <AXIS_INFO>  
+ <CELL_DATA>  
+ <AXIS_DATA>  
+ <TXT_SYMBOLS>
```

Output Navigation Status

Output Result Data



Data Provider Information

Component	Description
<u>AXIS_INFO</u>	Metadata description of the characteristics, attributes, and structures on the axes.
<u>AXIS_DATA</u>	Characteristic values, attribute values, and structural components according to the sequence they appear in on the axes.
<u>CELL_DATA</u>	Value cells: The cells are arranged by row first, and then by column.
<u>TXT_SYMBOLS</u>	Text elements for the query

Data Provider Information: Example

XML Export Example

Incoming orders		
Sales organization		Incoming orders value
1512	Frankfurt	15.336.280,19 EUR
1514	Berlin	9.033.592,30 EUR
1516	Munich	25.060.817,81 EUR
1518	Hamburg	6.323.704,49 EUR
1552	London	£ 16.045.569,00
1554	Birmingham	£ 12.419.935,00
1592	Paris	17.744.059,41 EUR
1612	New York	\$ 17.077.175,00
1614	San Francisco	\$ 7.289.978,00
1662	Toronto	33.905.280,00 CAD
1664	Vancouver	15.225.700,00 CAD

**EXPORT (e.g.
Push Button)**

```

<?xml version="1.0" encoding="iso-8859-1" ?>
- <asx:abap xmlns:asx="http://www.sap.com/abapxml" version="1.0">
- <asx:values>
- <SOURCE>
- <AXIS_INFO>
- <item>
  <AXIS>005</AXIS>
  <NCHARS>5</NCHARS>
  <NCOORDS>0</NCOORDS>
- <CHARS>
- <item>
  <CHANM>OD_DIS_CHAN</CHANM>
  <HIENM />
  <VERSION />
  <DATETO>0000-00-00</DATETO>
  <CAPTION>Distribution channel</CAPTION>
  <CHAPRSNT>0</CHAPRSNT>
  <CHATYP>1</CHATYP>
  <ATTRINM />
</item>
  ■ ■ ■
- <item>
  <SYM_TYPE>F</SYM_TYPE>
  <SYM_TIMEDEP />
  <SYM_NAME>FILTER_OD_VTYPE</SYM_NAME>
  <SYM_FS>00</SYM_FS>
  <SYM_BEGIN_GROUP>X</SYM_BEGIN_GROUP>
  <SYM_CAPTION>Value Type</SYM_CAPTION>
  <SYM_VALUE_TYPE>T</SYM_VALUE_TYPE>
  <SYM_VALUE>Actual</SYM_VALUE>
  <SYM_OUTPUTLEN>000006</SYM_OUTPUTLEN>
</item>
</TXT_SYMBOLS>
</SOURCE>
</asx:values>
</asx:abap>
  
```

XML Item: XML Object Catalog

Item: XML Object Catalog

- n Template properties
- n Items and their attributes
- n List of the data providers



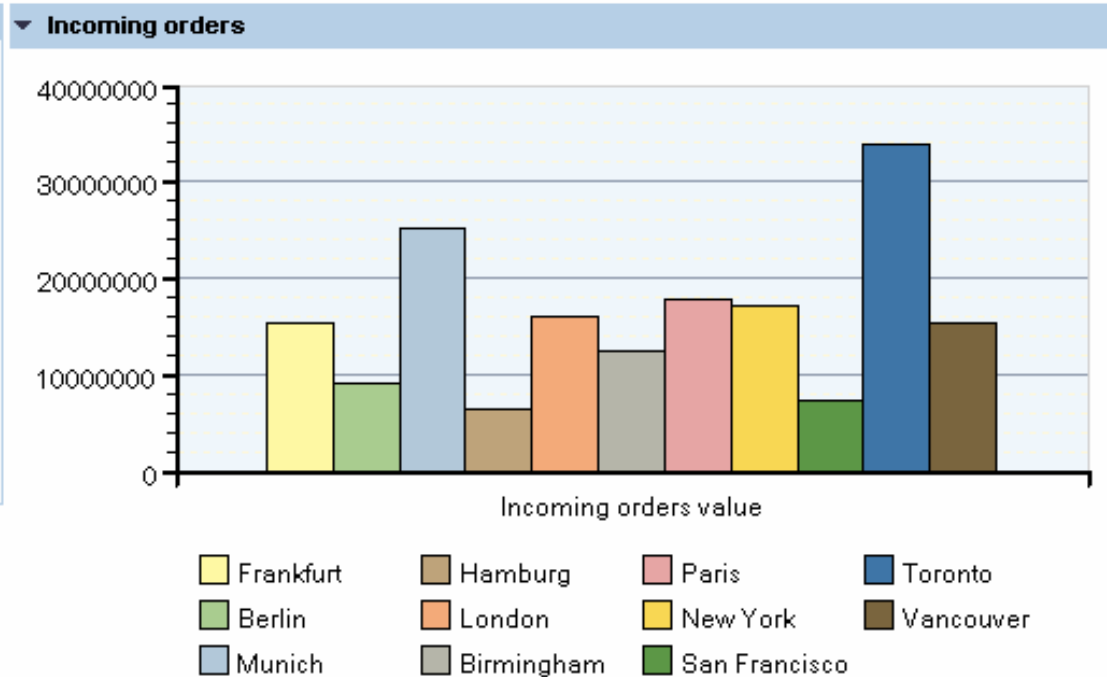
Object Catalog for Web Application

Specific

Output Web Template Properties	<input checked="" type="checkbox"/>
Output List for Data Provider	<input checked="" type="checkbox"/>
Output List of Web Items	<input checked="" type="checkbox"/>

XML Object Catalog: Template Properties

Incoming Orders		
Sales organization	Incoming orders value	
1512	Frankfurt	15.336.280,19 EUR
1514	Berlin	9.033.592,30 EUR
1516	Munich	25.060.817,81 EUR
1518	Hamburg	6.323.704,49 EUR
1552	London	£ 16.045.569,00
1554	Birmingham	£ 12.419.935,00
1592	Paris	17.744.059,41 EUR
1612	New York	\$ 17.077.175,00
1614	San Francisco	\$ 7.289.978,00
1662	Toronto	33.905.280,00 CAD
1664	Vancouver	15.225.700,00 CAD



Template Properties:

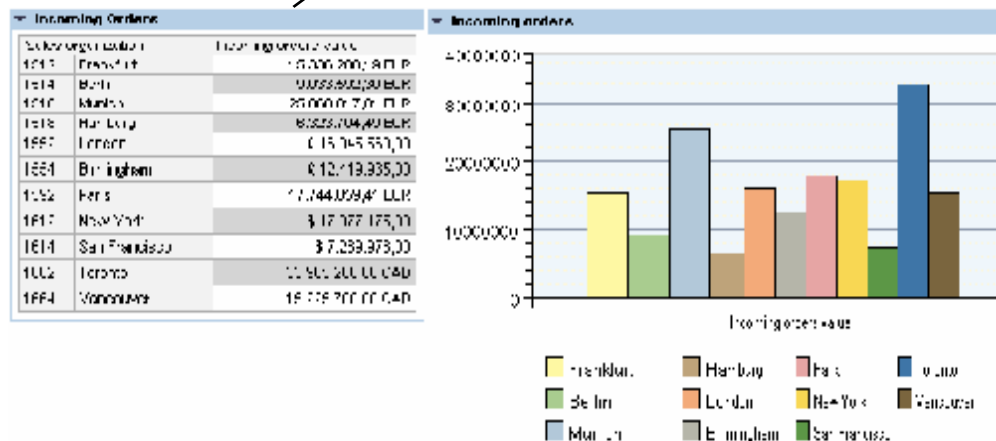
Name	Value
DATA_MODE	NEW
ICON_PREFIX	/sap/bw/Mime/BEx/Icons/
JAVASCRIPT	X
SNIPPET_OPERATIONS	X
STATELESS	
STYLE_SHEET	/sap/bw/Mime/BEx/StyleSheets/BW/Reports.css
SUPPRESS_SYSTEM_MESSAGES	
SUPPRESS_WARNINGS	

Template ID	TK_XML_OBJCAT
Dataprovider 1	DATAPROVIDER_1
Dataprovider 2	DATAPROVIDER_2

XML Object Catalog: Item Parameters

Item Parameters:

Name	Value
ALT_STYLES	X
BLOCK_SIZE	100
BLOCK_SIZE_COLUMNS	0
BLOCK_STEP_SIZE	0
BLOCK_STEP_SIZE_COLUMNS	0
BORDER_STYLE	BORDER
CAPTION	Incoming Orders
CLOSED	
DATA_COLUMN_FROM	1
DATA_COLUMN_TO	0
DATA_PROVIDER_CLASS	CL_RSR_WWWW_VIEW
DATA_ROW_FROM	1
DATA_ROW_TO	0
GENERATE_CAPTION	X
GENERATE_LINKS	X
HIDDEN	
ITEM	TABLE_1
ITEM_CLASS	CL_RSR_WWWW_ITEM_GRID
MODIFY_CLASS	
ONLY_HIERARCHY_NAVIGATION	
SHOW_COLUMN_HEADER	X
SHOW_DATA_CELLS	X
SHOW_PAGING_AREA_BOTTOM	X
SHOW_PAGING_AREA_TOP	
SHOW_ROW_HEADER	X
SUPPRESS_REPETITION_TEXTS	X
WIDTH	300



Reusable templates

n Web Templates can be used as Items

- n No limitations to the nesting of templates
- n Framesets are no longer needed

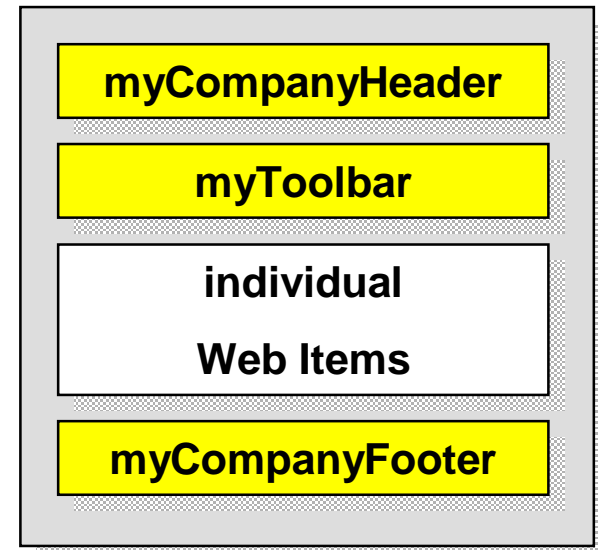
n Usage scenarios

n Headers and footers

- u Dramatic reduction of maintenance costs
- u Easy set-up of cockpit scenarios

n Pattern based approaches

- u Use a template for the general layout of the Web Application
- u Imbedding in another template with customization of the inner objects



Web Template Item: Example



THE BEST-RUN BUSINESSES RUN SAP

Header template

Center Template

Footer template

Tab1 Tab2 Tab3

PM DalSegno Product Groups

Product Group	Product	Net Sales	Billed Quantity	Average Price
Bag & Outdoor	Automatic umbrella	\$ 2.465	199 PC	\$ 12,40 /PC
	Matchesack	\$ 1.775	193 PC	\$ 9,18 /PC
	A4 Writing Case	\$ 2.142	173 PC	\$ 12,39 /PC
	Laptop-Backpack	\$ 1.680	62 PC	\$ 27,12 /PC
	Result	\$ 8.062	627 PC	\$ 12,86 /PC
Accessories	Bottle fastener	\$ 1.556	169 PC	\$ 9,18 /PC
	Candy tin	\$ 2.380	1.725 PC	\$ 1,38 /PC
	CoffeMug	\$ 2.250	982 PC	\$ 2,29 /PC
	Business Card Case	\$ 2.685	586 PC	\$ 4,58 /PC
	Result	\$ 8.871	3.463 PC	\$ 2,56 /PC

Row 1 / 16

Additional Infos

Author	SCHEMER
Last Changed by	SCHEMER
InfoProvider	OD_DX_M01
Query Technical Name	PM_SALES
Query Description	PM DalSegno Company Sales Analysis
Key Date	14.01.2004



Web Template Item: HTML Code

```
New Template1
<HTML>
<object>
  <param name="OWNER" value="SAP_BW"/>
  <param name="CMD" value="SET_DATA_PROVIDER"/>
  <param name="NAME" value="DATAPROVIDER_1"/>
  <param name="DATA_PROVIDER_ID" value="myView"/>
  DATA_PROVIDER:      DATAPROVIDER_1
</object>
<HEAD>
<META NAME="GENERATOR" Content="Microsoft DHTML Editing Control">
<TITLE>BW Web Application</TITLE>
  <link href="/sap/bw/Mime/BEx/StyleSheets/BWReports.css" type="text/css" rel="stylesheet"/>
</HEAD>
<BODY>
<P><object>
  <param name="OWNER" value="SAP_BW"/>
  <param name="CMD" value="GET_ITEM"/>
  <param name="TEMPLATE_ID" value="myHeader"/>
  <param name="ONLY_BODY" value="X"/>
  <param name="NAME" value="Template_1"/>
  <param name="ITEM_CLASS" value="CL_RSR_WWW_ITEM_TEMPLATE"/>
  ITEM:      Template 1
</object></P>
<P><object>
  <param name="OWNER" value="SAP_BW"/>
  <param name="CMD" value="GET_ITEM"/>
  <param name="DATA_PROVIDER" value="DATAPROVIDER_1"/>
  <param name="NAME" value="Grid"/>
  <param name="ITEM_CLASS" value="CL_RSR_WWW_ITEM_GRID"/>
  ITEM:      Template 1
</object></P>
<P><object>
  <param name="OWNER" value="SAP_BW"/>
  <param name="CMD" value="GET_ITEM"/>
  <param name="TEMPLATE_ID" value="myFooter"/>
  <param name="ONLY_BODY" value="X"/>
  <param name="NAME" value="Template_2"/>
  <param name="ITEM_CLASS" value="CL_RSR_WWW_ITEM_TEMPLATE"/>
  ITEM:      Template 1
</object></P>
</BODY>
</HTML>
```

Header template

Footer template



Query View Selection

- n A data view combines a query view (a saved navigation state) together with a certain visualization (e.g. a certain chart type, table, etc.)**
- n All maintained data views of a data provider appear as selectable entries in the dropdown box**
- n If the user changes the data view the associated query view is executed and the resulting data is displayed in the target item using the associated table/chart-type**
- n The user can create his own personalized data views. The user can only delete his own user-defined data views**
- n An administrator can provide Views to an end-user**

Query View Selection Item: Navigation

▼ Dropdown for Views

Distribution Channel & Product Group

▼ DalSegno Company Current Month

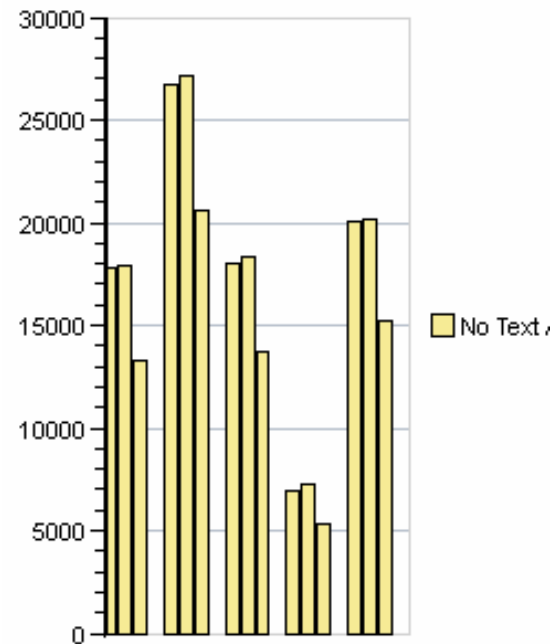
Distribution Channel	Product Group	
EDI	Accessories	\$ 17.793
	Bag & Outdoor	\$ 17.910
	Office	\$ 13.287
	Not assigned	
	Result	\$ 48.990
Fax	Accessories	\$ 26.706
	Bag & Outdoor	\$ 27.154
	Office	\$ 20.637
	Not assigned	
	Result	\$ 74.497
Internet	Accessories	\$ 18.015
	Bag & Outdoor	\$ 18.376
	Office	\$ 13.677
	Not assigned	
	Result	\$ 50.068

▼ Dropdown for Views

Distribution Channel & Product Group
 Distribution Channel & Product Group
 Distribution Channels: EDI
Product Group Chart
 View 2

▼ Dropdown for Views

Product Group Chart



Query View Selection Item: Saving Views

Dropdown for Views

Distribution Channel & Product Group



Save View

Description: Lost Sales
 Technical Name: pm_lost_sales

Overwrite Existing View

Save View

DalSegno Company Current Month

Distribution Channel	Reason for Lost Deals	
Internet	Delivery Time	
	Prices	
	Service	
	Not assigned	\$ 50.068
	Result	\$ 50.068
Phone	Delivery Time	
	Prices	
	Service	
	Not assigned	\$ 55.472
	Result	\$ 55.472
Overall Result		\$ 105.540

Data Analysis | Graphical display | Information | Query Design | Information Broadcasting

DalSegno Company Current Month Data Timeliness: 11

Bookmark | Variable Screen | Exceptions and Conditions | Notes | Export to Excel | Export to CSV

Rows

- Distribution Channel
- Internet, Phone
- Reason for Lost Deals

Columns

Free Characteristics

- Industry Sector DB SIC
- Product
- Product Group
- Key Figures
- Net Sales

Distribution Channel	Reason for Lost Deals	
Internet	Delivery Time	
	Prices	
	Service	
	Not assigned	\$ 50.068
	Result	\$ 50.068
Phone	Delivery Time	
	Prices	
	Service	
	Not assigned	\$ 55.472
	Result	\$ 55.472
Overall Result		\$ 105.540

Dropdown for Views

- Distribution Channel & Product Group
- Distribution Channel & Product Group
- Distribution Channels: EDI
- Lost Sales**
- Product Group Chart
- View 2



Broadcaster Item

In addition, the BEx Broadcaster is available as a new web item in the Web Application Designer.

Broadcaster

Settings Web Template | Settings Query | Settings Workbook | Overview of Scheduled Settings

Description	Technical Name	Owner	Last Changed On/By	Scheduled
No Settings Available for Query Sales Analysis Q1 2004 (BN_WEB_ANALYZER_Q1)				

Create New Setting Create New Settings with the Wizard

Settings New setting

Description: New setting

Distribution Type: Send as E-Mail Output Format: Independent HTML File As ZIP File

Recipients | Texts | Filter Navigation

User: [] []

User in Role: [] []

E-Mail Addresses: barbara.neumann@sap.com [] []

Authorizations User: NEUMANNBA []

Language: English

User-specific:

Save Save as Check Schedule Execute Close

Web Application Designer - [Broadcaster]

Web Items

- Standard Items
- Table
- Chart
- Dropdown Box
- Radio Button Group
- Checkboxes
- Generic Navigation E
- Hierarchical Filter Set
- Filter
- Label

Properties: Broadcaster

Generic | Web Item

Name: BROADCASTER

Description: Broadcaster

StyleSheet: BW/Repods.css

Agenda

Overview

Chart Designer

New Web Items

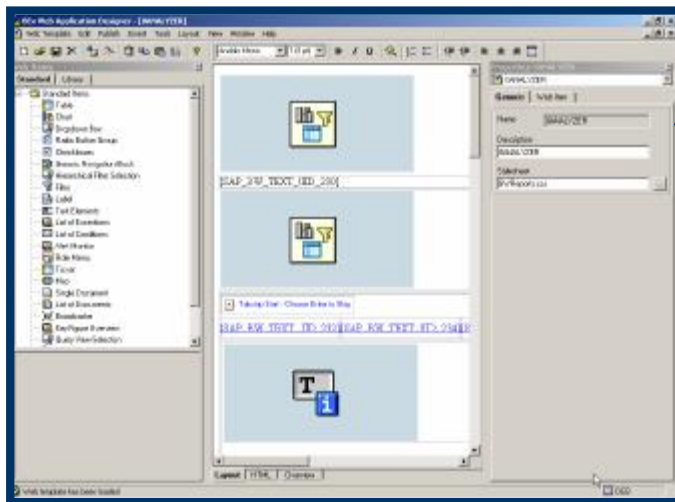
BEx Web Analyzer

Summary

BEx Web Analyzer – Complete Analysis via the Web

Bex Web Analyzer

- Provides easy and user specific access to BW queries and views via a web browser
- Single point of entry for end users
- Enhanced “look & feel” as well as web query interaction based on usability analysis
- Can be launched via the web template “0ANALYZER”



Name	Company	Country	Sales Value	Result
...	422
...	722
...	1 814	...
...	1 822
...	2 762
...	1 767	...
...	4 112
...	1 276	...
...	3 398
...	302
...	1 457	...
...	262
...	1 767	...
...	1 204

Analysis with the Web Analyzer

Open Queries and Views for Analysis, save Views, start the Query Designer on the Web via Links

Additional Functions available via Buttons

▼ Rows			
Country			
Sold-to party			
▼ Columns			
Key Figures			
▼ Free Characteristics			
Cal. year / month			
Distribution channel			
Material			

BEx Web Analyzer

[Open Query](#)
[Open View](#)
[Save View](#)
[Query Designer](#)

Data Analysis | Graphical display | Information | Information Broadcasting

Sales Alert Monitor Validity of Data: 31.08.2004 11:35:58

[Bookmark](#)
[Variable Screen](#)
[Exceptions and Conditions](#)
[Notes](#)
[Export to Excel](#)
[Export to CSV](#)

Country	Sold-to party	Sales Volume
Germany	Becker AG	426,000
	Carbor GmbH	720,000
	Lampen-Markt GmbH	1.014,000
	Result	2.160,000
France	DelBont Industries	2.352,000
	Minerva Industries	1.766,000
	Result	4.118,000
England	Adecom SA	1.222,000
	COMPU Tech. AG	1.336,000
	Computer 3000	900,000
	Result	3.458,000
USA	Booktree Inc.	1.268,000
	Result	1.268,000
Overall Result		11.004,000

New Navigation Block!

Information on Different Tabs

BEx Web Analyzer

Open Query | Open View | Save View | Query Designer

Data Analysis | Graphical display | **Information** | Information Broadcasting

BEx Web Analyzer

Open Query | Open View | Save View | Query Designer

Data Analysis | Graphical display | **Information** | Information Broadcasting

Sales Alert Monitor

Validity of Data: 31.08.2007 11:36:55

Settings Web Template | Settings Query | Settings Workbook | Overview of Scheduled Settings

Description	Technical Name	Owner	Last Changed On/By	Scheduled
Info Settings Available for Query Sales Alert Monitor (PM_SALES_ALERTS)				

[Create New Setting](#) | [Create New Settings with the Wizard](#) | [Documentation](#)

BEx Web Analyzer

Open Query | Open View | Save View

Data Analysis | Graphical display | **Information** | Information Broadcasting

Sales Alert Monitor

Query Documentation

Information on Query

Key Date	10.09.2004
Status of Data	31.08.2004 11:35:58
Changed At	25.03.2002 16:19:48
Last Changed by	SCHEMER
Last Refreshed	10.09.2004 17:46:51
Query Description	Sales Alert Monitor
Query Technical Name	PM_SALES_ALERTS

Sold-to party: Star Supermarkets, Minerva Industries, Lampen-Markt GmbH, DelBont Industries, Computer 3000, COMPU Tech. AG, Carbor GmbH...

Dynamic Filter

Variable Values

Demo



Agenda

Overview

Chart Designer

New Web Items

BEx Web Analyzer

Summary

You should now be able to:

- n **Create charts using the new Chart Designer Wizard and Chart Designer available with the BEx Web Application Designer in SAP BW 3.5**
- n **Make use of the following new web items: the XML items, the Web Template item, and the Query View Selection item**
- n **Do analyses using the BEx Web Analyzer**

Questions?

Q&A

Further Information

è Public Web:

www.sap.com/solutions/netweaver/businessintelligence

SAP Developer Network: www.sdn.sap.com è Business Information Warehouse

SAP Customer Services Network: www.sap.com/services/

è Related SAP Education Training Opportunities

<http://www.sap.com/usa/education/>

BW305 - Business Information Warehouse - Reporting & Analysis

WNABW7 - Advanced BW Reporting

(Both courses are related to BW 3.0B/3.1 Content.)

Copyright 2004 SAP AG. All Rights Reserved

- n No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.
- n Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.
- n Microsoft, Windows, Outlook, and PowerPoint are registered trademarks of Microsoft Corporation.
- n IBM, DB2, DB2 Universal Database, OS/2, Parallel Sysplex, MVS/ESA, AIX, S/390, AS/400, OS/390, OS/400, iSeries, pSeries, xSeries, zSeries, z/OS, AFP, Intelligent Miner, WebSphere, Netfinity, Tivoli, and Informix are trademarks or registered trademarks of IBM Corporation in the United States and/or other countries.
- n Oracle is a registered trademark of Oracle Corporation.
- n UNIX, X/Open, OSF/1, and Motif are registered trademarks of the Open Group.
- n Citrix, ICA, Program Neighborhood, MetaFrame, WinFrame, VideoFrame, and MultiWin are trademarks or registered trademarks of Citrix Systems, Inc.
- n HTML, XML, XHTML and W3C are trademarks or registered trademarks of W3C®, World Wide Web Consortium, Massachusetts Institute of Technology.
- n Java is a registered trademark of Sun Microsystems, Inc.
- n JavaScript is a registered trademark of Sun Microsystems, Inc., used under license for technology invented and implemented by Netscape.
- n MaxDB is a trademark of MySQL AB, Sweden.
- n SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.
- n These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

