rittmanmead
DELIVERED INTELLIGENCE

Oracle Business Intelligence Masterclass

Enhancements to Oracle BI Publisher 11g

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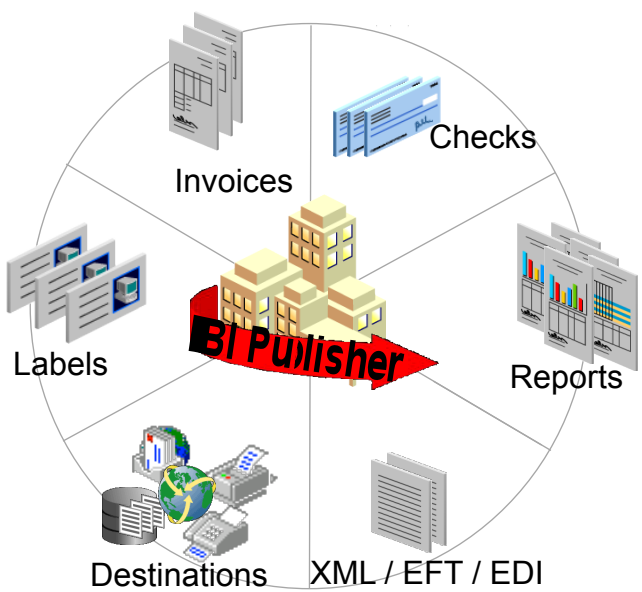
Agenda

- What is Oracle BI Publisher?
- BI Publisher and Oracle Business Intelligence
- What's New In Oracle BI Publisher 11g?
- Upgrading 10g Reports and Templates to 11g
- The 11g Data Modeller In-Depth
- The 11g Online Layout Editor In-Depth
- The 11g Online Analyzer In-Depth
- Bursting and Report Distribution
- Administering the BI Publisher 11g Environment
- Summary

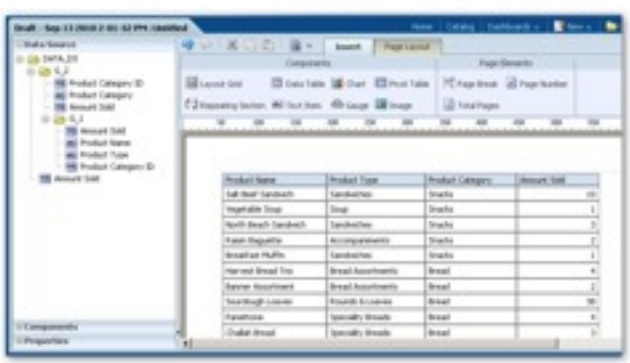
What is Oracle BI Publisher?

- BI Publisher is used for creating print-quality, report documents that are distributed to a set of users
- Can combine relational, file, XML, HTTP and Web Service data sources
- “Pixel-Perfect” report layout combining data, images, charts etc
- High-performance report generation and distribution engine
- Separation of report definition, data model and template supports re-usability
- Language translation and support for OCR/EFT/EDI
- Part of Oracle Fusion Middleware available standalone or embedded



BI Publisher vs. Oracle Answers and Oracle Discoverer

- BI Publisher is aimed at published reports
  - Limited interactivity with data
  - Limited ability for end-user to customize and amend report
- Reports directly against data, or through OBIEE or Discoverer metadata layer
  - Does not have its own metadata
- "Sweet-spot" is distribution of printed or published reports to wide audience
- Where absolute control is required over layout, report design etc
- Can be used to "publish" data from OBIEE or Discoverer systems



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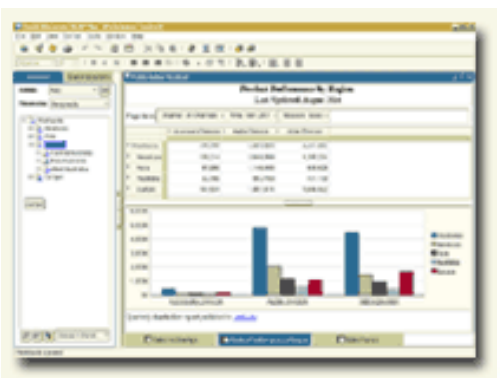

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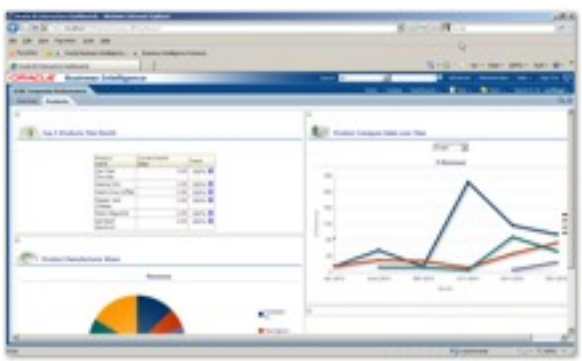
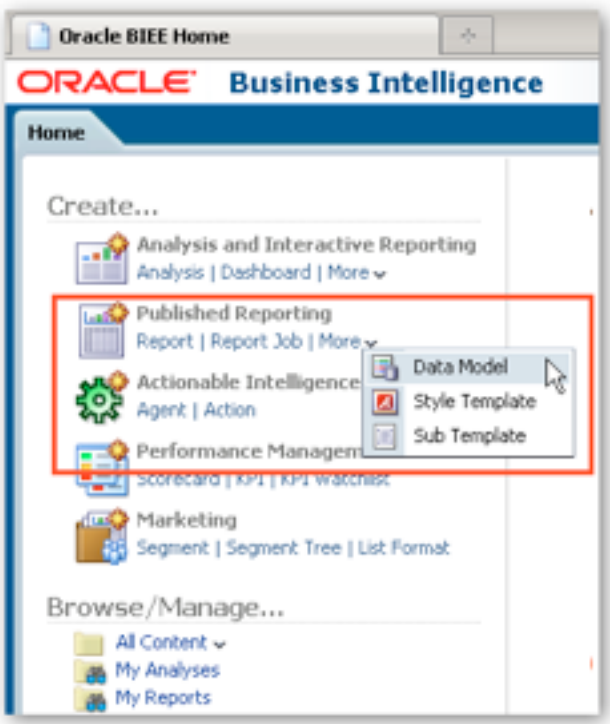


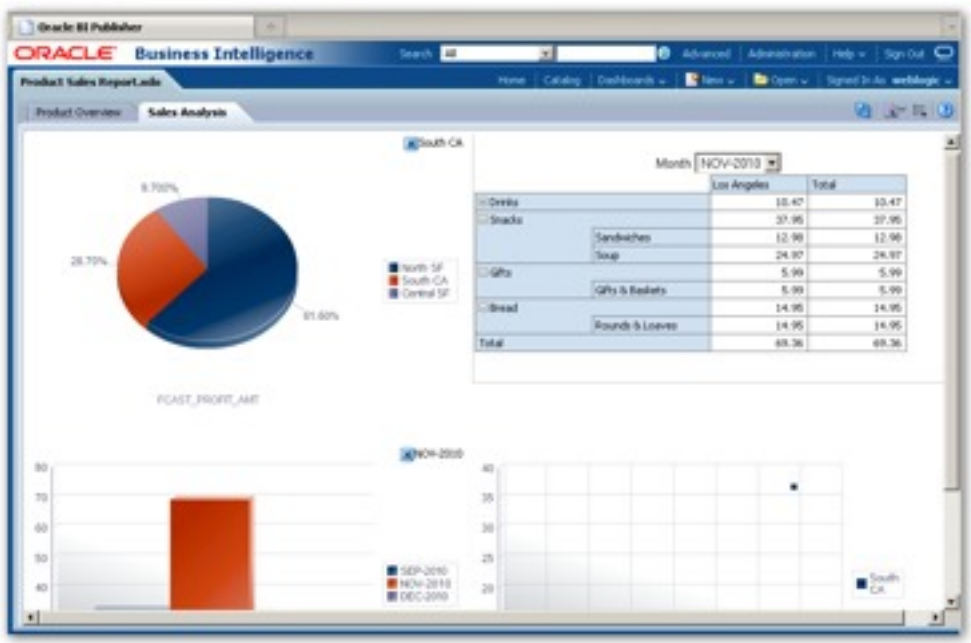
BI Publisher and Oracle Business Intelligence

- Oracle BI Publisher can either be installed standalone, or as part of OBIEE
  - Both install types use the RCU and Universal Installer
  - Both store BI Publisher scheduler tables in BIPLATFORM schema
- Installing BIP as part of OBIEE automatically configures security, web catalog integration, passing of credentials
- If BIP is initially installed standalone, it can be configured for integration post-install
- BIP is also delivered embedded in EBS, PSFT, Discoverer 10g/11g and other applications



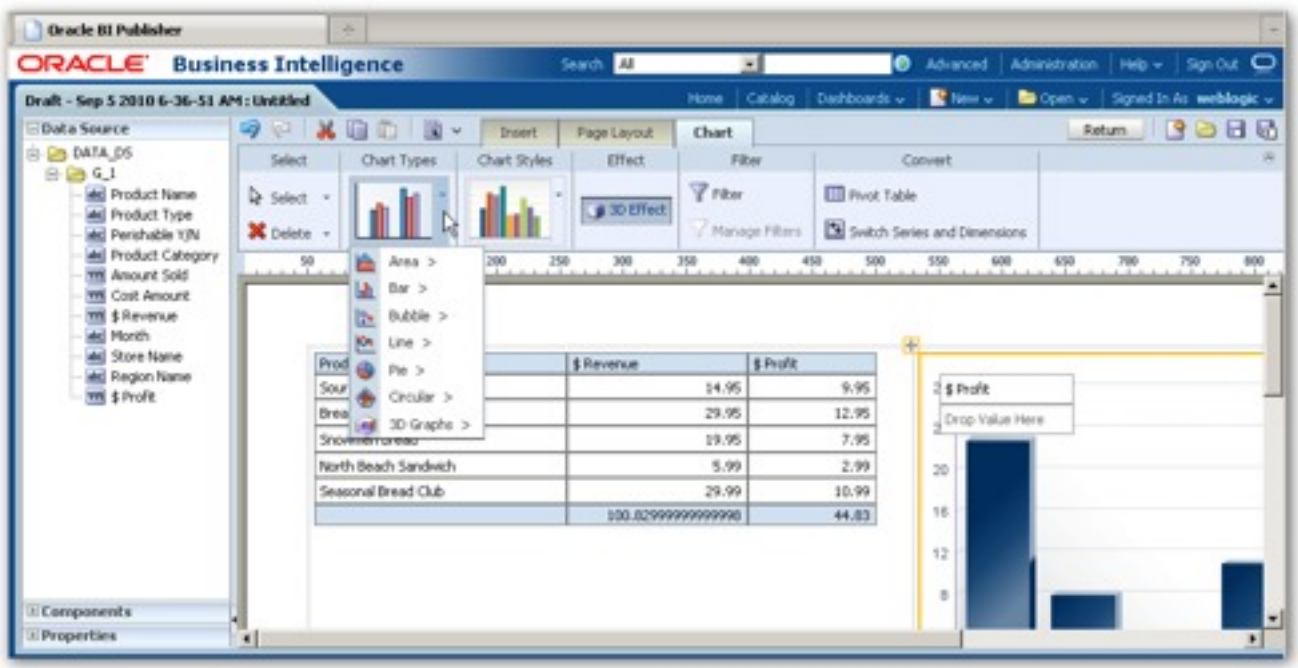
What's New in Oracle BI Publisher 11g?

- The 11g Release of Oracle BI Publisher comes with many new features
  - Available now, currently at version 11.1.1.3
- Web-Based Online Layout Editor
- Web-Based Interactive Viewer
- New Data Model Editor
- Style Templates and Sub-Templates
- Closer Integration with OBIEE
- New Report Storage and Document Types



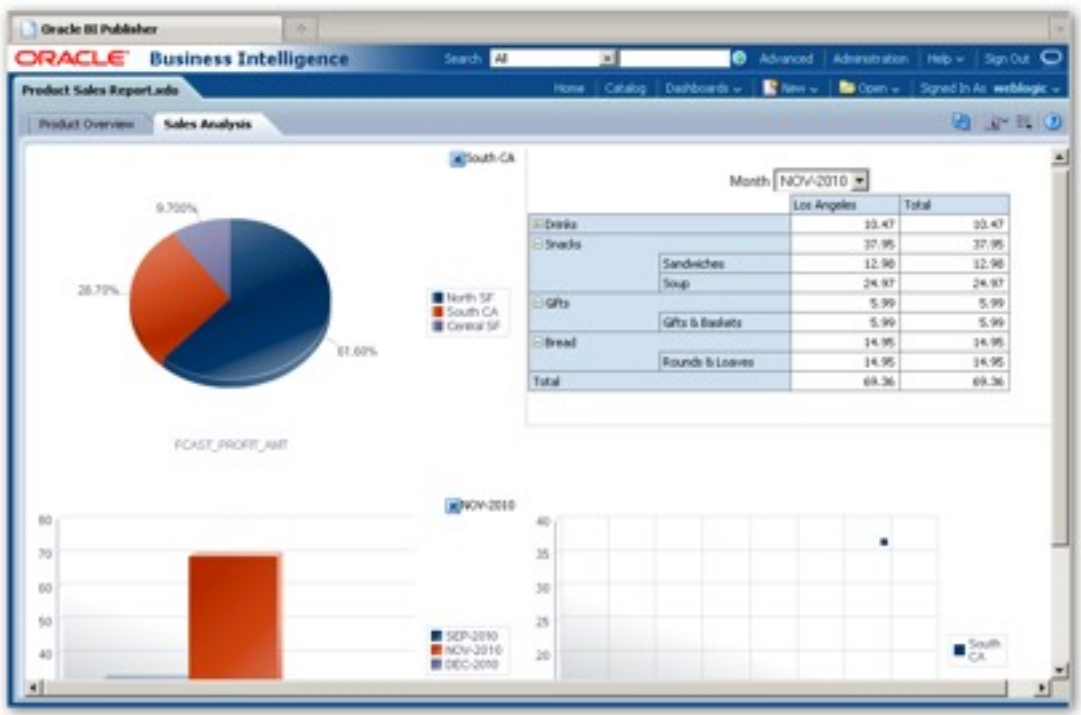
Online Layout Editor

- Report templates can now be defined online
  - RTF templates still available (no conversion ability to XPT yet)
- Ability to add charts, tables, crosstabs, gauges and other items
- No dependency on MS Word or offline tools



BI Publisher Interactive Viewer

- Web capabilities of BI Publisher significantly enhanced in 11g
- Interactive Viewer allows manipulation, drilling, filtering of data
- Event framework allows “wiring together” of charts, reports for filtering



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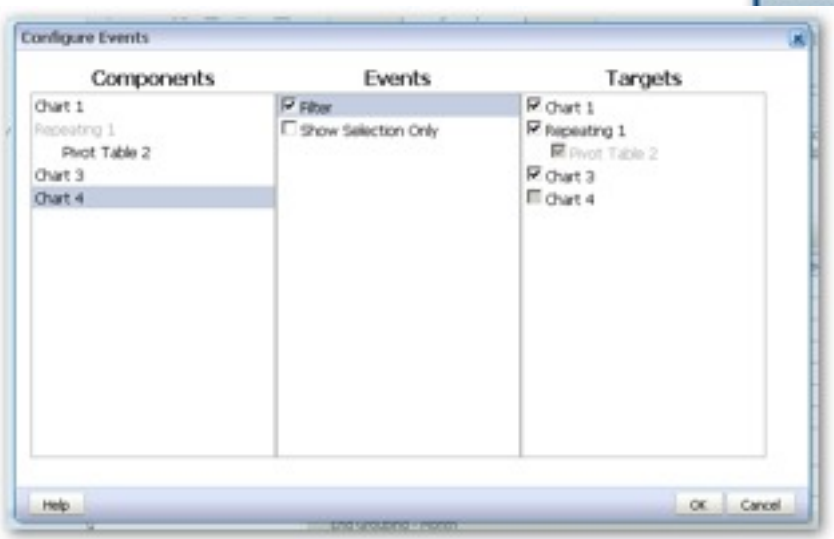
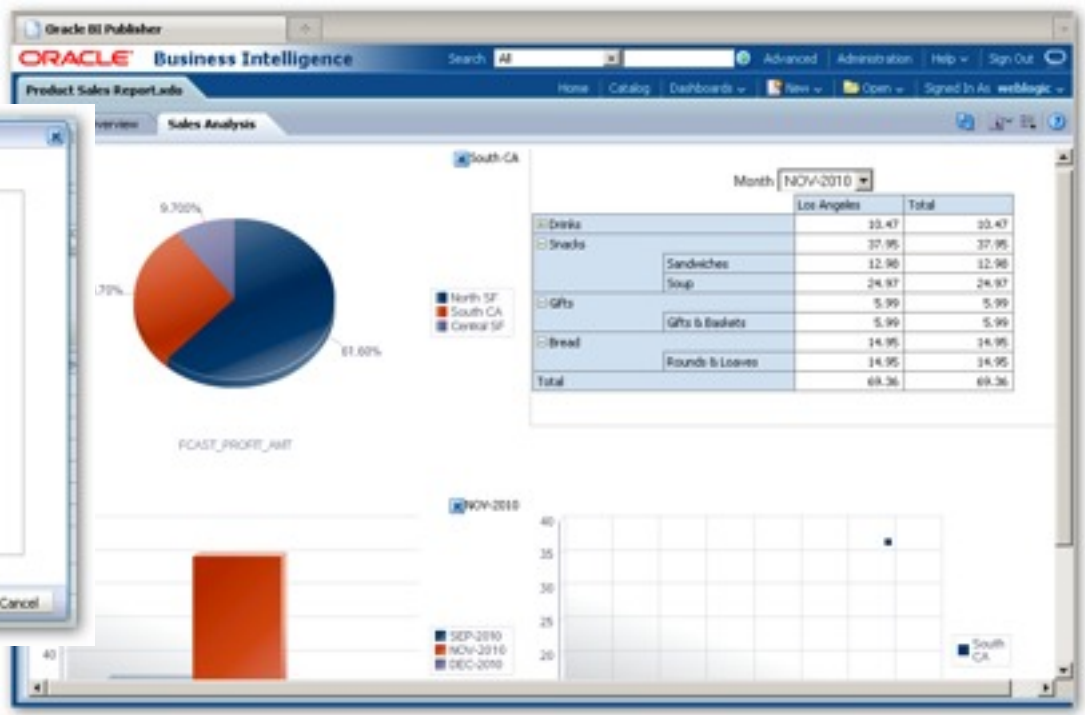
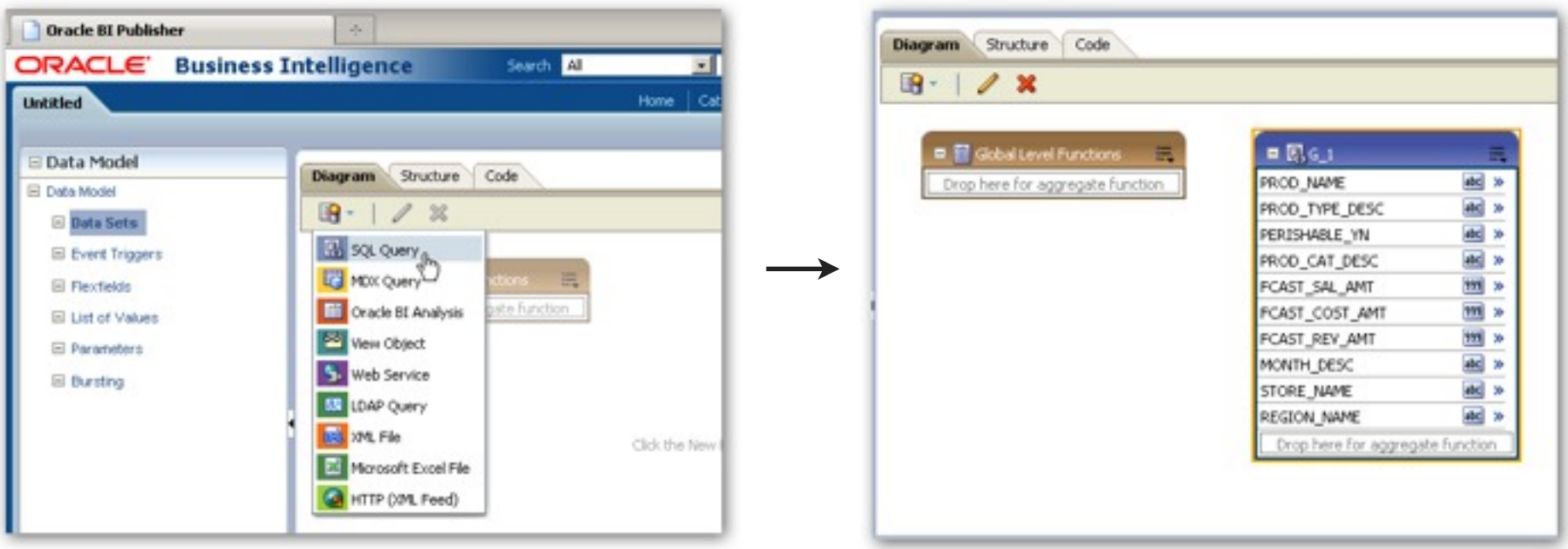




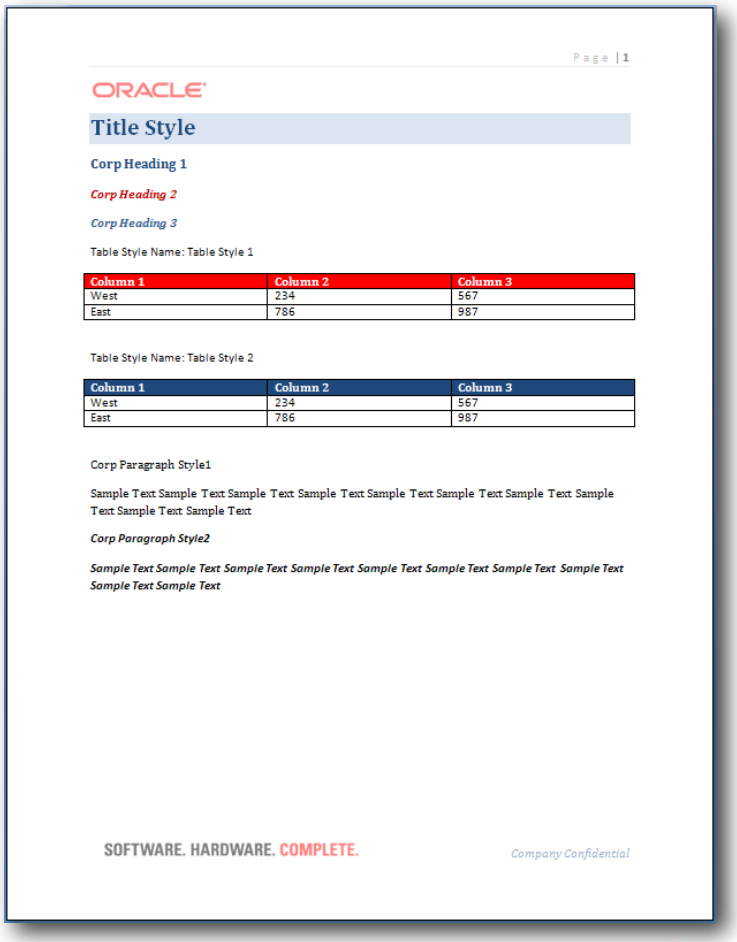
Updated Data Model Editor

- Data Models now exist separately from report definitions
  - Makes models re-usable across reports
- Visual editor for combining datasets across sources
- Report against SQL, OBIEE, XML, XLS, Web Services etc



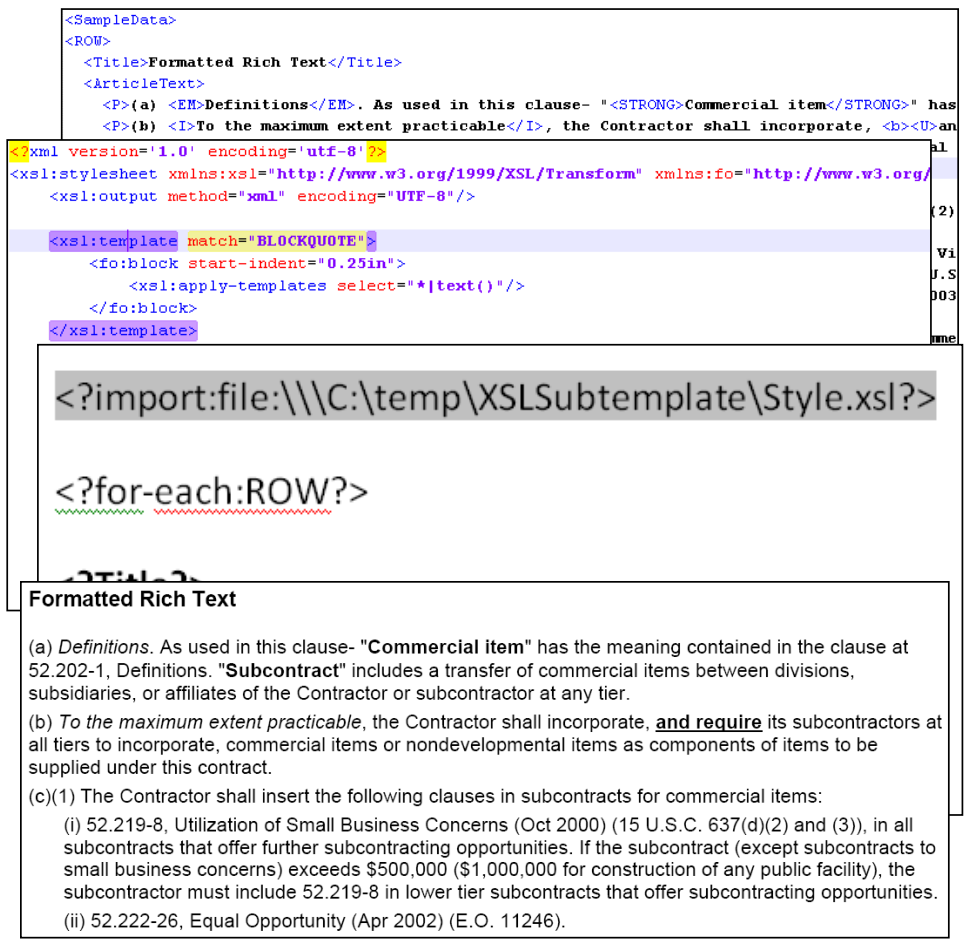
Style Templates

- Style Templates contain style information to be applied to RTF templates
  - Defines styles of layout objects for RTF template
  - Applied to RTF Template output at run-time, used to give consistent output
- Supported styles
  - Table
  - Paragraph
  - Header/Footer



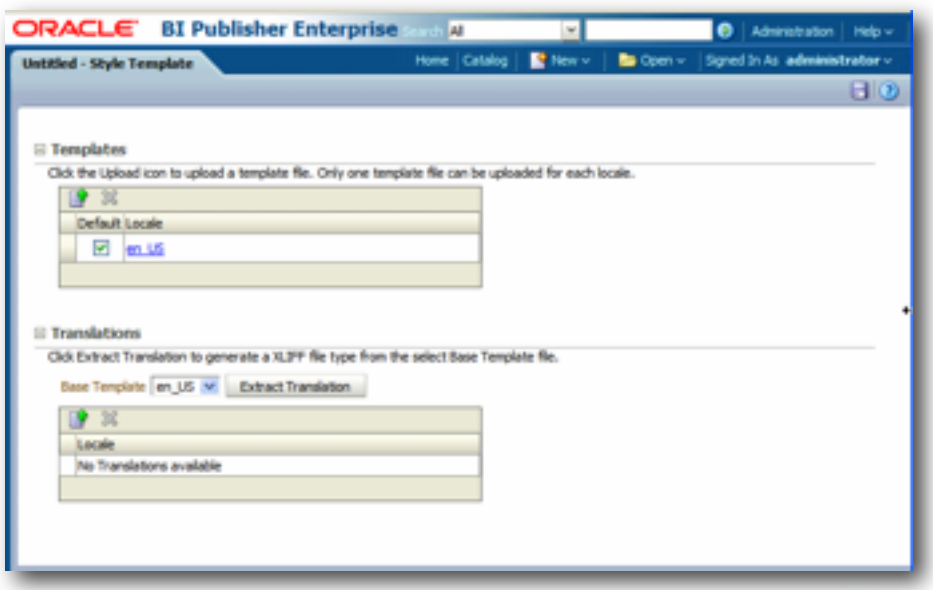
Sub Templates

- Sub Template defines shared functions for RTF templates
- XSL or RTF
- Examples:
  - Rich text
  - Custom formatting
  - Custom Calculation



Style Templates and Sub Templates

- Applies to RTF templates only
- Style Templates contain style information to be applied to RTF templates
  - Applied to RTF Template output at run-time, used to give consistent output
- Sub-Templates support modularity of RTF templates
  - Now stored alongside RTF templates in catalog (in 10g, stored externally)

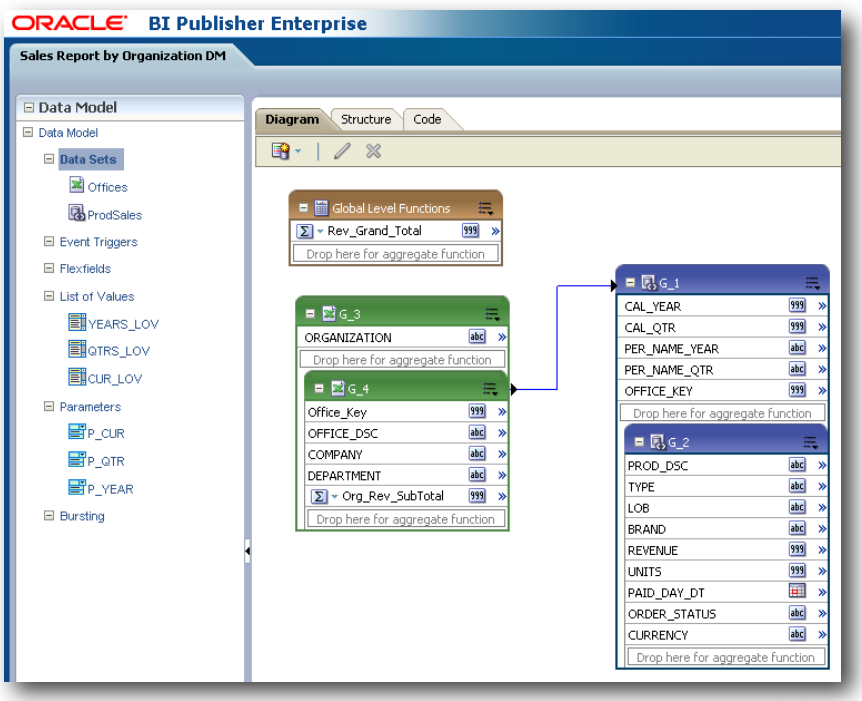


Updated Report Document Storage

- BI Publisher 11g seperates data models from report definitions
  - Supports re-usability of data models between reports
  - Data model now stored in catalog with **.xdm** filetype
- Templates built with the Online Template Builder are stored with **.xpt** filetype
  - Not interoperable with RTF templates
  - No migration utility yet between **.rtf** and **.xpt** templates
  - **.xpt** templates required for Interactive Viewer
- Upgrade Assistant converts existing BIP 10g repositories to 11g format, but keeps existing RTF templates (but splits **.xdo** into **.xdo+.xdm** files)

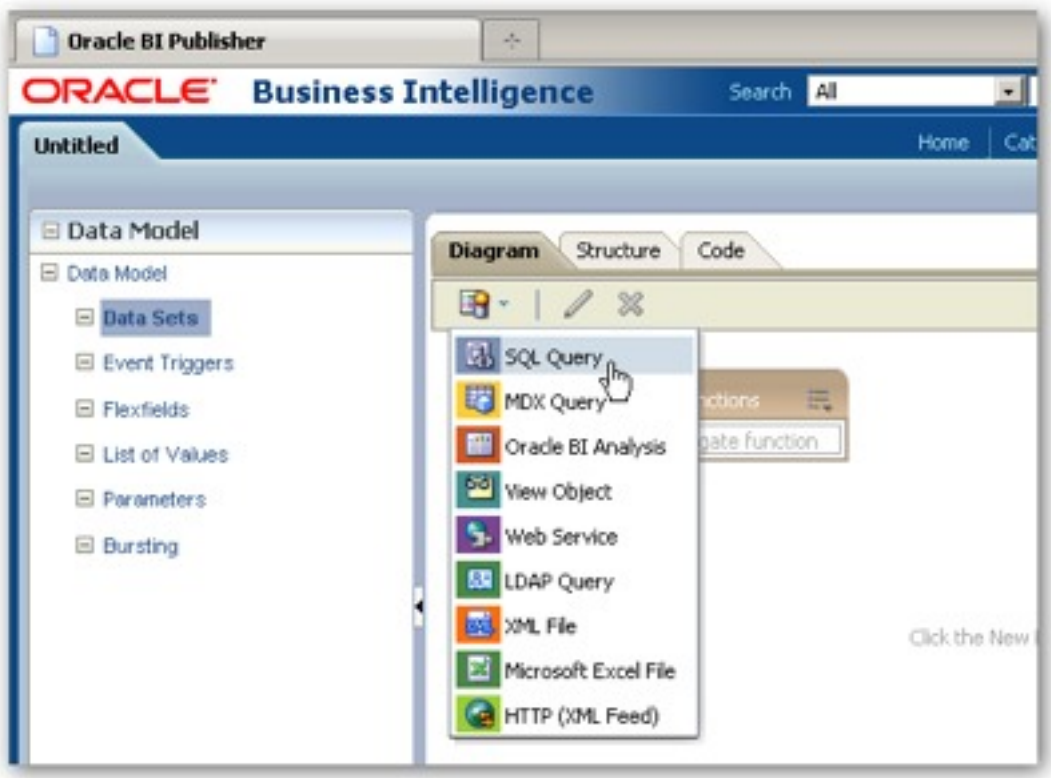
The New Data Modeller In-Depth

- Data Modeler is used to create **data sets**, queries against a single source
- Data sets can be combined to create an single integrated set of data
  - In previous releases, this required hand-edited data templates
- Superset of **parameters** can be defined across all data sets, and individually selected for each report
- Also define **event triggers**, **flexfields**, **report bursting** and **LOV**s
- Data model stored in the catalog as an **.xdm** file, reusable across reports



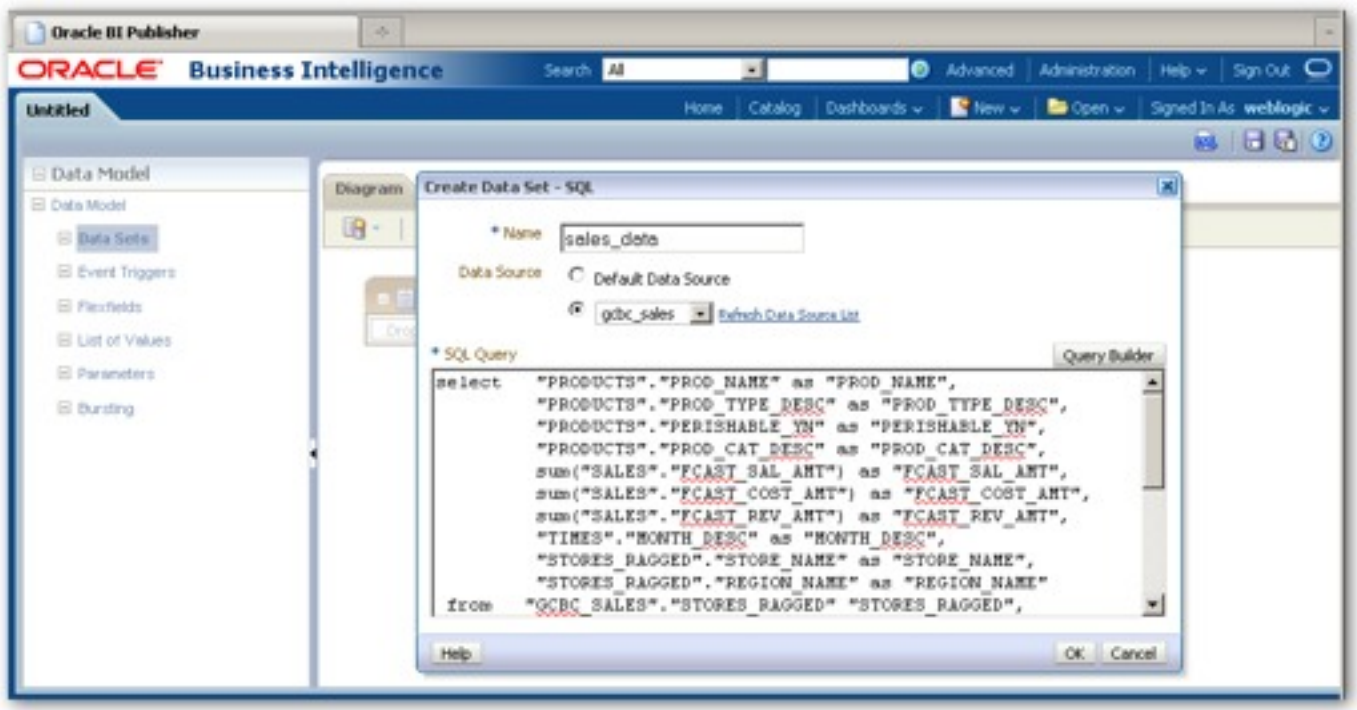
Creating a Data Model Step 1 : Select Source

- Select **New** > **Data Model** from common header area
- When Data Model Editor is displayed, select **Diagram** > **New Data Set**
- Full range of BIP 10g data sources
  - SQL (Direct, and through OBIEE)
  - MDX
  - Oracle BI Answers
  - Web Service
  - HTTP
  - XML
- New for BIP 11g
  - ADF View Object
  - MS Excel Native
  - LDAP



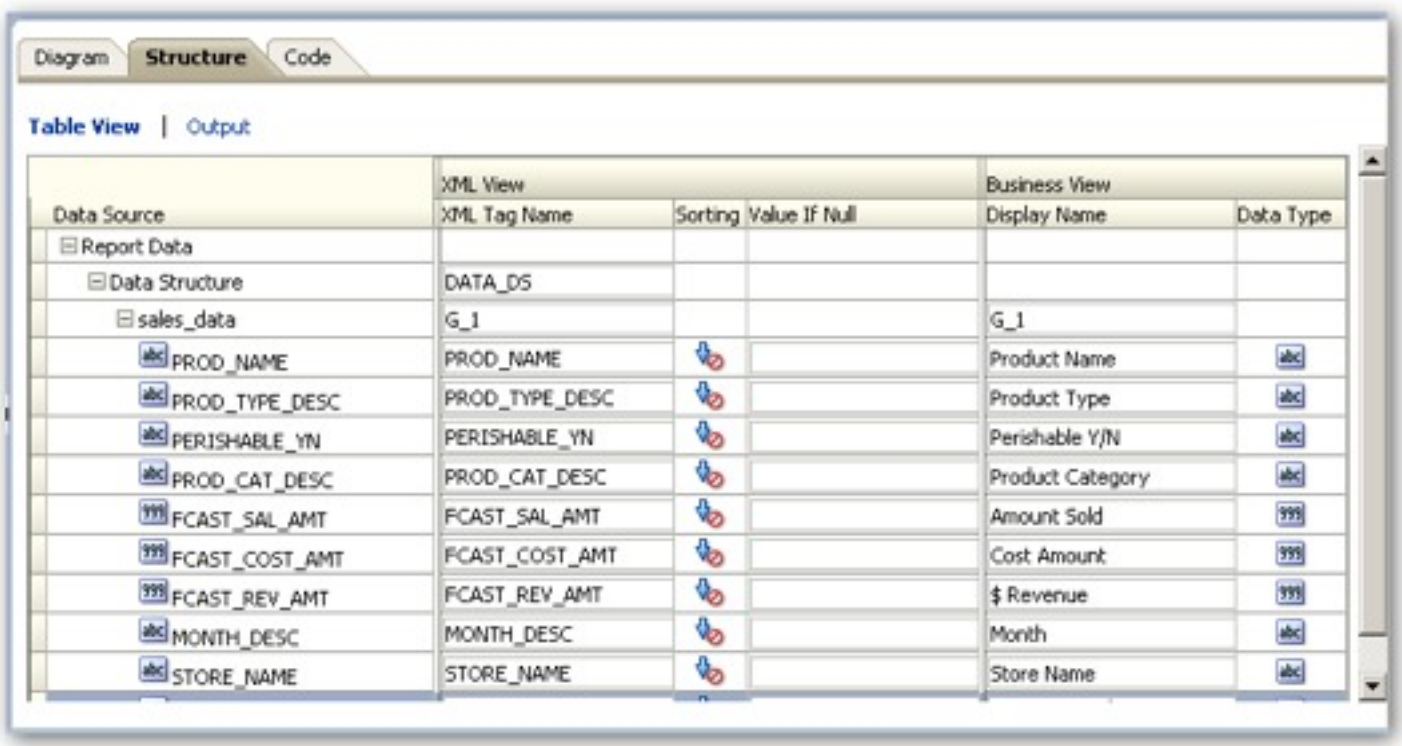
Creating a Data Model Step 2 : Create Query

- Using **Create Data Set** dialog, enter query text
- Select either default or specific data source
- For SQL queries, can use visual **Query Builder** UI



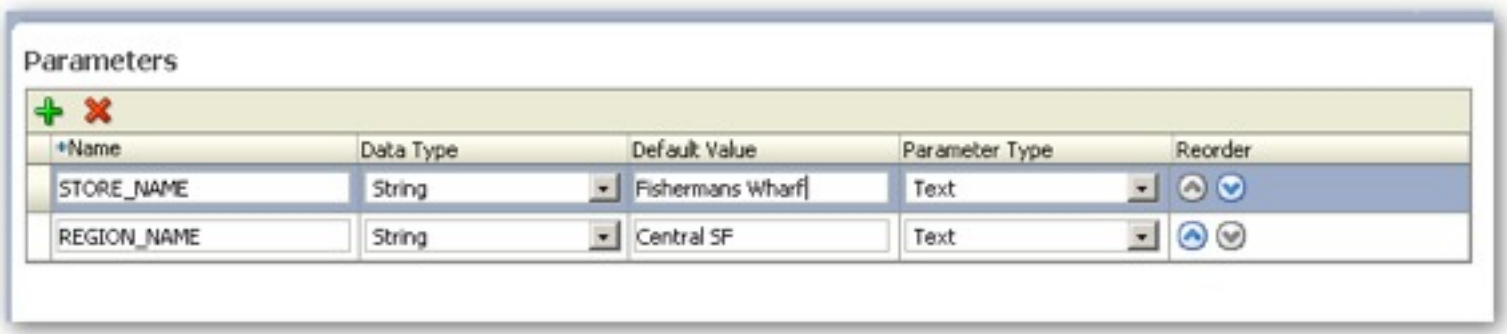
Creating a Data Model Step 3 : Edit Structure, Set Display Names

- New in BIP 11g : Use **Structure** tab to edit the display name for fields, data type, sortting defaults, value if NULL
- Single definition of business view names, avoids having to implement per-report



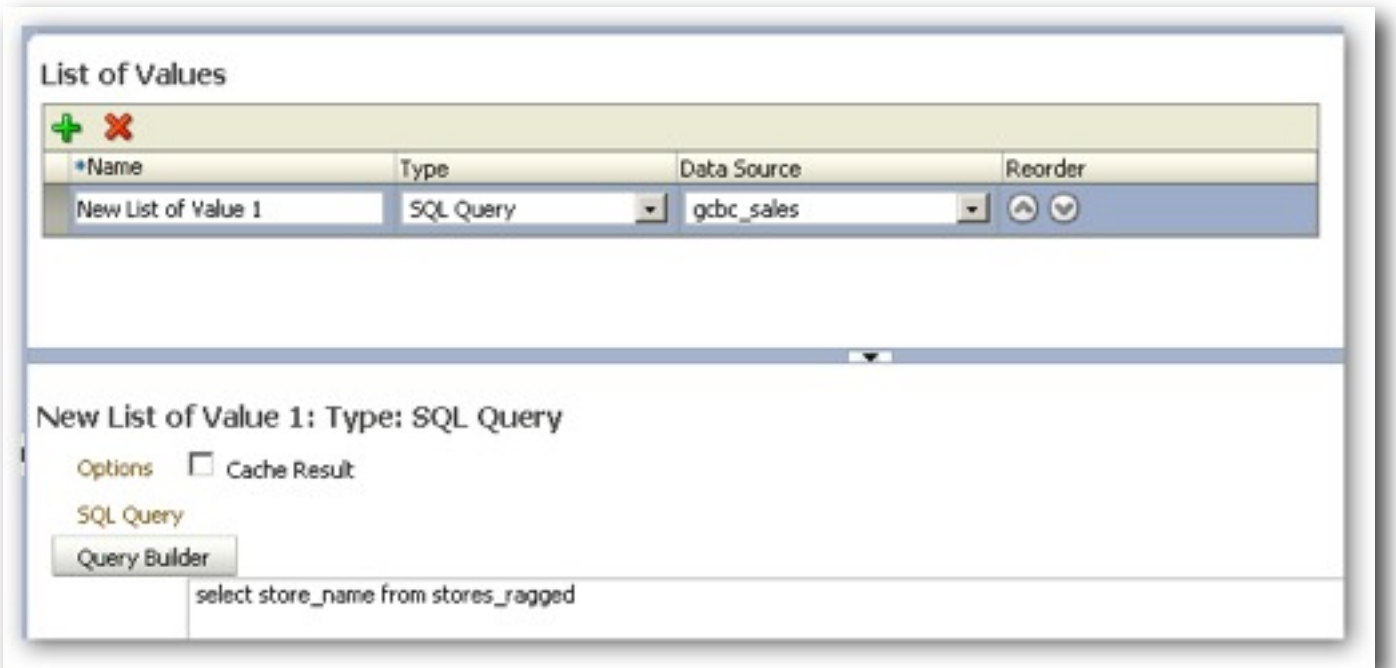
Creating a Data Model Step 4 : Add Parameters

- Add a list of parameters that can be optionally added to each report that uses the data model
- Set parameter name (referenced using :param_name format in data model), default value, data type and parameter type
- Data model data set query needs to be updated to reference the parameter



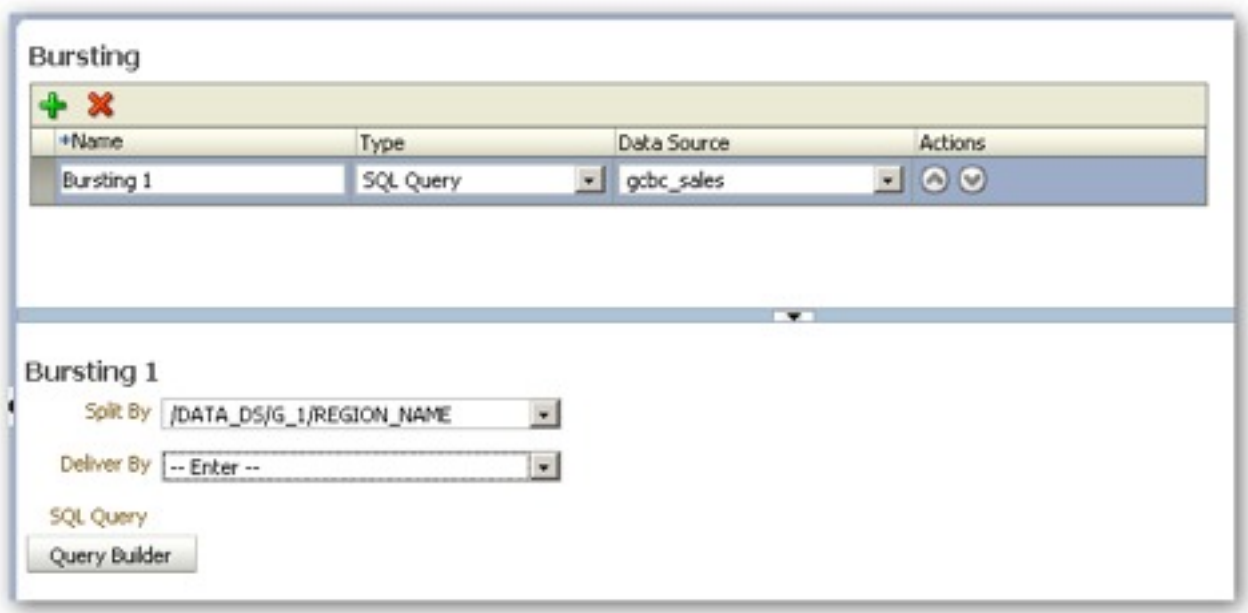
Creating a Data Model Step 5 : Add Lists of Values (LOVs)

- Accompany parameters, are used to provide values for drop-down boxes
- LOVs are based on SQL queries or fixed list of values
- Create LOV, then define query or fixed list associated with it
- Then associate the LOV with the parameter in the parameter settings screen



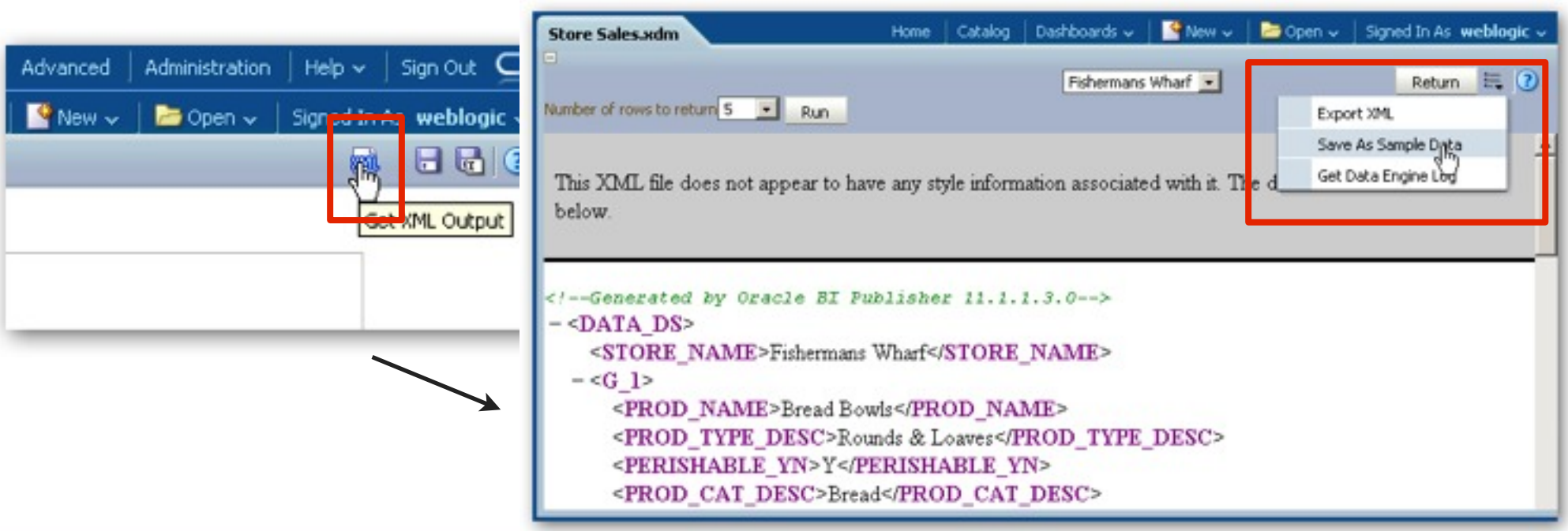
Creating a Data Model Step 6 : Add Bursting Details

- Bursting is the process of generating one query, splitting data into blocks and generating separate reports for each block
- Bursting based on key value and destination value
- Each block can use its own template, style template, output format, locale etc
- Efficient way to generate individual customized output from single SQL pass



Creating a Data Model Step 7 : Generate Sample XML Data

- The RTF and Online Template Builder tools both require a set of sample data, to be able to visually show the data layout during composition
- To create the sample XML data, **Save** report, then press **Get XML Output**, run the report for “n” rows then select **Save as Sample Data**



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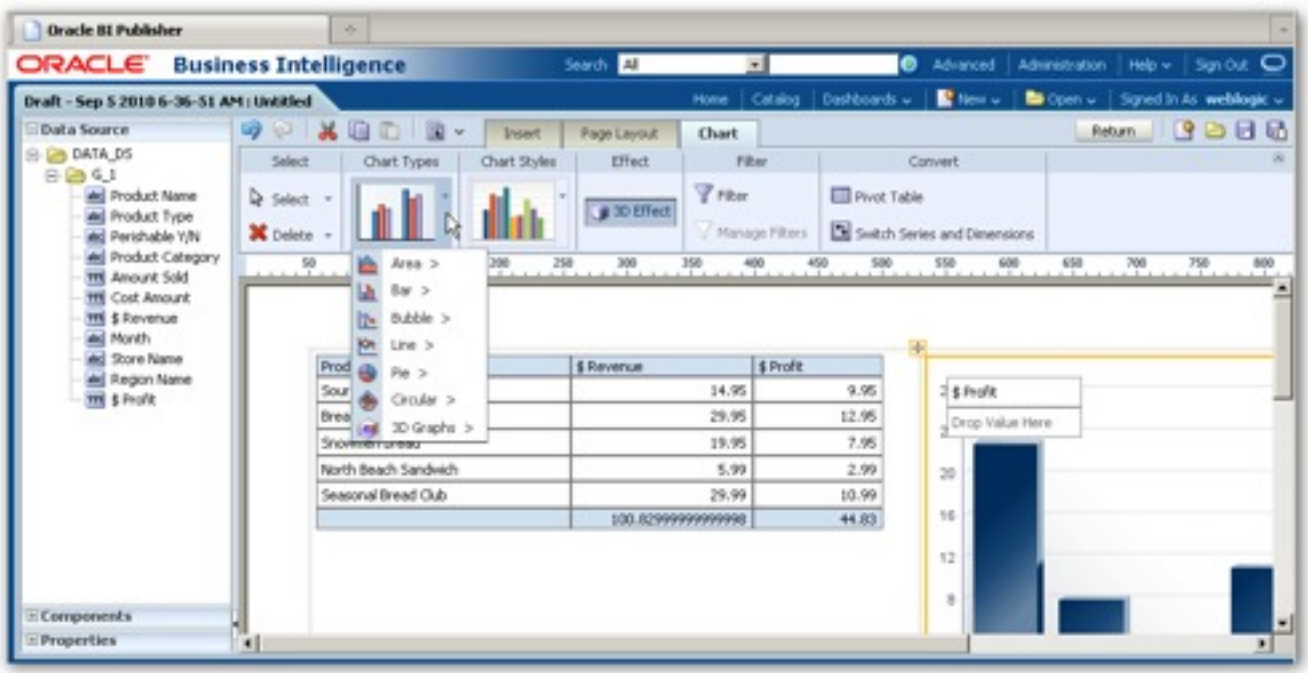
Demonstration

Creating a Simple Data Model

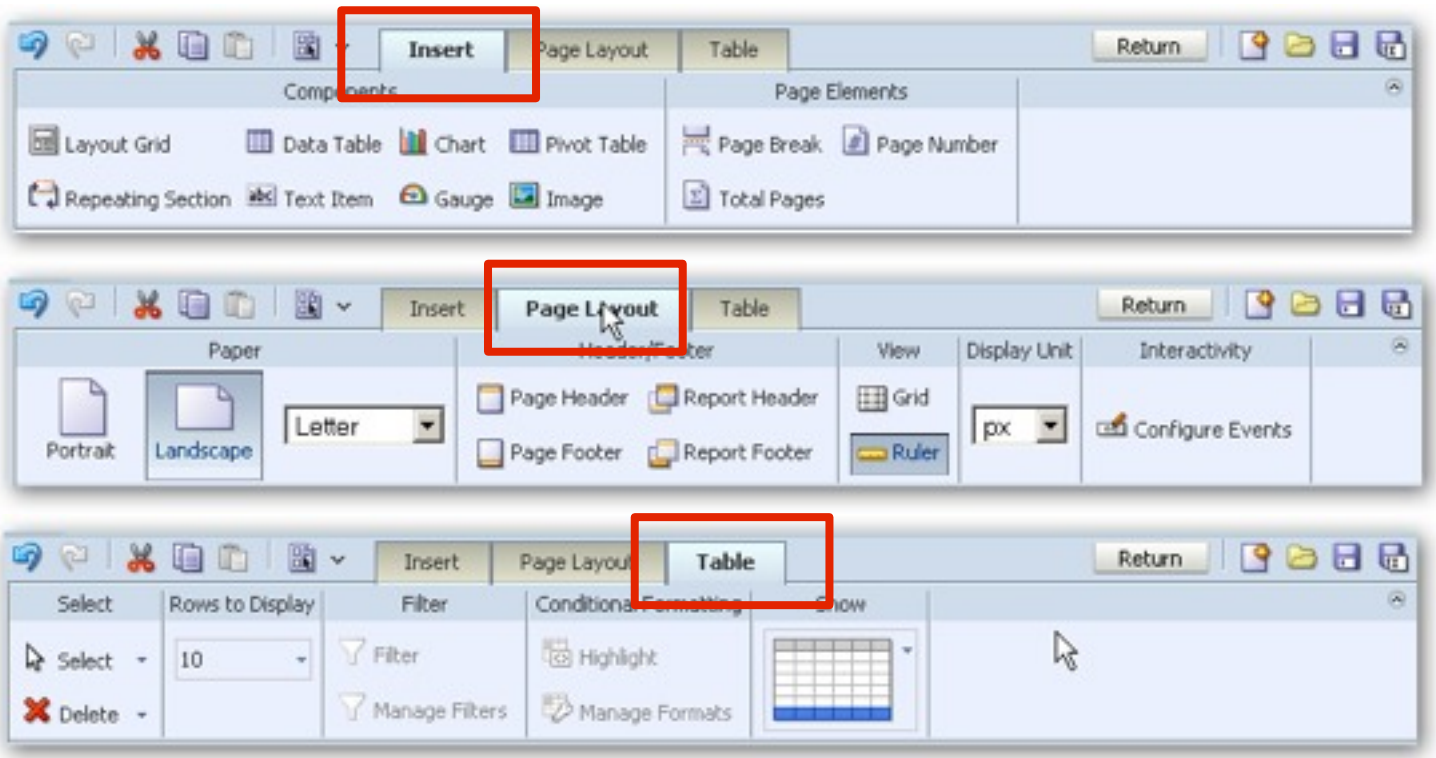
The Online Template Builder In-Depth

- Complementary to the MS Word-based RTF template builder
  - Templates are not interoperable though
- Ribbon-based UI, Properties panel, context-sensive menus, data source column listing, listing of available components



Online Template Builder Ribbon Menu

- Similar to Microsoft Office 2007/2010
- Menu items change depending on the context of selected item
- **Insert** and **Page Layout** tab constant, third tab dependent on context



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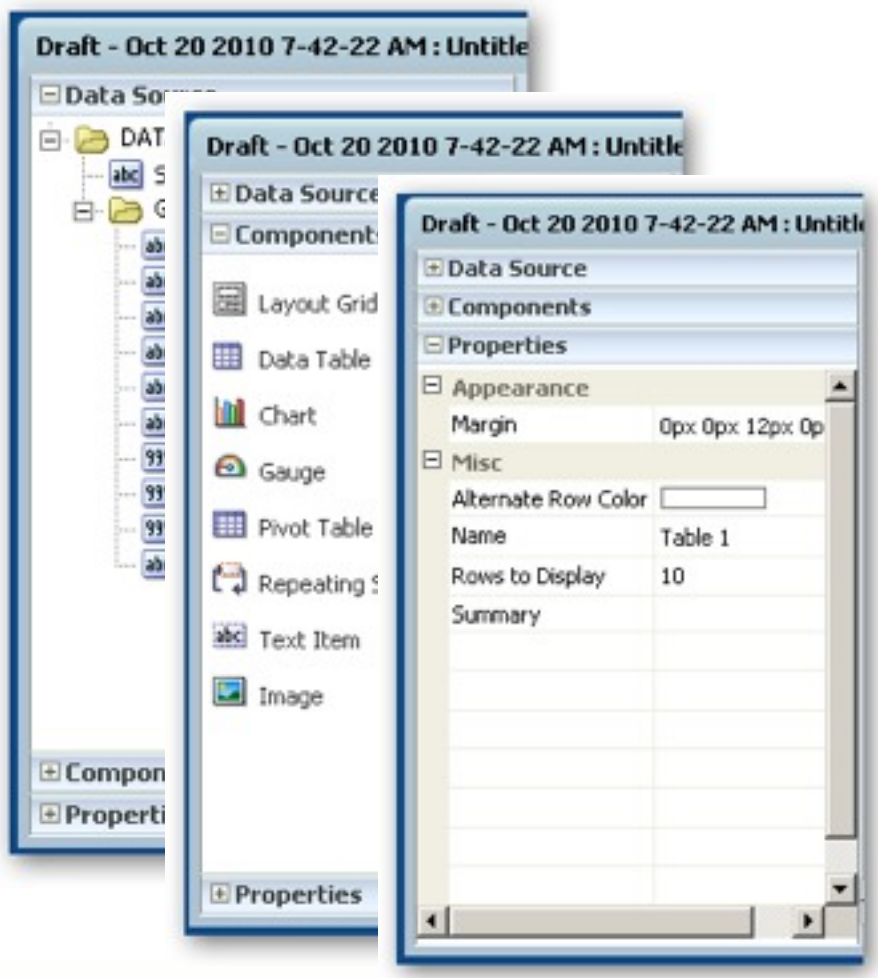
Online Template Builder "Concertina" Menu

- Concertina-style menu on the left hand-side
- Displays three sets of information:
  - list of fields in **Data Source**,
  - list of **Components**
  - list of selected component **Properties**



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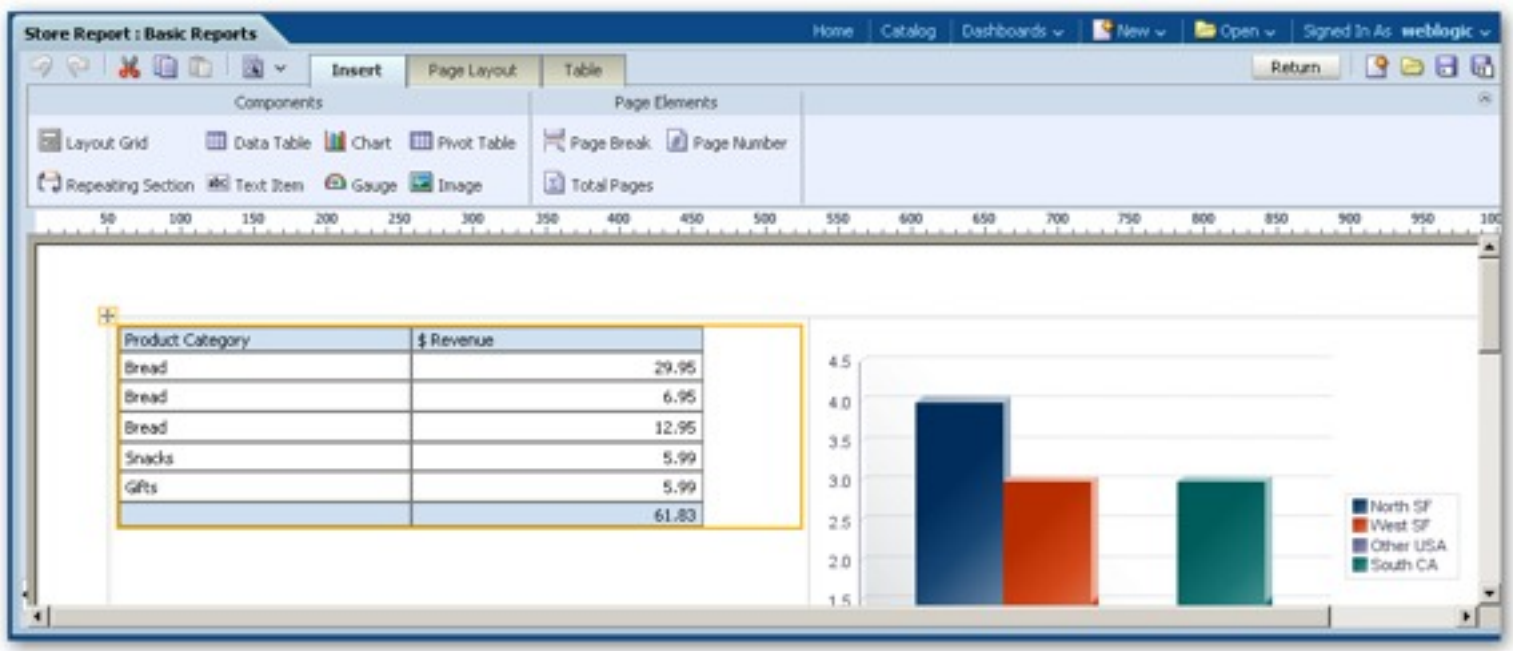
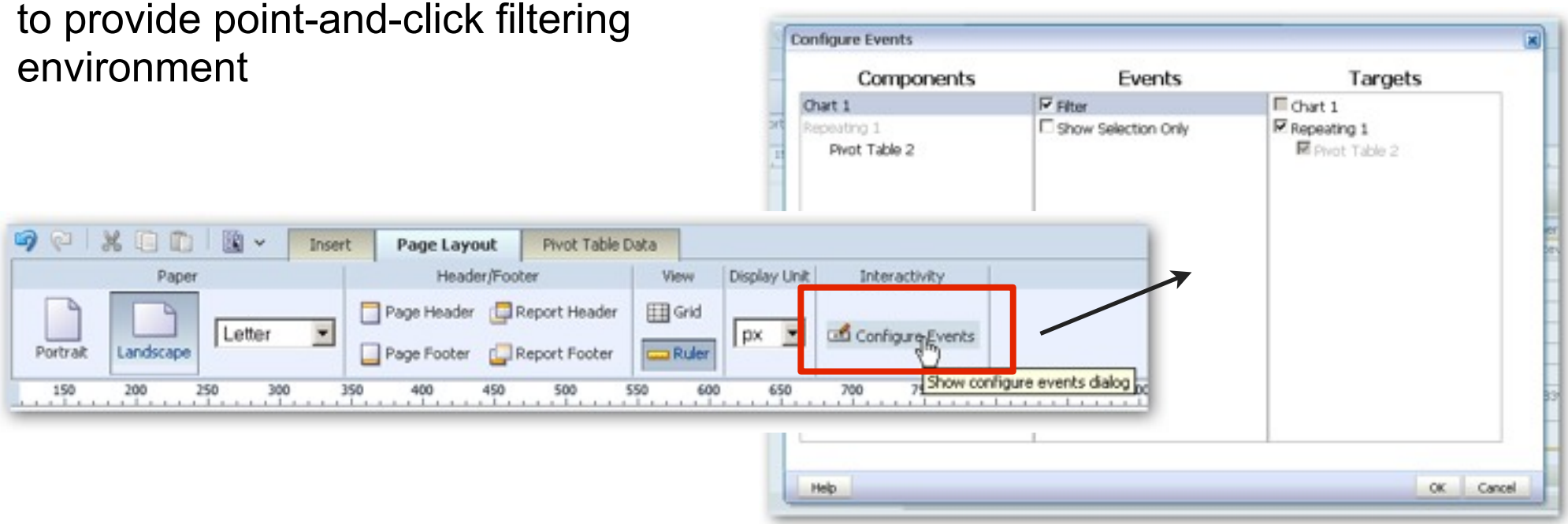
Online Template Builder Layout Grid

- Drag and drop components onto the layout grid
- Sub-divide into columns and rows
- Add tables, charts, gauges, images, text items, repeating groups
- Fine-tune each component by add totalling, filters, conditional formatting etc



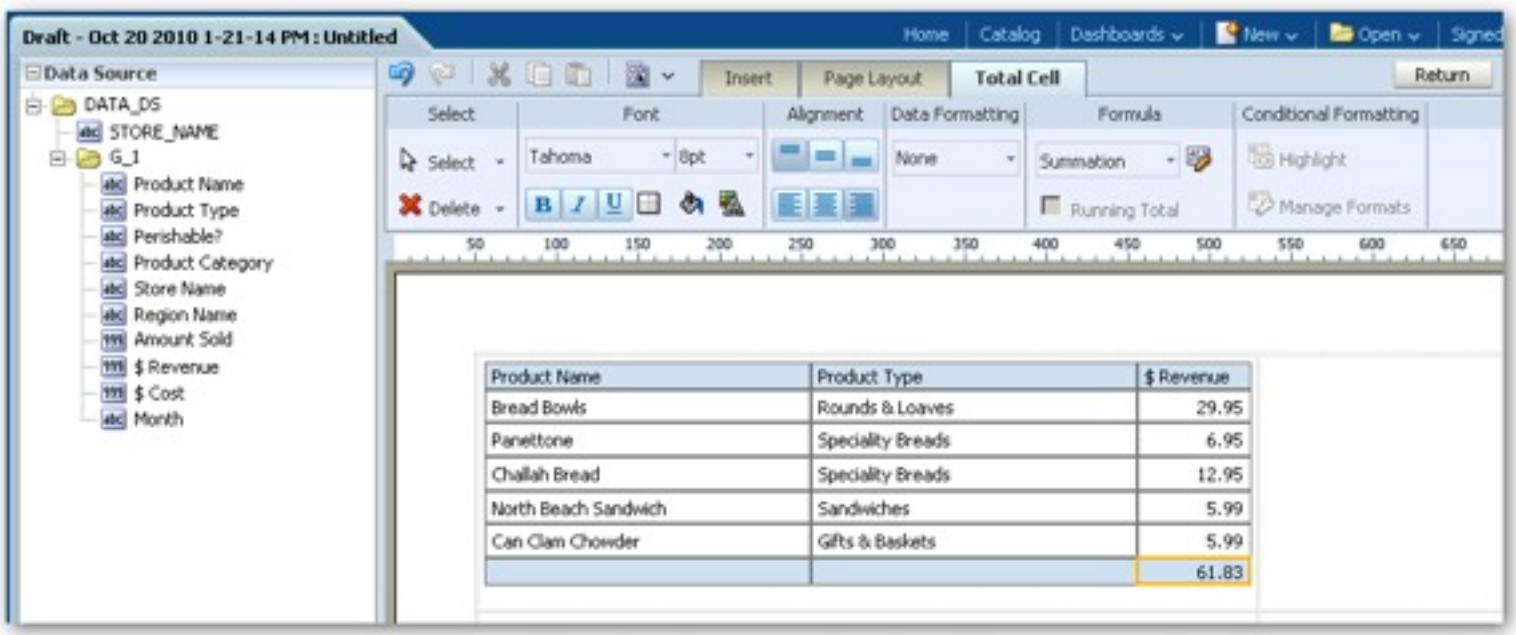
Online Template Builder Events Framework

- Clicks (drills) on one component can be transmitted to other components
- Other components (Qlickview-style) are then filtered based on these events
- All components are automatically “wired-together” in this way
- Used together with Interactive Viewer to provide point-and-click filtering environment



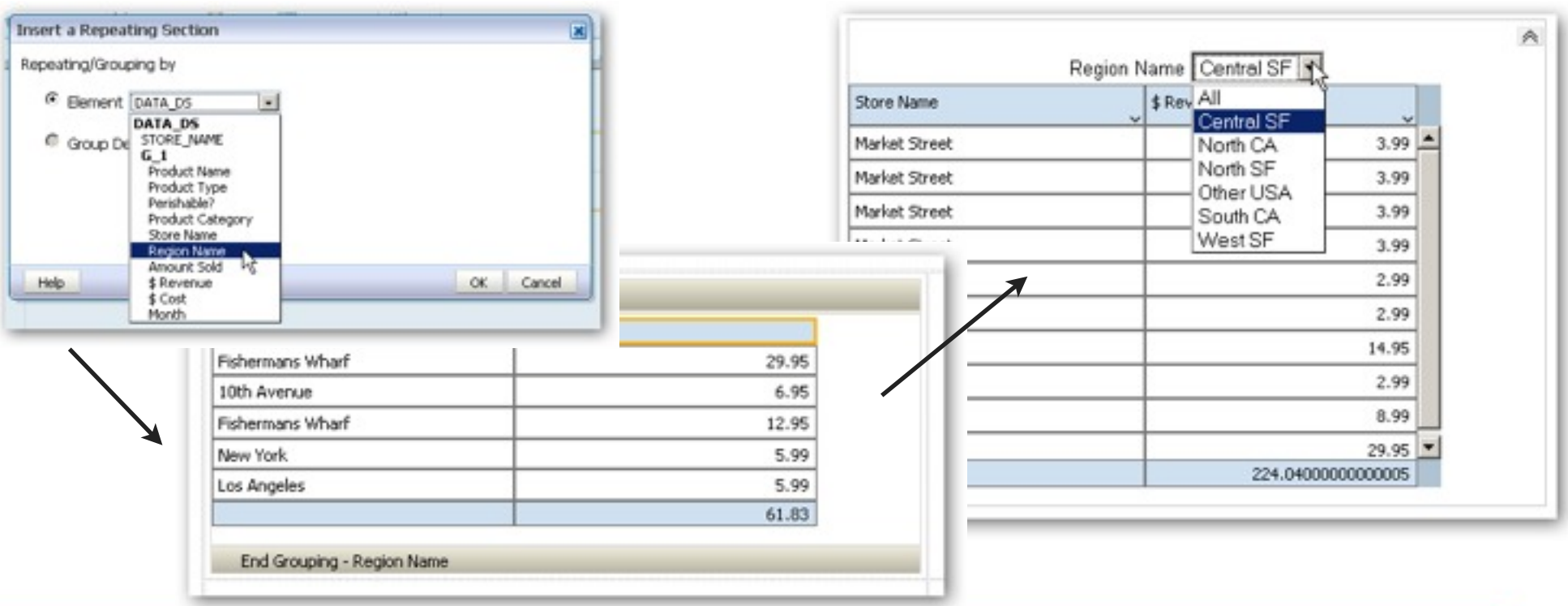
Component Types : Data Tables

- Data Table component type
- Drag and drop fields from the Data Source panel onto table
- Set properties for totals, conditional formatting, font, alignment etc



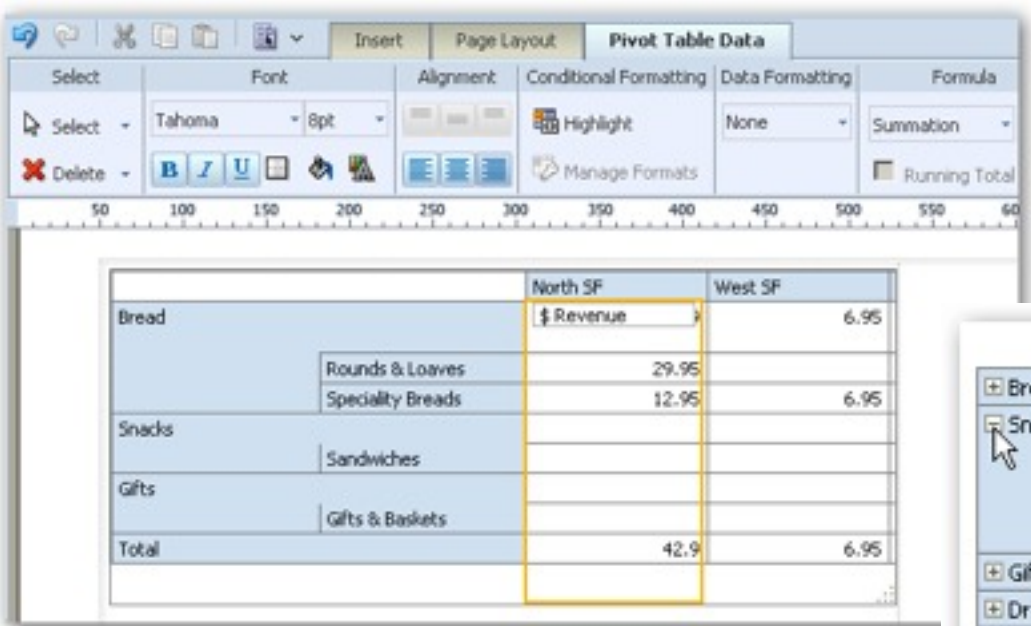
Component Types : Repeating Groups

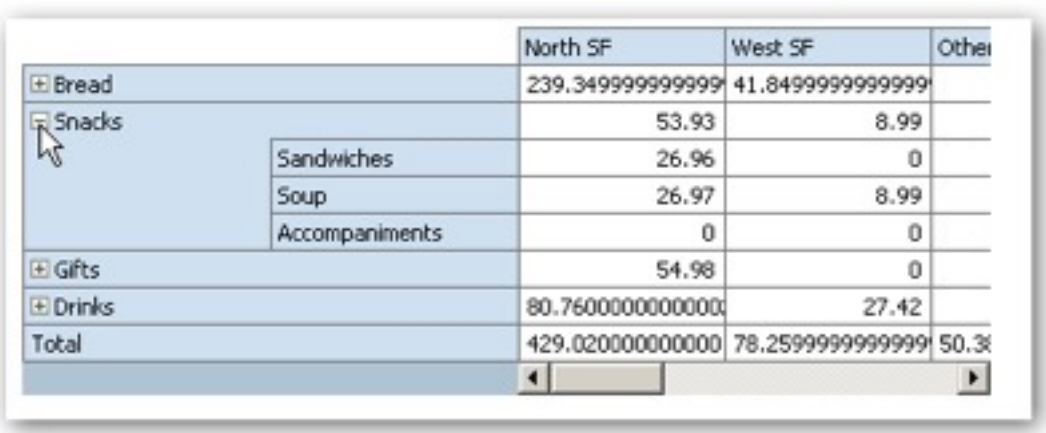
- Used in conjunction with other components
- Either breaks tables, crosstabs etc on selected element (paper output) or adds drop-down menu when using interactive viewer



Component Types : Crosstabs

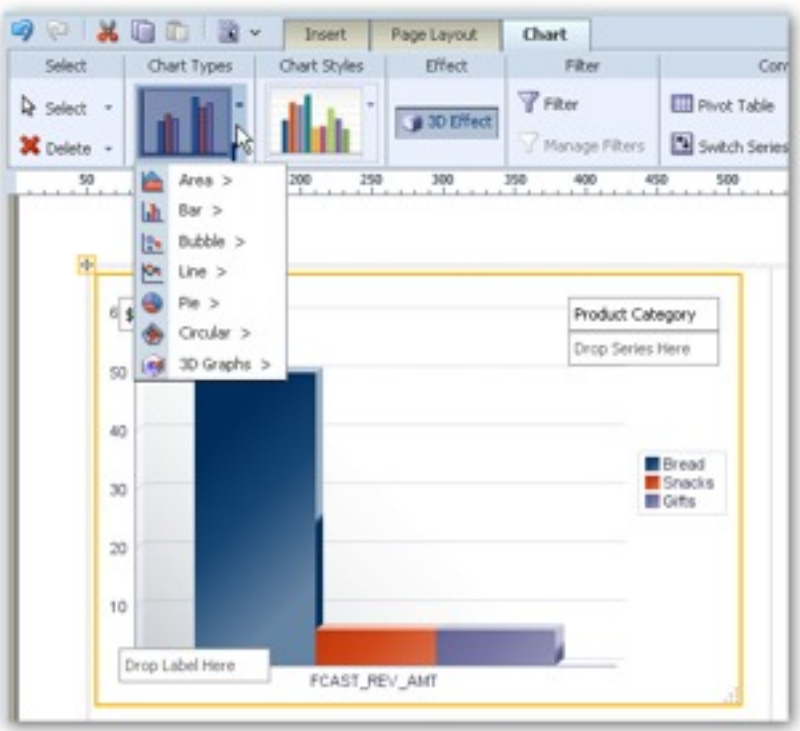
- Select rows and columns from Data Source panel
- Embed fields, add totals, add conditional formatting
- When displayed in report, rows and columns dynamically drillable

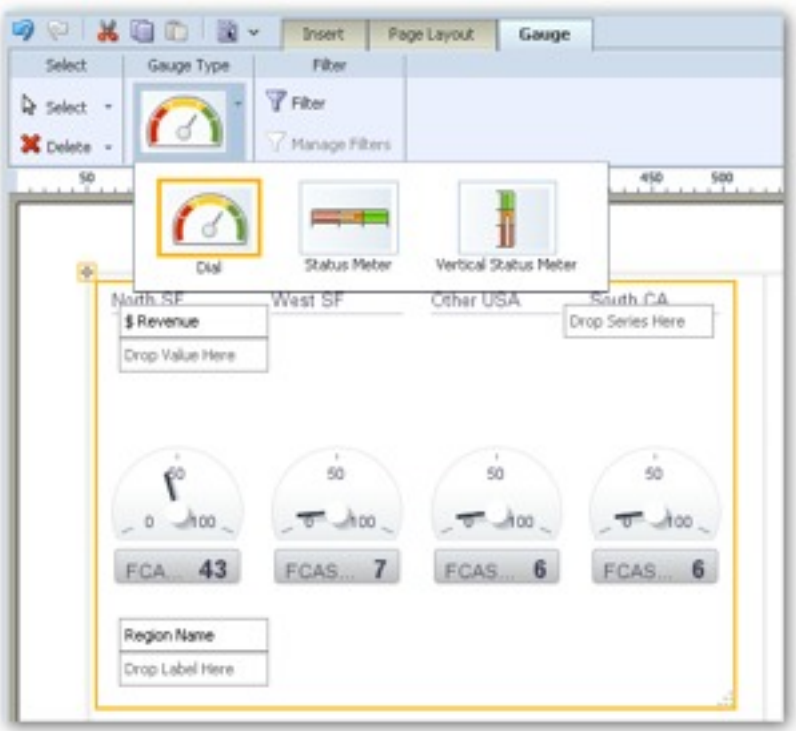




Component Types : Graphs and Gauges

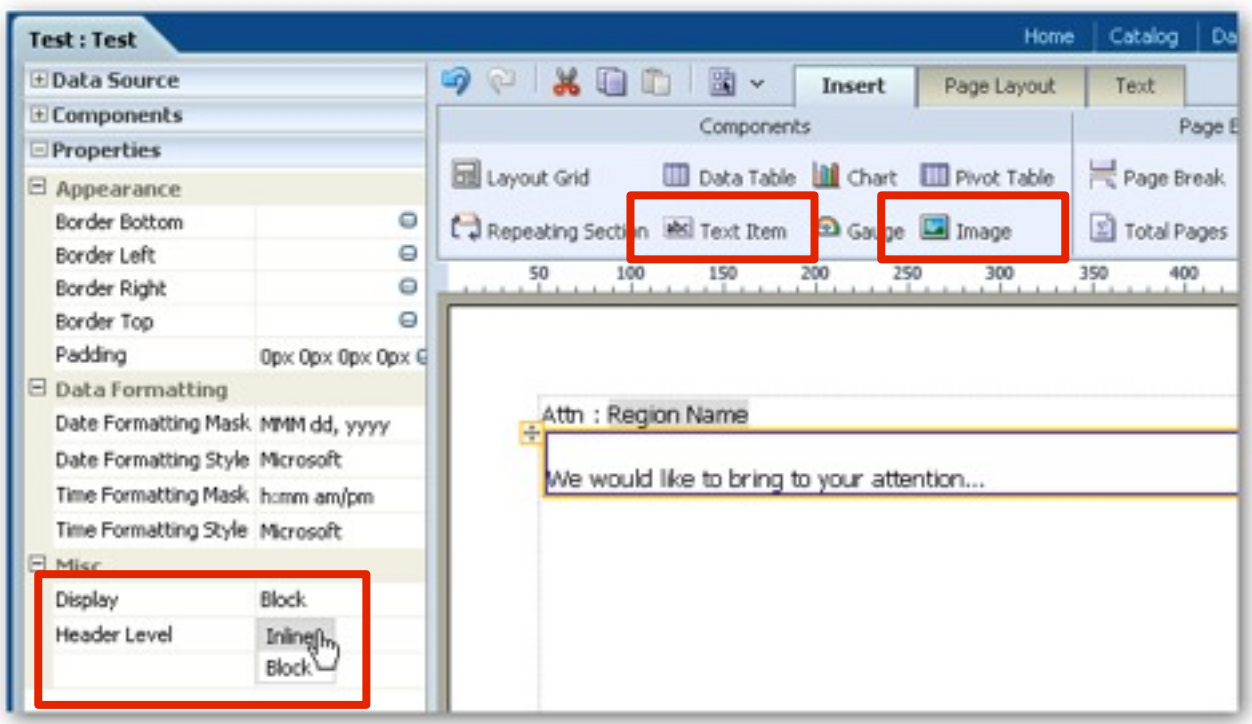
- Standard set of FMW11g graphs and gauges (gauges new for BIP 11g)
- Set series, label, value and graph/gauge type





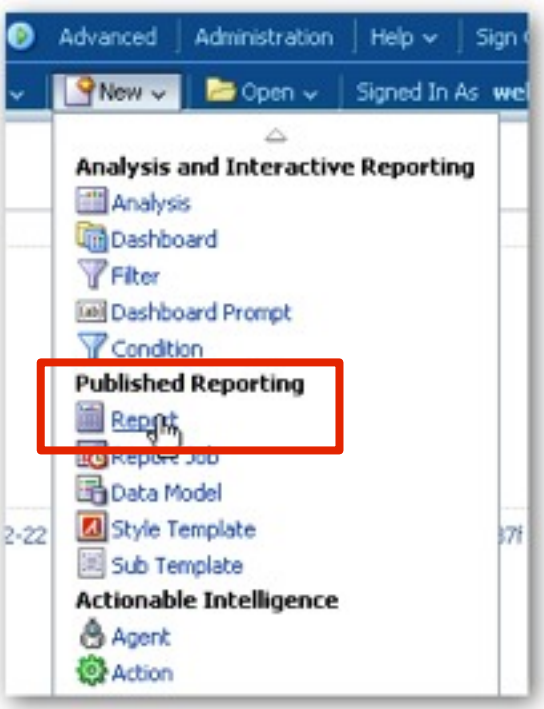
Component Types : Text and Images

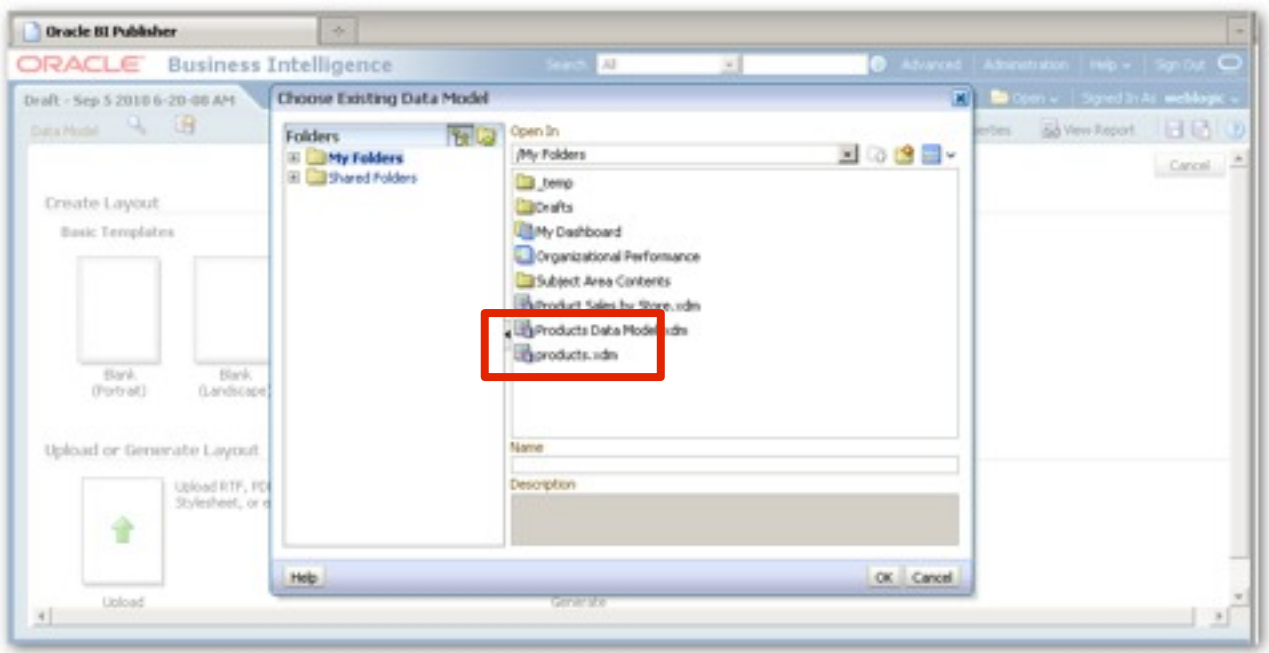
- Typically used for letters, reports
- Add text either inline or in blocks (set using Properties panel)
- Used in combination with data tables, repeating groups etc



Creating a Layout Step 1 : Create Report, Select Data Model

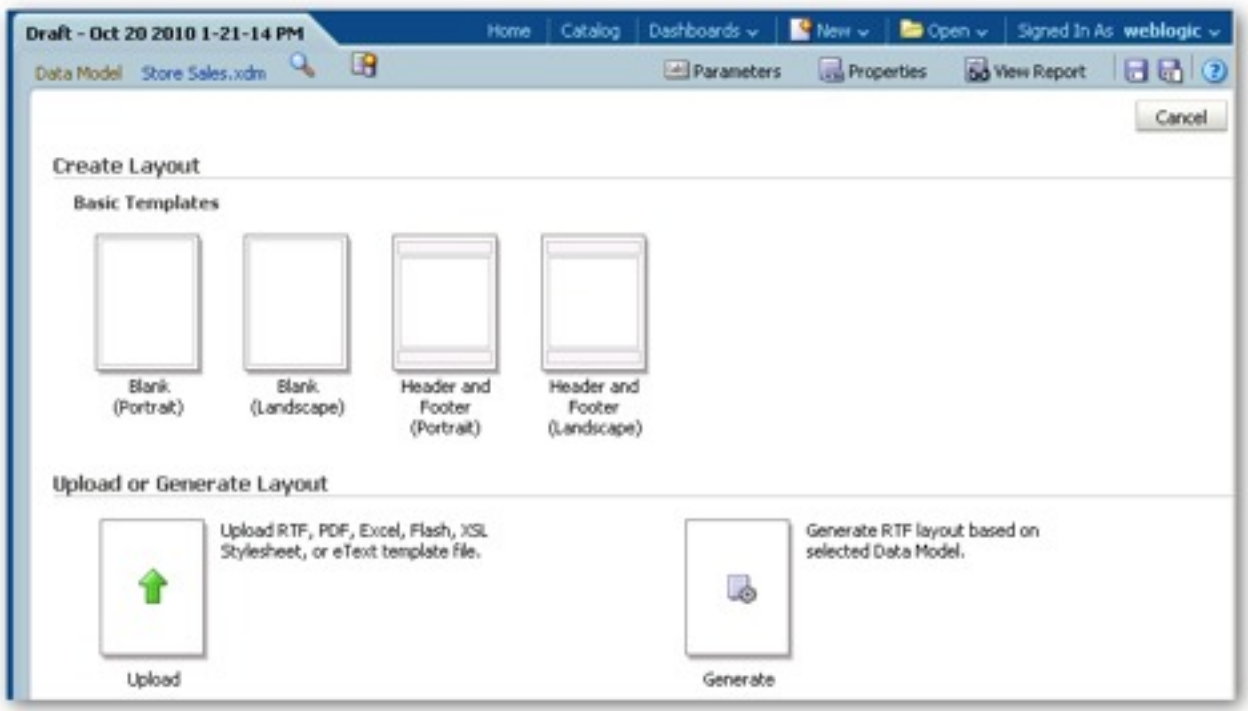
- Assuming new report, select **New** > **Report** from common header menu
- Select existing BIP data model for use with report and template





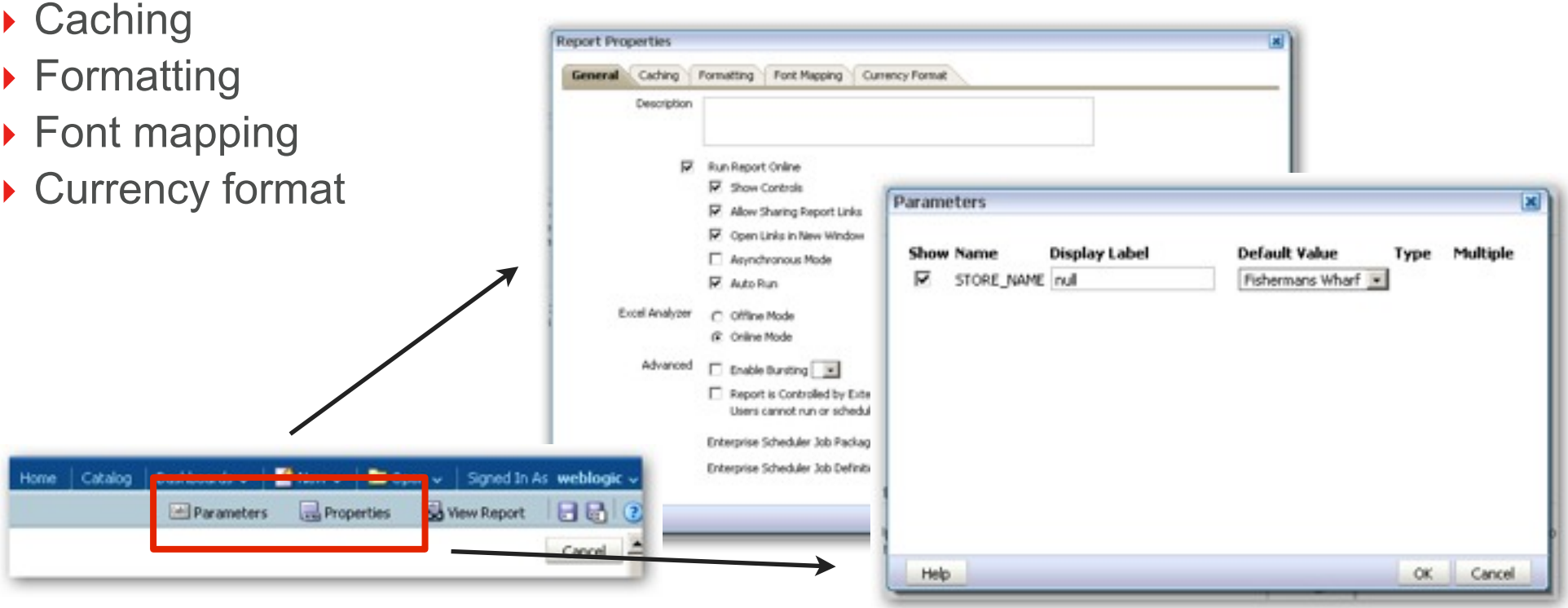
Creating a Layout Step 2 : Select Layout Template

- Either select from one of four standard “online template builder” templates
  - Or upload an RTF, Flash, XLS etc template (created offline)
  - Or generate a starter RTF template based on data model and XML sample



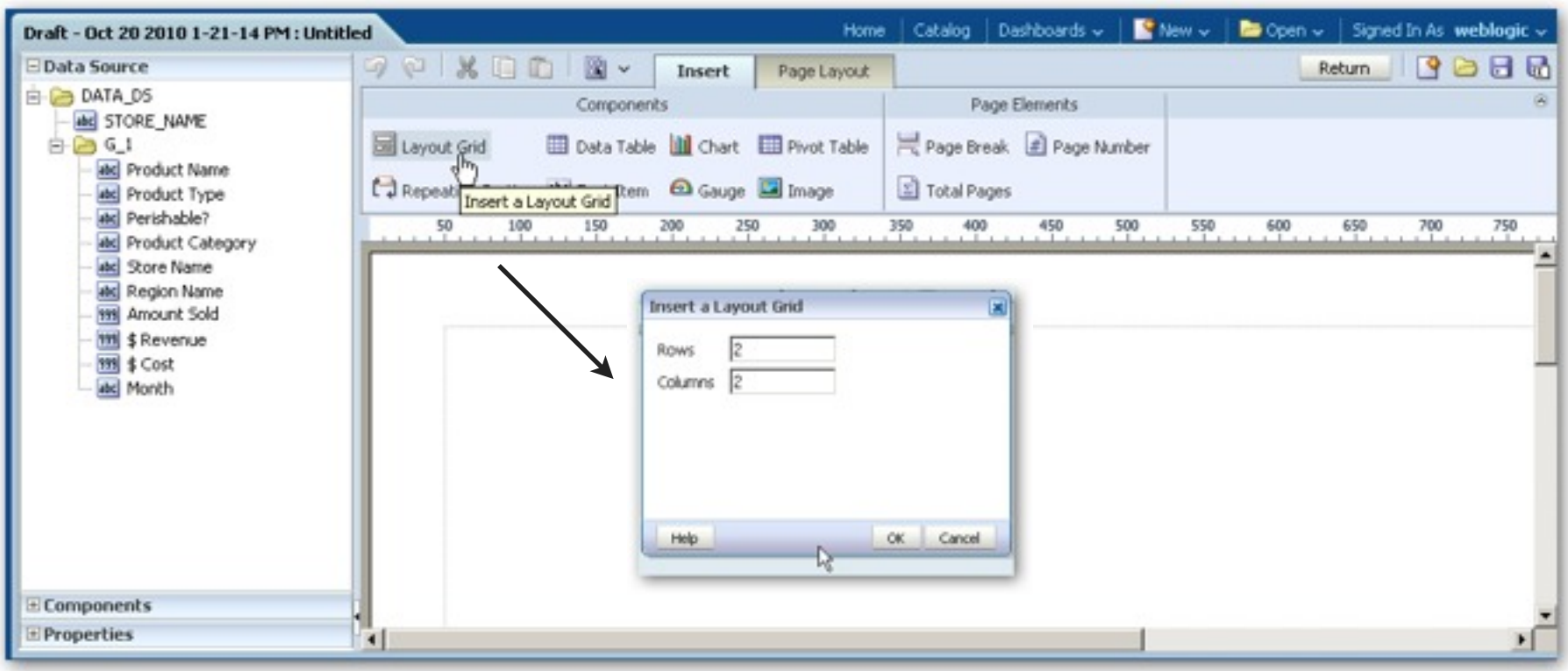
Creating a Layout Step 3 : Select Parameters, Set Properties

- Select parameters from the superset list defined in the data model
- Set properties for the report
  - General properties (bursting enabled etc)
  - Caching
  - Formatting
  - Font mapping
  - Currency format



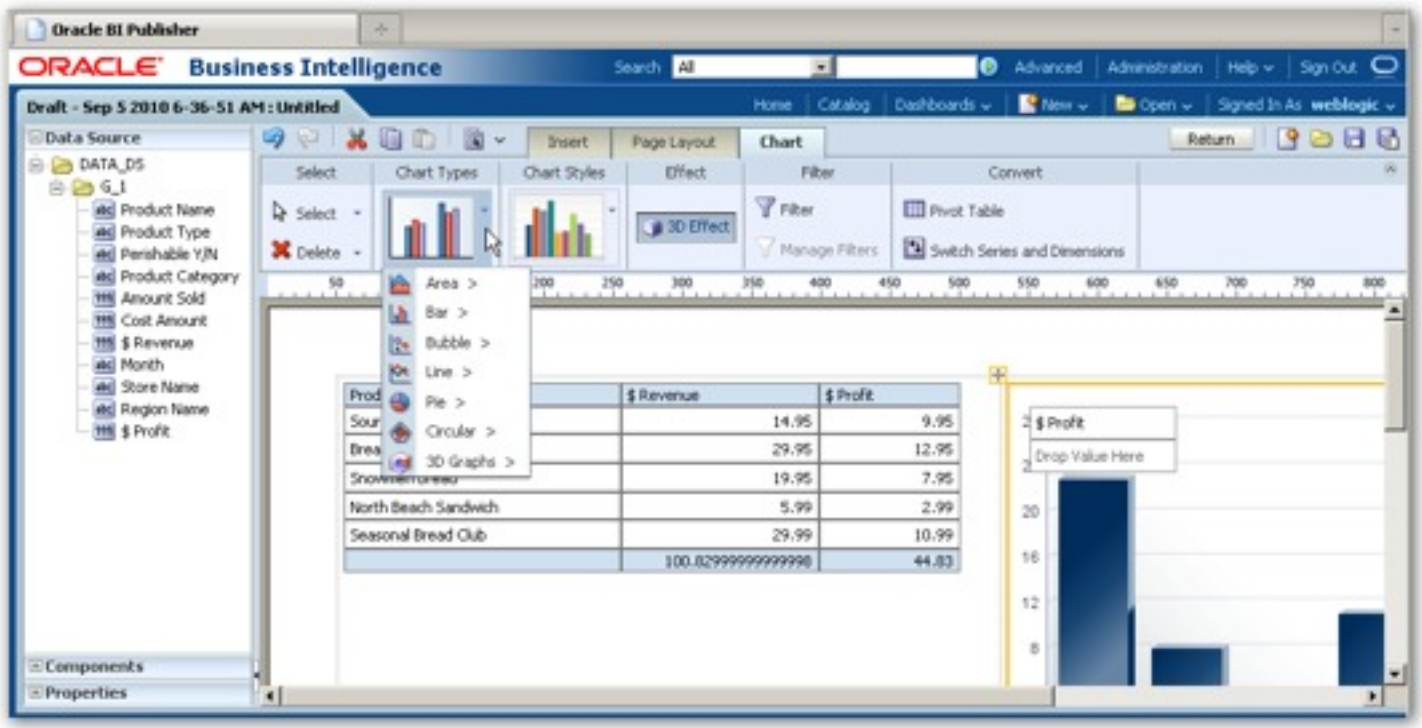
Creating a Layout Step 4 : Add Initial Layout Grid

- Layout Editor will then open, with blank layout canvas
- Add basic structure to report by adding layout grid (optional)



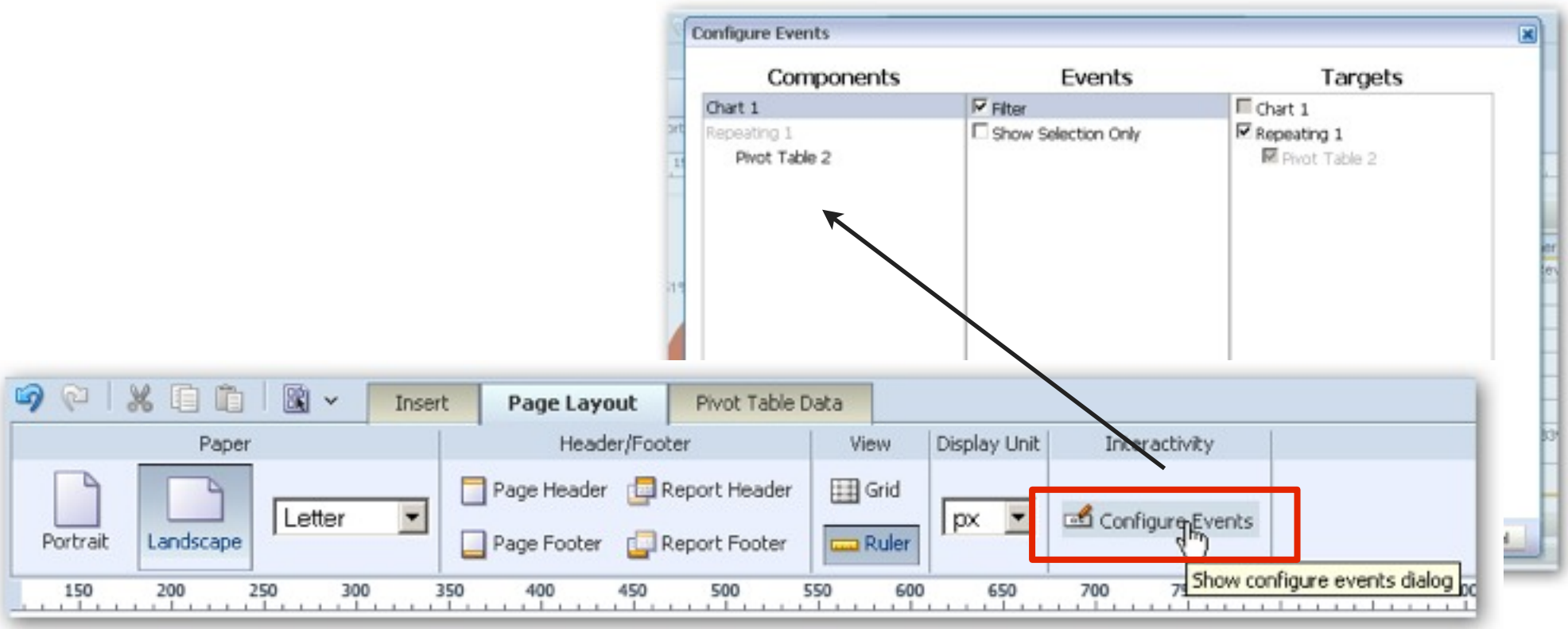
Creating a Layout Step 5 : Add Components to Layout Grid

- Add components to layout grid
- Components (graphs etc) will typically require further settings and choices
  - Type of graph; data elements for rows, colums, series etc



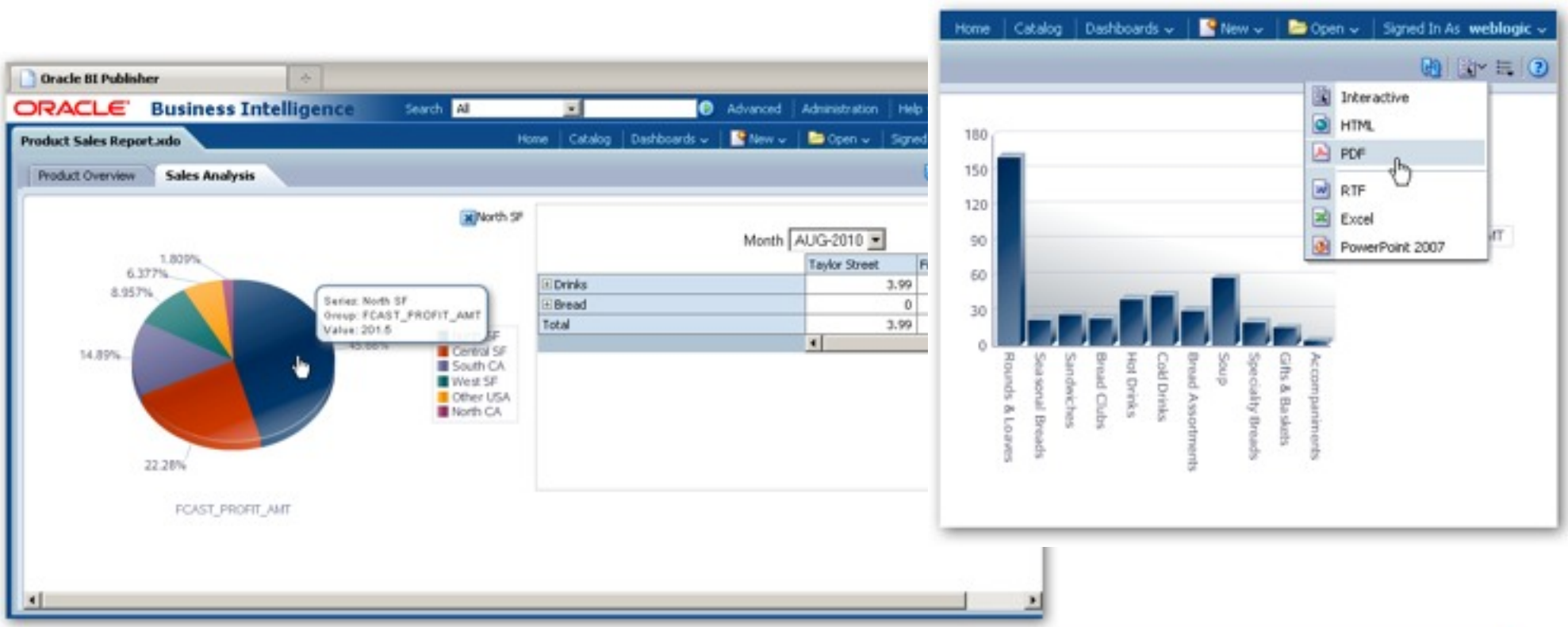
Creating a Layout Step 6 : Configure Event Settings

- Configure which components will communicate clicks (drill-to-detail) with each other



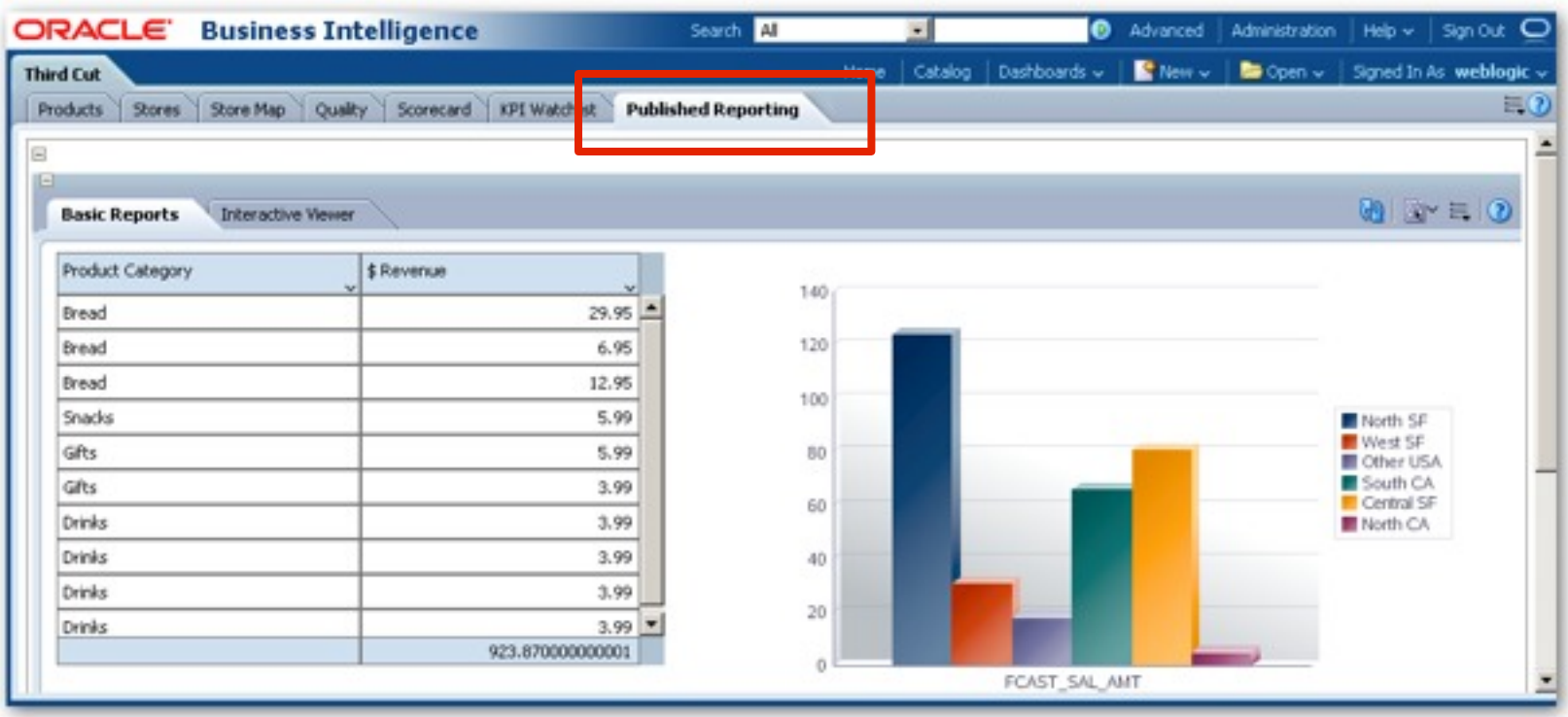
Creating a Layout Step 7 : Save Template and View Report

- Save template to report definition, then save report to catalog (**.xdo**)
- Run report to test, view in Interactive Viewer and in other output formats



Creating a Layout Step 8 : View Standalone, or within OBIEE 11g

- Either run reports standalone, output to PDF / Excel etc, or view embedded within OBIEE dashboard
- Uses same ADF DVT components, so consistent look-and-feel



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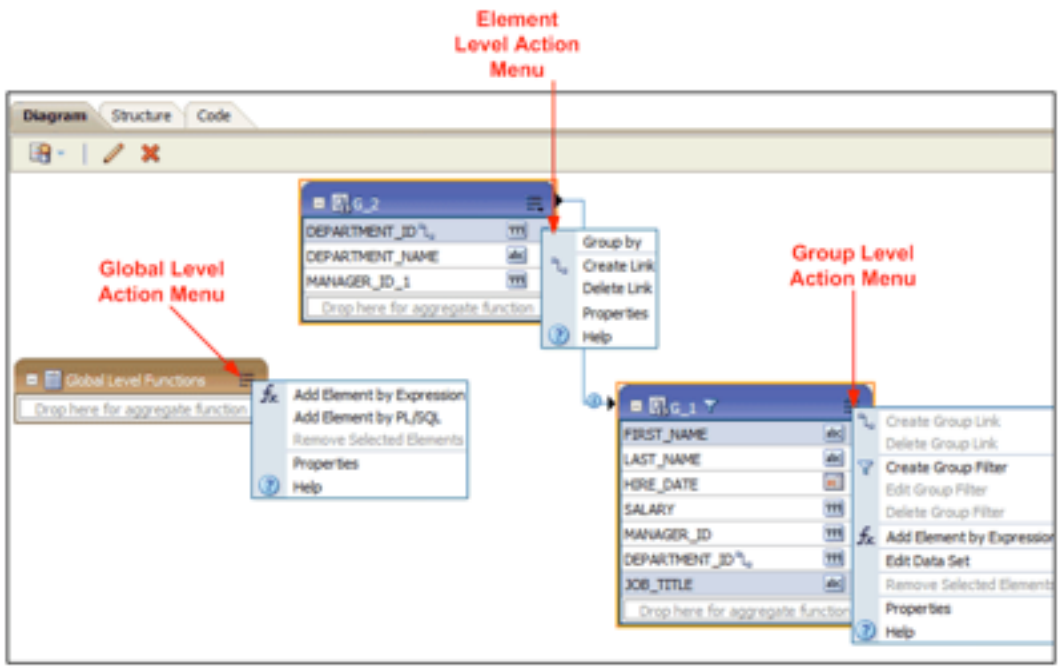
Demonstration

Creating a Layout using the Online Layout Editor

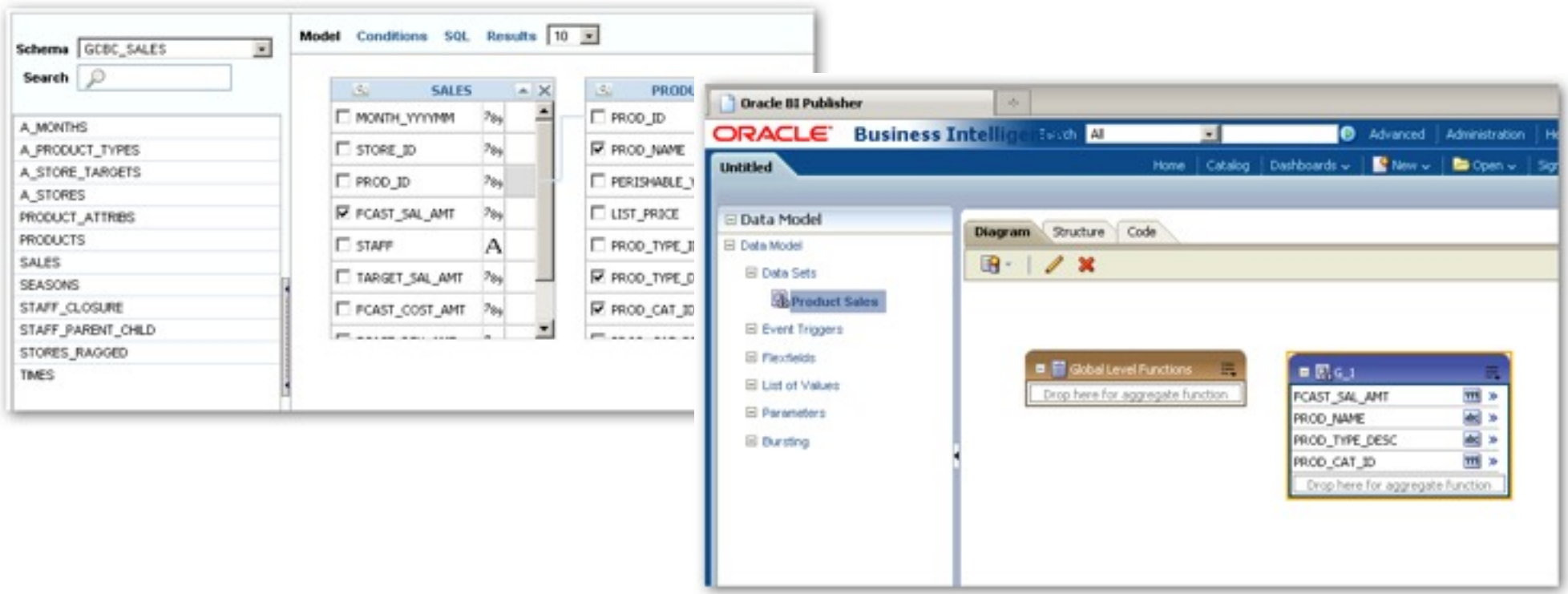
BI Publisher Data Models and Federated Data

- BI Publisher, like OBIEE, can combine multiple data sources for a single report
  - BI Publisher 11g requires all data to be at same level of aggregation
  - OBIEE proper allows data to be combined at differing aggregation levels
- Additional queries are added, and then joined across common keys
- Group-level and global functions can then be added for grand totals, subtotals
- Lightweight query federation (now through GUI, in 10g through Data Templates)



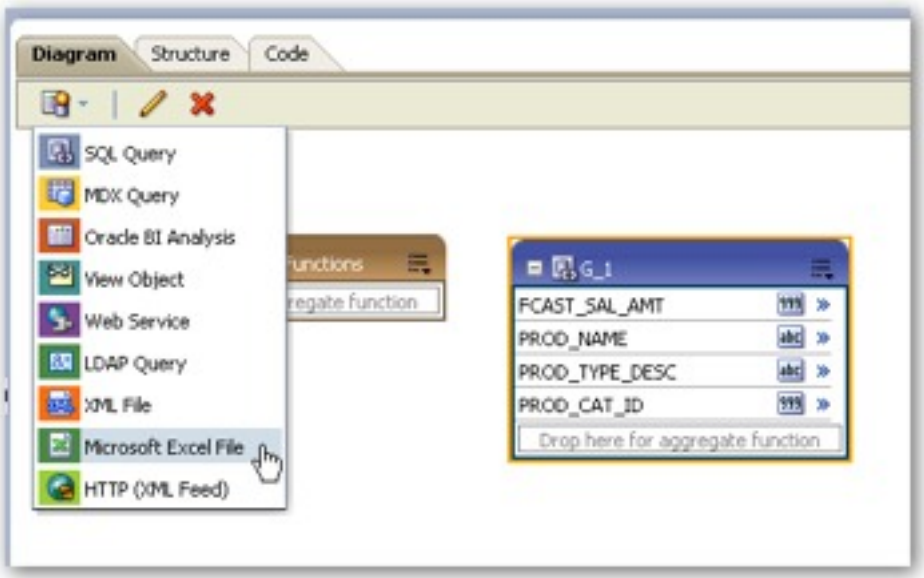
Creating Federated Queries Step 1 : Create First Data Set

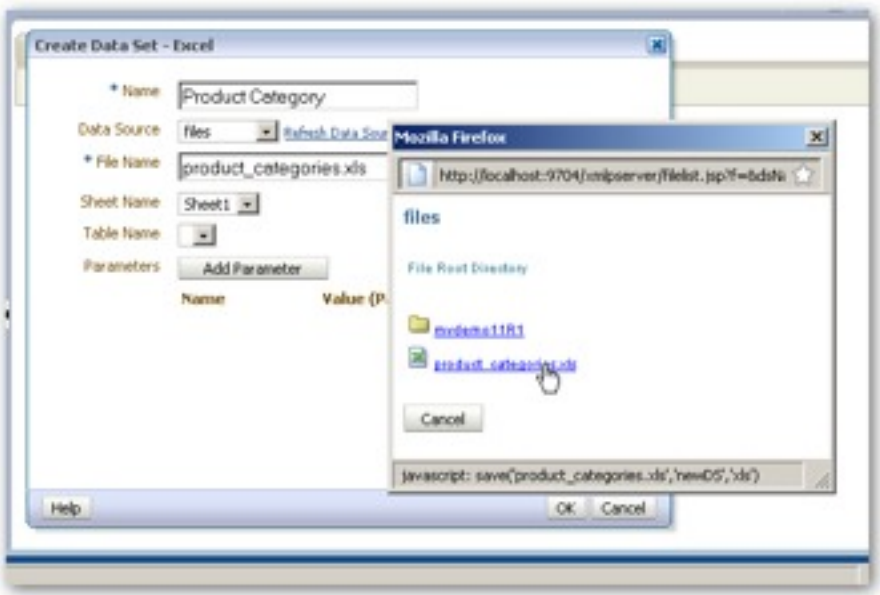
- Create initial query (data set) as usual, or reuse existing one
- Any query against any data source is valid, as all are internall converted to XML elements later in the process



Creating Federated Queries Step 2 : Add Second Data Set

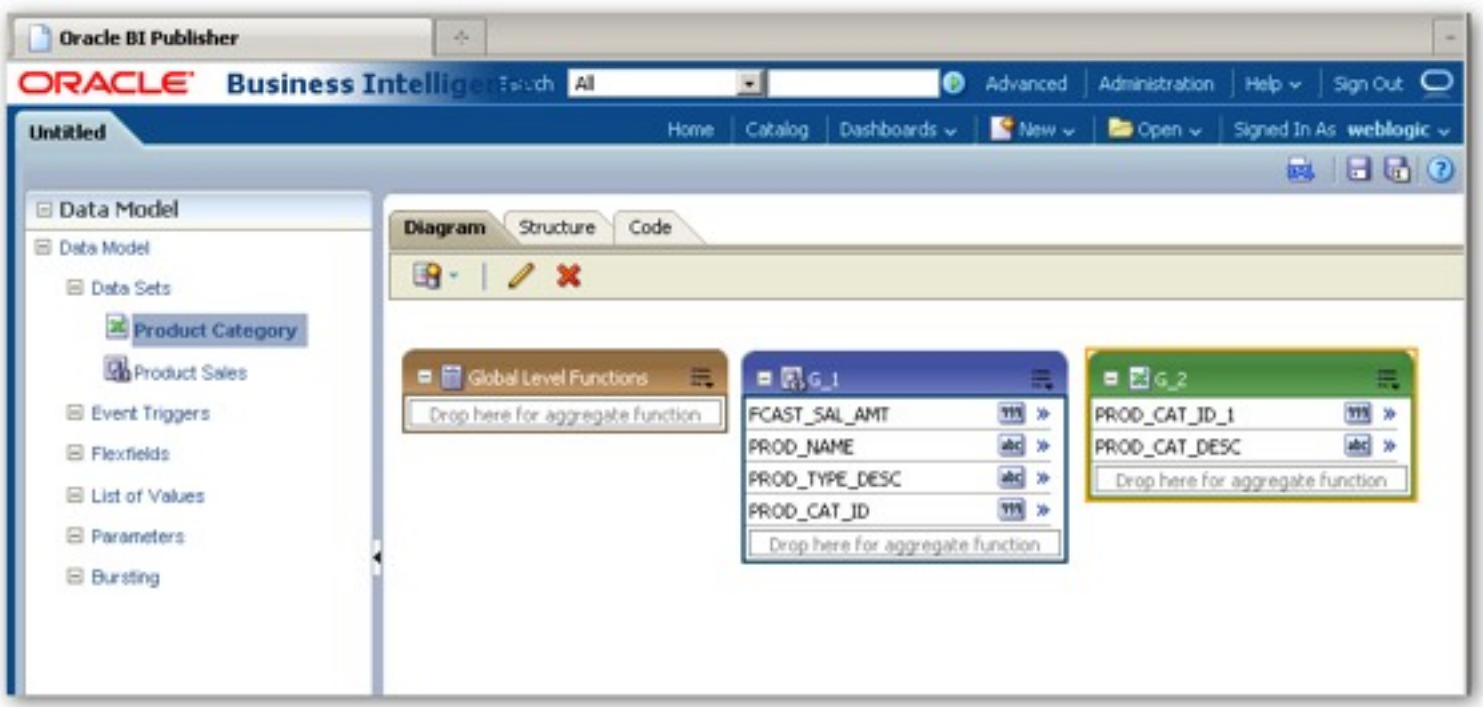
- Return to the Diagram tab, select **New Data Set**
- Complete the query details to define the second data set as normal
  - In the example below, MS Excel is being directly accessed (through ODBC)





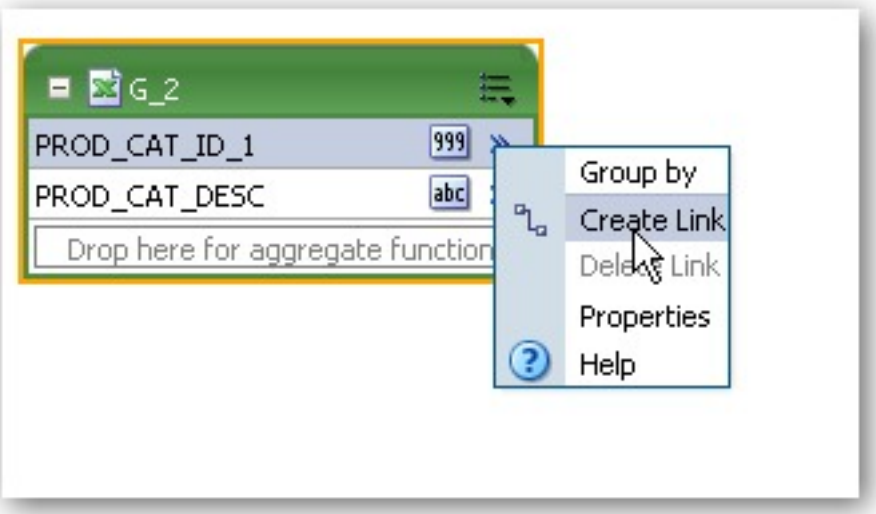
Creating Federated Queries Step 3 : Review Data Sets

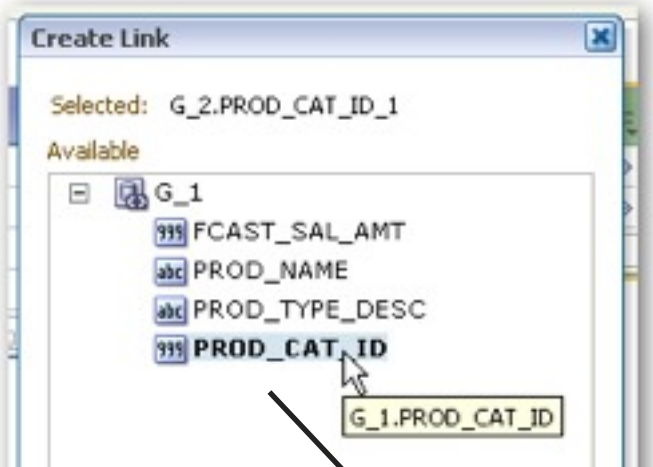
- The data model will now contain two distinct data sets
- You need to now identify the column that they will join on
  - In our case, it will be **`PROD_CAT_ID`**

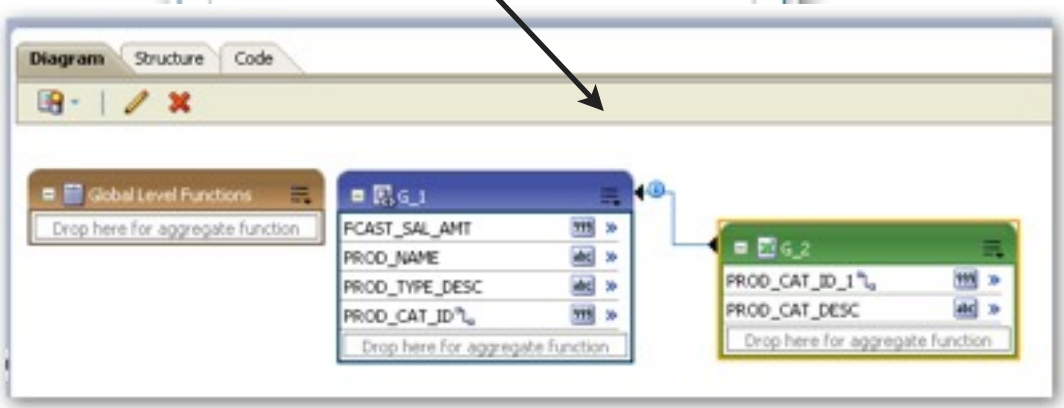


Creating Federated Queries Step 4 : Add Link Between Data Sets

- Locate master column (master/detail) and select Create Link
- Select column in detail data set to join to
- Data sets are now joined

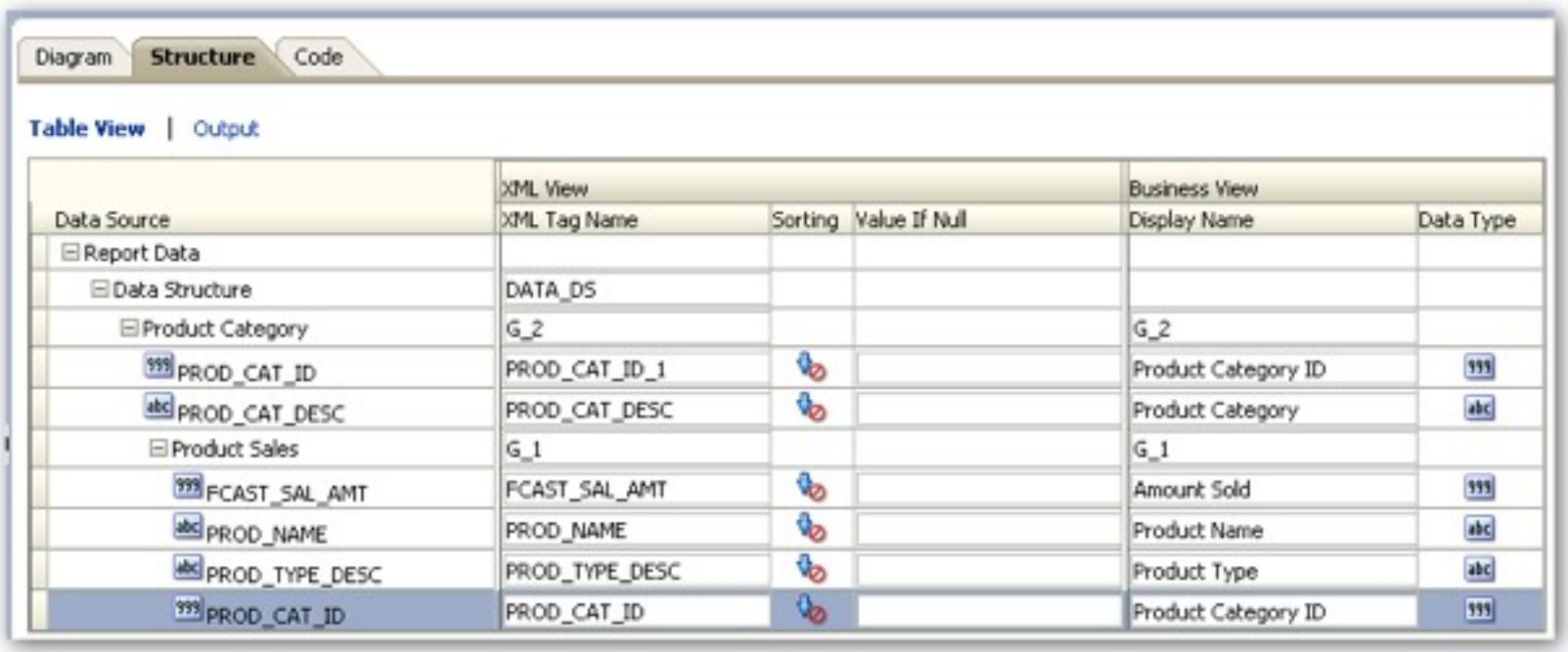






Creating Federated Queries Step 5 : Review Output and Nesting

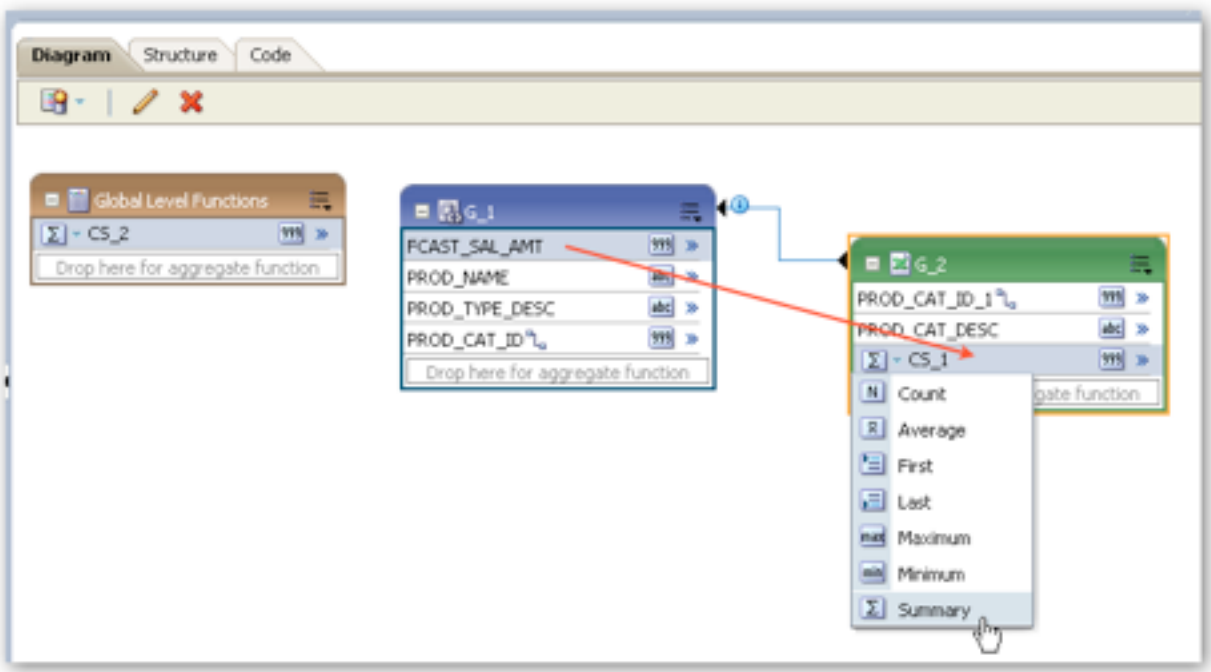
- The detail-level dataset should be nested (repeated) within the master one
  - If it's not, you've got the join back-to-front
- Edit the display names as before, set sorting etc



Data Source	XML View: XML Tag Name	Sorting	Value If Null	Business View: Display Name	Data Type
Report Data					
Data Structure	DATA_DS				
Product Category	G_2			G_2	
PROD_CAT_ID	PROD_CAT_ID_1			Product Category ID	999
PROD_CAT_DESC	PROD_CAT_DESC			Product Category	abc
Product Sales	G_1			G_1	
FCAST_SAL_AMT	FCAST_SAL_AMT			Amount Sold	999
PROD_NAME	PROD_NAME			Product Name	abc
PROD_TYPE_DESC	PROD_TYPE_DESC			Product Type	abc
PROD_CAT_ID	PROD_CAT_ID			Product Category ID	999

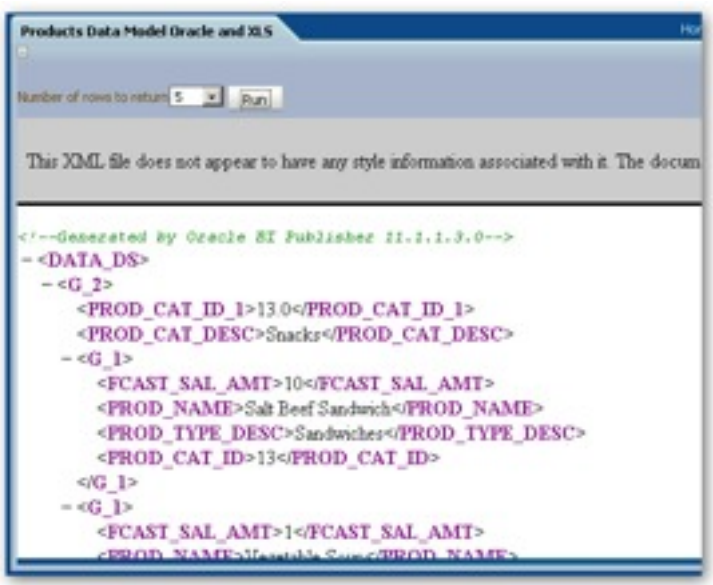
Creating Federated Queries Step 6 :

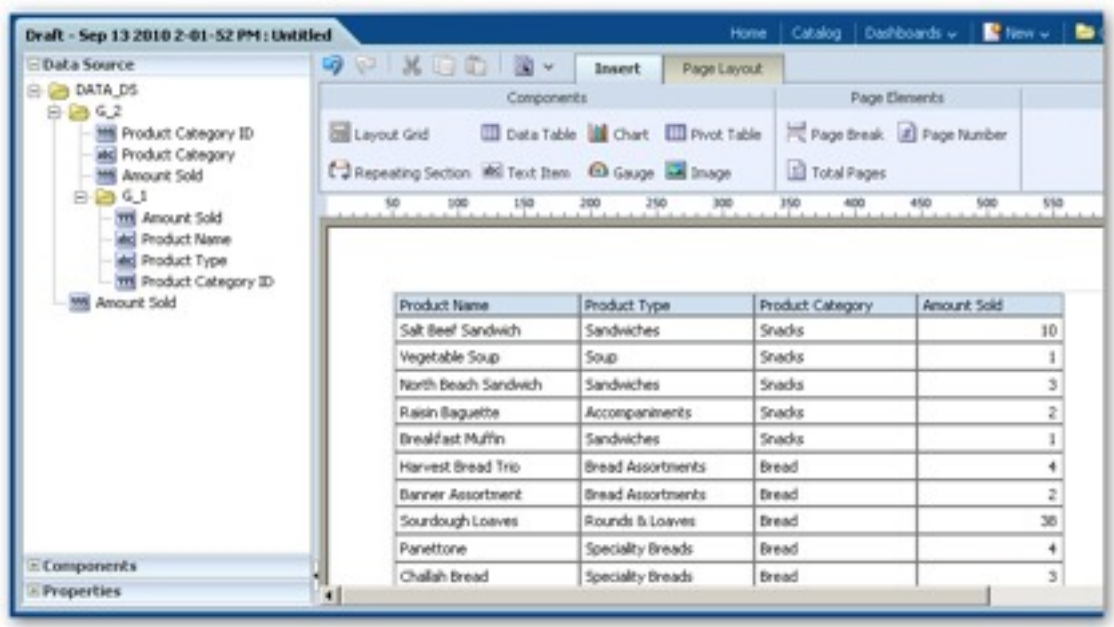
- Drag columns from detail level to master level to add group-level totals
- Amend aggregation type as required
- Set global aggregates to provide access to report-level totals for layouts



Creating Federated Queries Step 7 : Get XML, Create Layout

- Once data model is complete, generate sample XML output as before
- Then include in layout as with single-data set report
- For master- and report-level columns, use group and global-level aggregates as defined in the previous step





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Demonstration

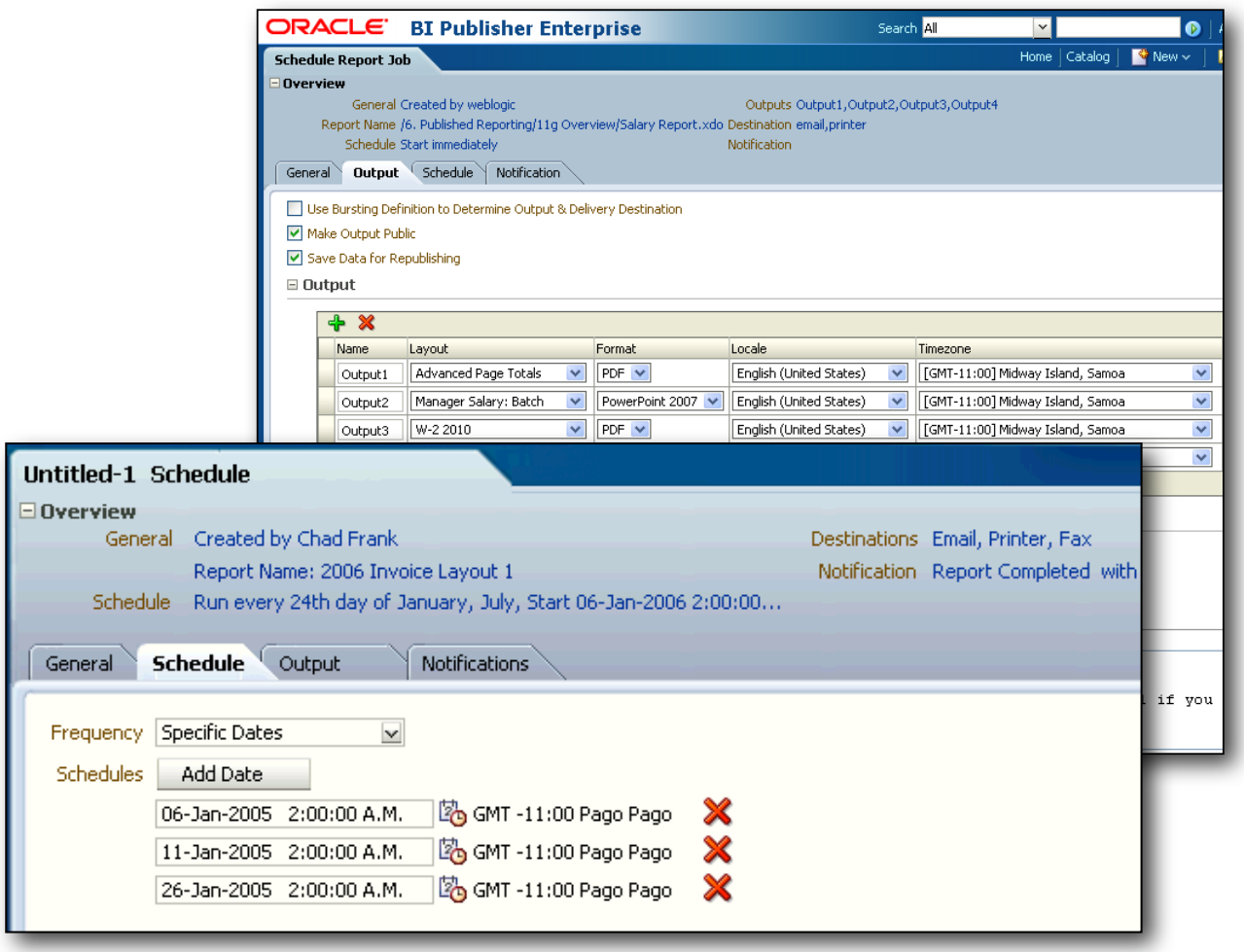
Creating a Federated Data Model

Additional BI Publisher 11g Innovations / New Features

- Scheduler Enhancements
- PDF Enhancements
- Fusion Middleware Security / Monitoring Integration
- JDeveloper and ADF Integration

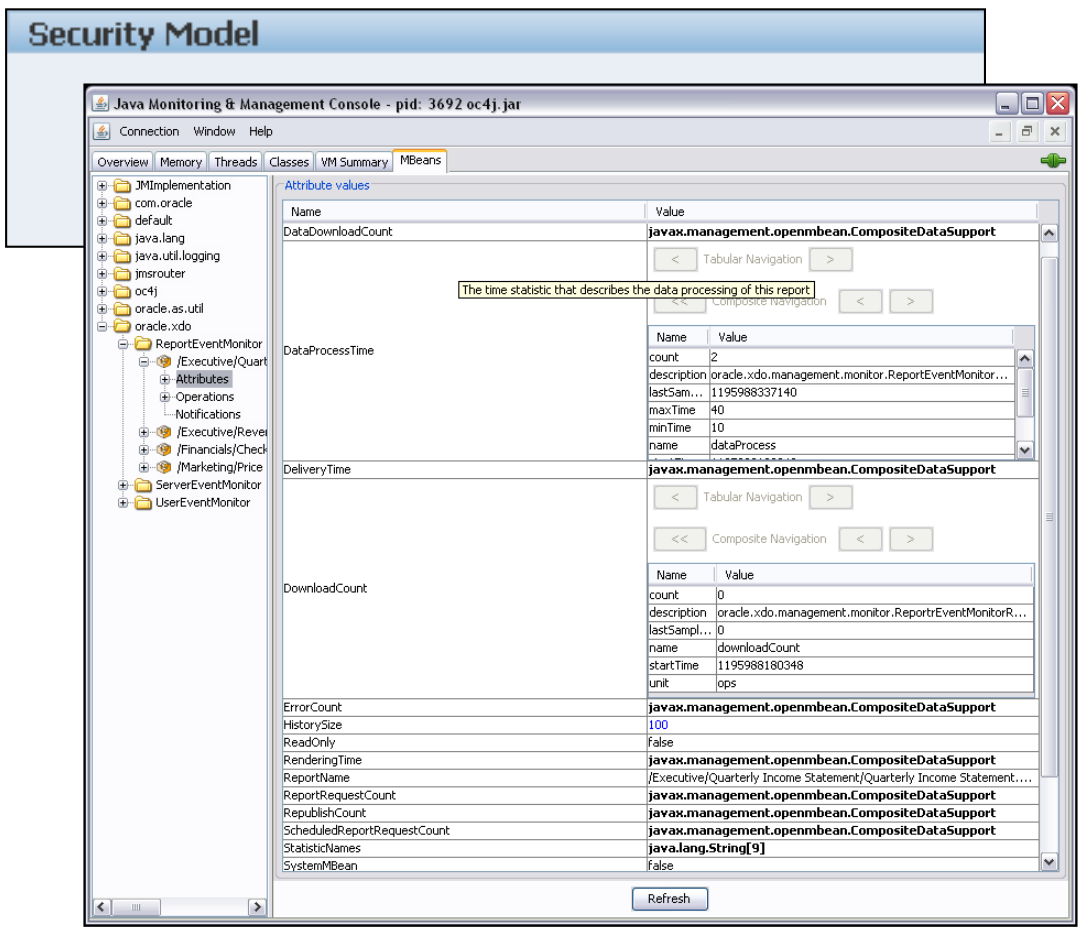
Scheduler Enhancements

- Recurrence patterns
  - Hourly
  - Annually
  - Specific Dates
- Multiple outputs
- Job & History Management
- Send from History
- Dedicated Schedule & Delivery Servers



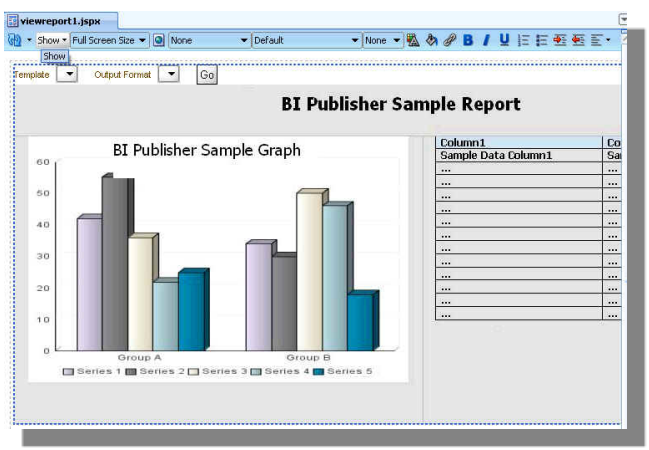
Integration with FMW11g Infrastructure

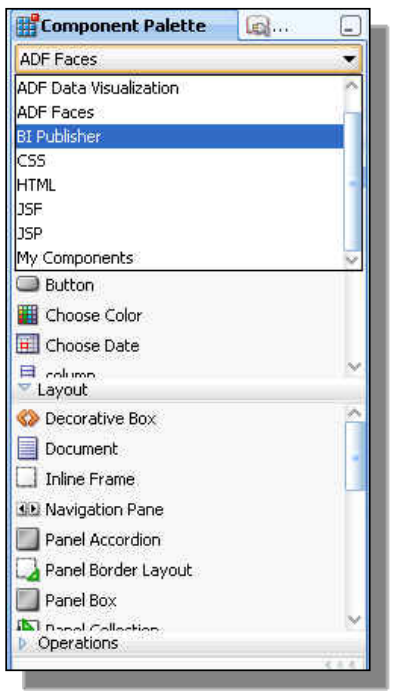
- Oracle Fusion Middleware Security
  - Standalone (WLS LDAP)
  - Leverage AD/OID etc
  - Shared with OBIEE
- Performance Monitoring
- Logging and Error Registry
- Audit Trail
- Process Control
  - OPMN
  - Fusion Middleware Control

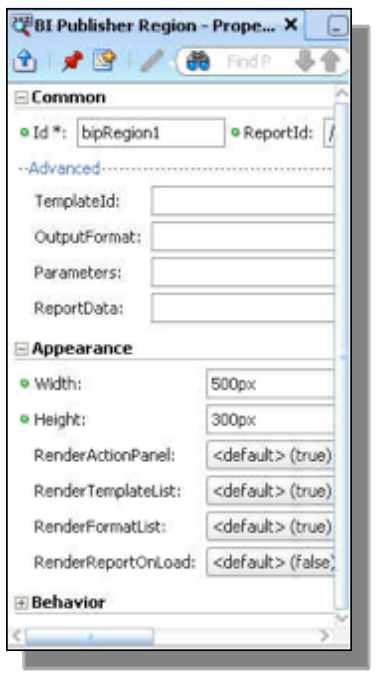


JDeveloper and ADF Integration

- BI Publisher ADF components in JDeveloper
- Use JDeveloper to build ADF applications with BI Publisher reports
- Use ADF View Objects as report data source







Summary

- BI Publisher 11g has a wide range of new features and improvements
- Significant UI overhaul to make consistent with FMW11g and OBIEE 11g
- New Data Modeler and support for graphical definition of data templates
- New Online Layout Editor and .xpt template format
- New Interactive Viewer and Event Framework for Qlikview-style analysis
- Incremental improvements to PDF output, distribution, scheduling etc
- For more details, check out http://www.rittmanmead.com/blog

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Oracle Business Intelligence Masterclass

Enhancements to Oracle BI Publisher 11g

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