

2009 SAP BusinessObjects USER CONFERENCE

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Xcelsius Essentials

Session Code: 1202

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Agenda

- Introduction
- Design on a Dime
- Basic Training
- Control Theory
- Adding Depth
- Refresh, Rinse and Repeat
- The Big Debut
- Concluding Remarks

Introduction



Introduction



Introduction



Introduction

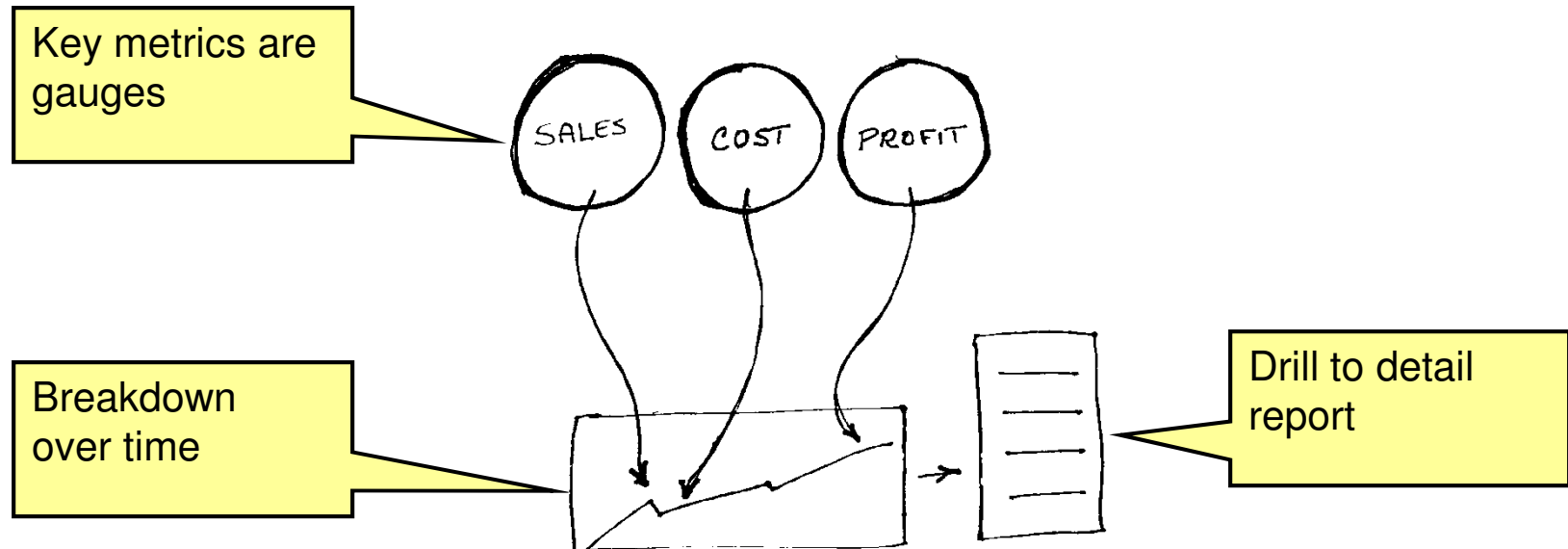


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Design on a Dime

- Dashboards should be sketched and discussed first!
 - Paper and ink are cheap - development time is not



Design on a Dime

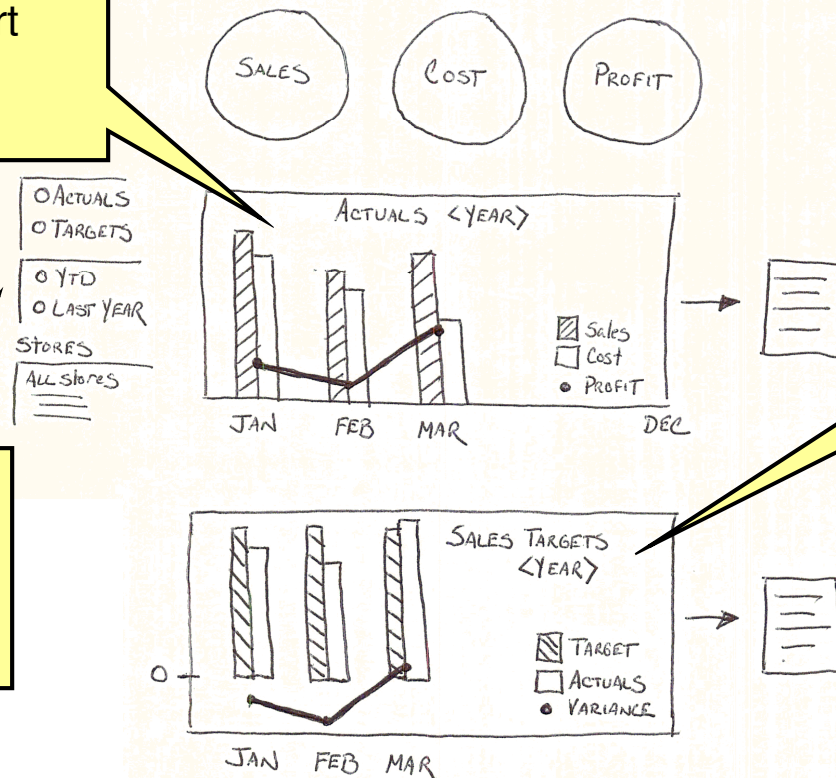
- The right time to ask these questions:
 - What time frame should the data represent?
 - Today, Yesterday, WTD, MTD, YTD, ...
 - Are the metrics related in some manner?
 - Where is the data coming from?
 - Is data available in the form the dashboard will need?
 - Are there other desired ways of monitoring these metrics?
 - By region, division, product line, ...
 - Should everyone see the same data at the same level?
 - Security by viewer, by department, ...
 - Are there goals or targets to hit?
 - What determines a good vs. bad value?
 - How big will your dashboard be (screen real estate)?

Design on a Dime

- The revised drawings ...

Combo chart reflects interaction

Controls allow user to adjust type, time, and store

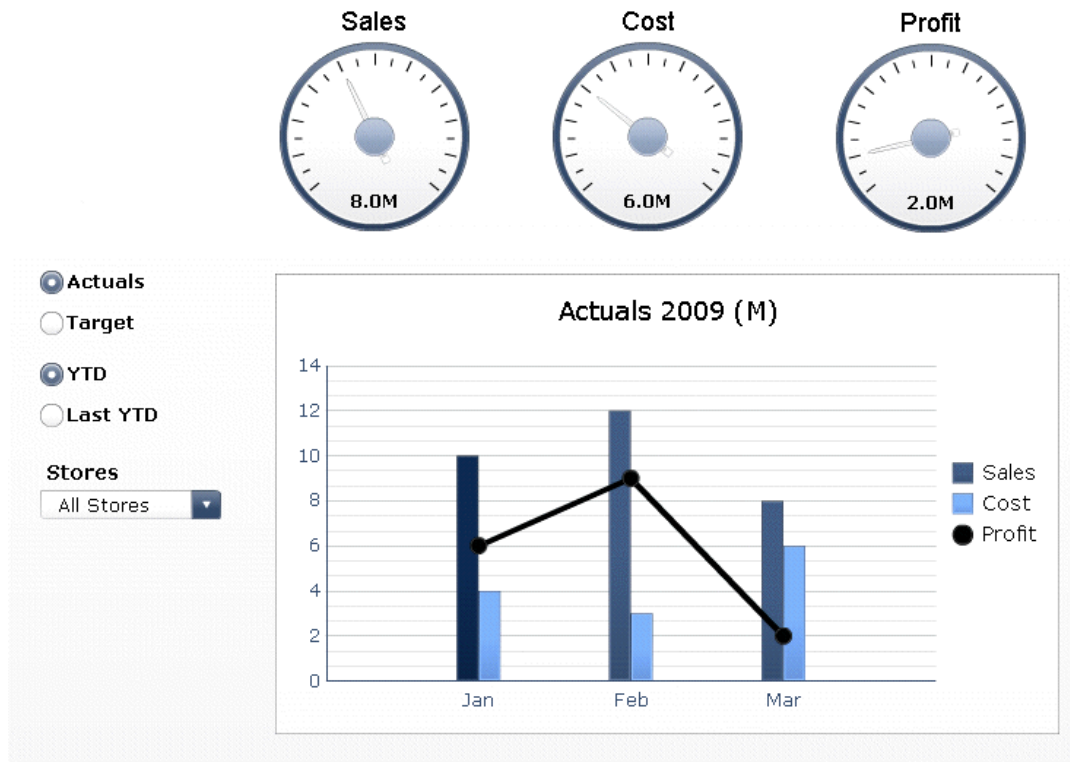


Target vs actuals can be compared by month

Drilling allowed on data points to detailed reports

Design on a Dime

- Mockup your proposed solution
 - This should increase user acceptance
 - Users can play with a simulated model
 - Expectations / additional requirements can be refined



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Basic Training

- Xcelsius dashboards are really “movies”
 - Implemented as Macromedia flash files
- This format can be viewed in a variety of ways ...
 - Through a web browser
 - As an e-mail attachment
 - Embedded within another document
 - Microsoft Word, Powerpoint, ...



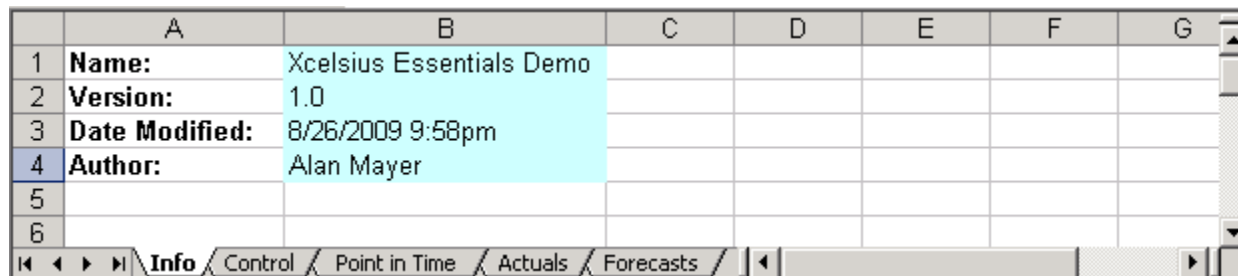
Basic Training

- Every Xcelsius model is based on Excel workbook logic
- In Xcelsius 2008, that logic is part of the model
 - No external Excel workbook required to be imported
 - Data, formulas, and formatting are included
- Knowing how to prepare that workbook will be essential



Basic Training – Workbook

- Use multiple spreadsheets to separate information
 - One tab for overall control
 - One tab per major visualization
 - Keep the most important information to the upper left corner
 - Good advice for control information
 - Designers can find it easily without scrolling



The screenshot shows a portion of an SAP BusinessObjects workbook. The visible area includes a grid with columns A through G and rows 1 through 6. The data in the grid is as follows:

	A	B	C	D	E	F	G
1	Name:	Xcelsius Essentials Demo					
2	Version:	1.0					
3	Date Modified:	8/26/2009 9:58pm					
4	Author:	Alan Mayer					
5							
6							

Below the grid, a tab bar is visible with the following tabs: Info, Control, Point in Time, Actuals, and Forecasts. The 'Info' tab is currently selected. Navigation arrows are present on the left and right sides of the tab bar.

Basic Training – Workbook

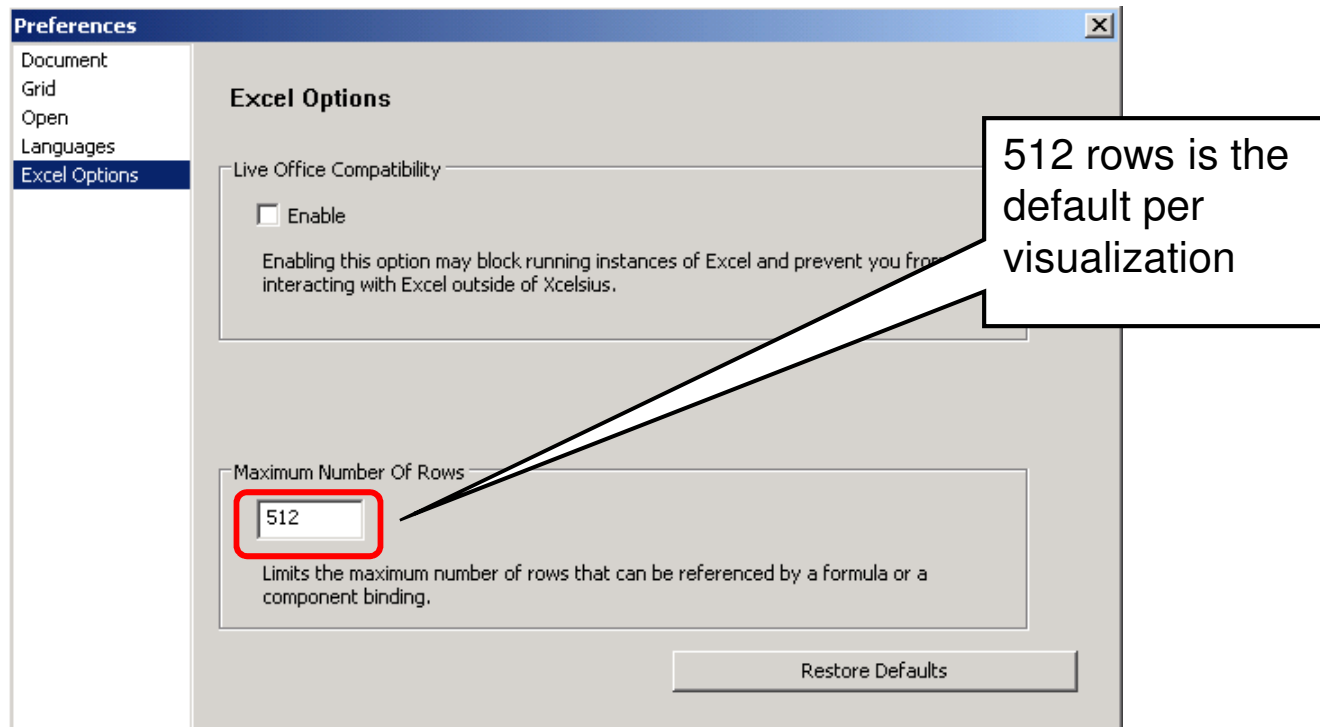
- Format ranges depending on their use
 - Choose colors for raw data, selected data, formulas
 - Use labels to clearly designate how those cells/ranges are used
 - The Selected Row below is shown for illustrative purposes
 - This row will come from the transpose of store against

	A	B	C	D	E	F	G	H
1	Legend	Raw Data						
2		Selected Data						
3		Formulas						
4								
5		Selected Row						
6		Raw Data	Year	Month	Store	Revenue	Cost	Profit
7								
8								

Info / Control / Point in Time / **Actuals** / Forecasts

Basic Training – Workbook

- Don't overload the workbook with data
 - Pre-aggregate data prior to loading Xcelsius
 - Xcelsius cannot handle large row sets well



Basic Training – Workbook

- Reduce processing within Xcelsius
 - Carefully use Xcelsius functions and formulas
 - Over 160 Excel functions have been converted to Actionscript
 - Not all Excel functions have been converted
 - Additional processing by Xcelsius may slow response time
 - Some transformation may be needed for certain visualizations
 - Common functions that won't break the bank:
 - VLOOKUP / HLOOKUP
 - MATCH
 - IF
 - INDEX / OFFSET
 - Some experts would disagree, but think about it
 - Formulas using functions can't be reused
 - Process data PRIOR to arrival at the dashboard
 - Data warehouses / marts / summary tables are essential

Basic Training - Workbook

- Demonstration #1
 - Create a workbook structure for this project

Basic Training - Visualizations

- Components to visualize data include:

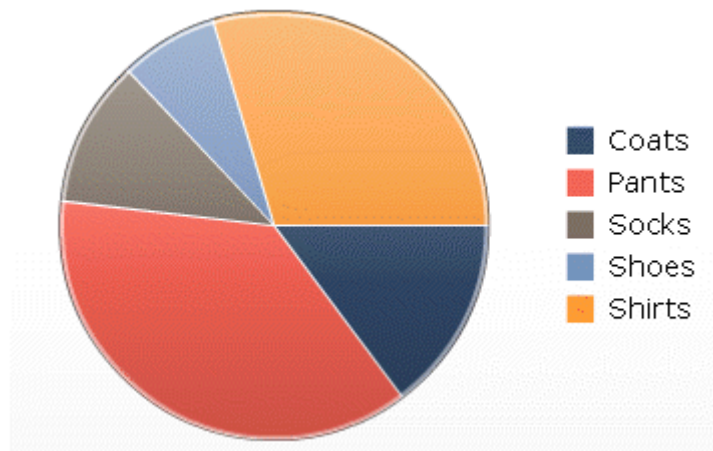
- Charts
- Gauges
- Cells
- Tables
- Maps

NOTE:

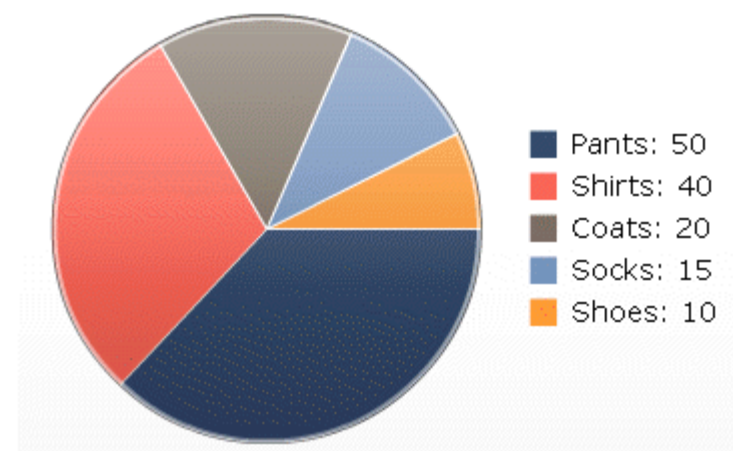
We'll focus on the first four for this presentation, and be selective about which components are shown.

Basic Training - Visualizations

- Pie charts
 - Shows the how values are distributed
 - Ordering slices adds more meaning
 - Expensive in terms of space
 - Bar charts may be a better alternative

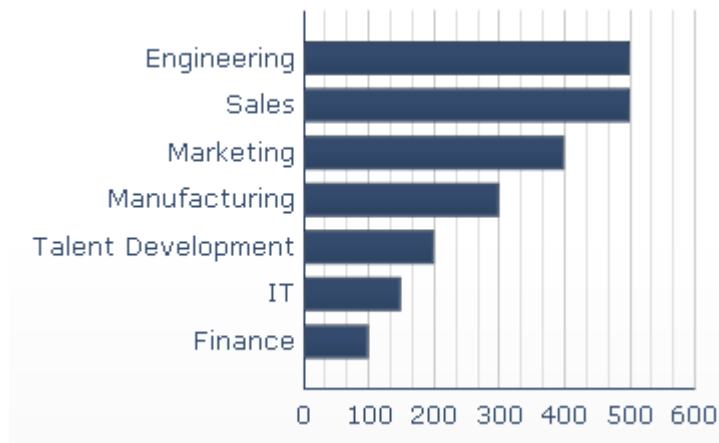


vs



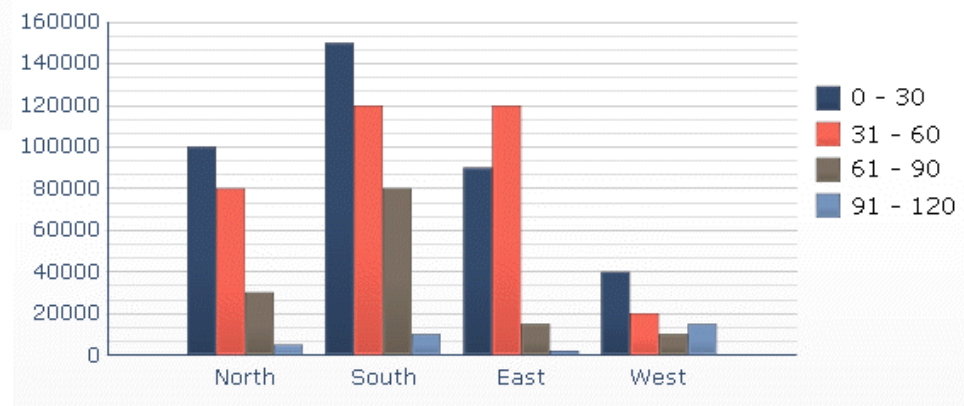
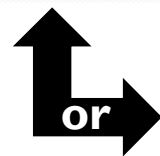
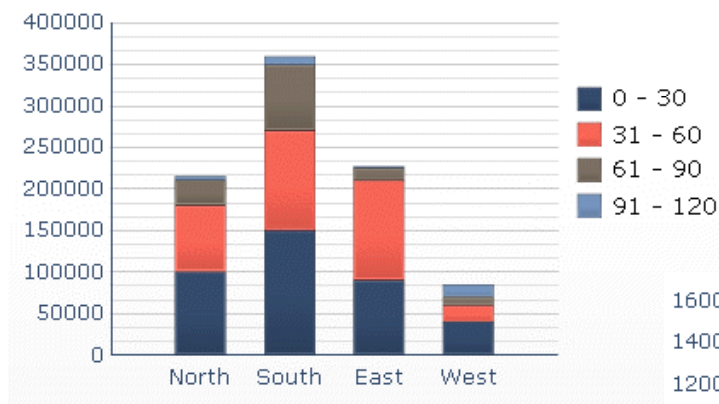
Basic Training - Visualizations

- Column/Bar charts
 - Compare one or more metrics over a set of values
 - These values are usually not related
 - Departments: Development, Service, Support (Nominal)
 - Ordered set of values (Ordinal)



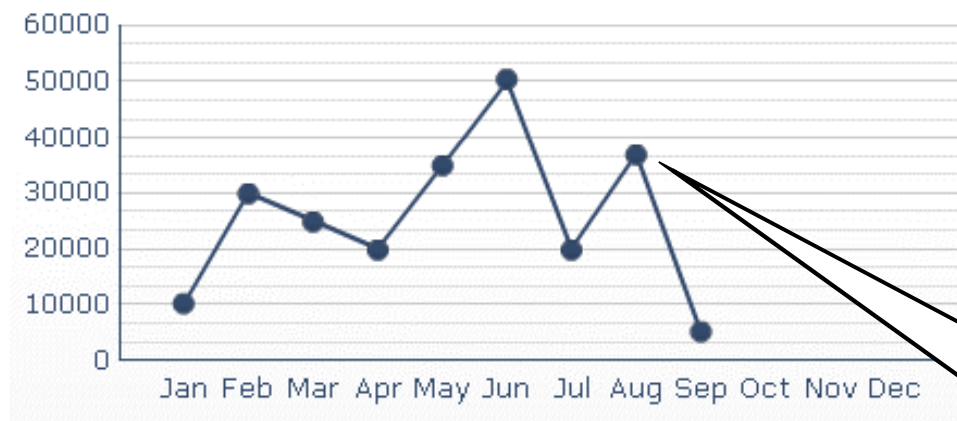
Basic Training - Visualizations

- Stacked Bar charts
 - Shows multiple instances made up of several parts
 - Hard to compare values of parts
 - Ordered bar graphs may do a better job



Basic Training - Visualizations

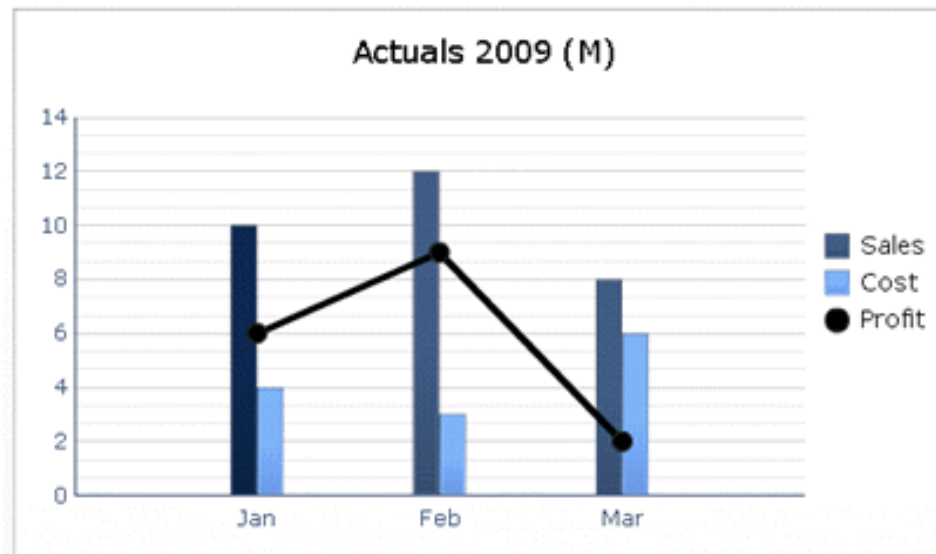
- Line charts
 - Show trends over time
 - Ideal for displaying values across equal intervals



Great for spotting trends, but not as good for highlighting individual values

Basic Training - Visualizations

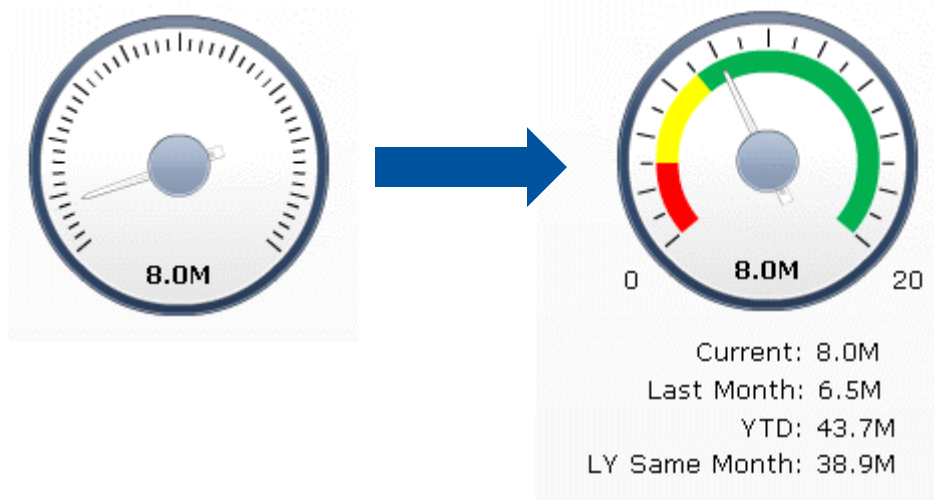
- Combination charts
 - Bar and line chart combined
 - Best aspects of both charts apply
 - Length of bars highlight individual values
 - Line indicates trend



Basic Training - Visualizations

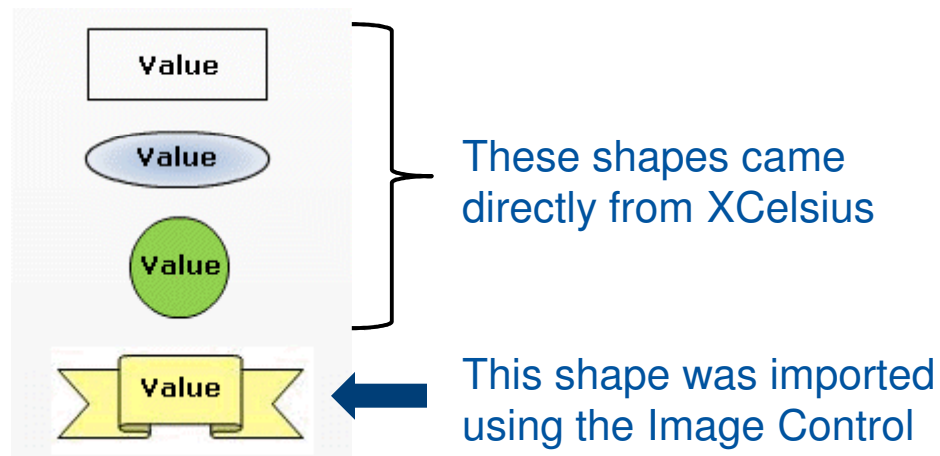
■ Gauges

- Highlight individual metric values
- Takes up a lot of screen real estate
- Best when additional information is added
 - Alerts for good vs. bad values
 - Text cells for other interesting, related information



Basic Training - Visualizations







- Cells
 - Used to display additional information as text
 - Doesn't have to take the form of a box



Basic Training - Visualizations

■ Tables

- Great for representing additional detail
- Information in Excel ranges can be exposed
- Could represent information in a compact format
 - Top/Bottom 10 lists
 - Project schedules / milestones
 - Tabular alerts

Consolidated Statement of Income			
<i>Company ABC (Thousands \$)</i>	<i>Q4/06</i>	<i>Q4/07</i>	<i>Variation</i>
Net revenues	\$4,000	\$5,800	45.0% 
Cost of sales	\$1,789	\$2,500	39.7% 
Research and development	\$500	\$750	50.0% 
Marketing, general and admin.	\$470	\$650	38.3% 
Other Expenses	\$23	\$50	117.4% 
Operating costs and expenses	\$2,782	\$3,950	42.0% 

Basic Training - Visualization

- Demonstration #2
 - Add gauges and charts to the dashboard

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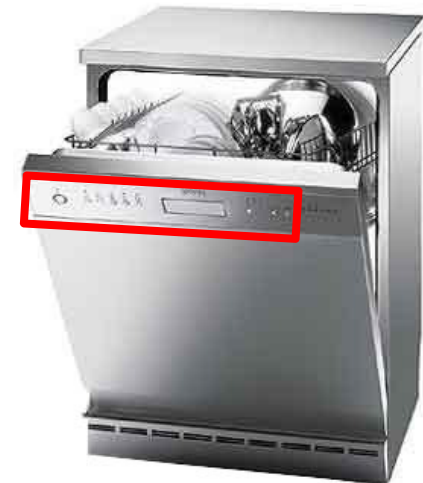
Control Theory

- How will users interact with your dashboard?
- Xcelsius components allow this to happen
- This section will discuss your options
- As with charts, not all controls will be discussed
 - Only the most frequently used will be highlighted
 - Why? That pesky 45 minute presentation constraint



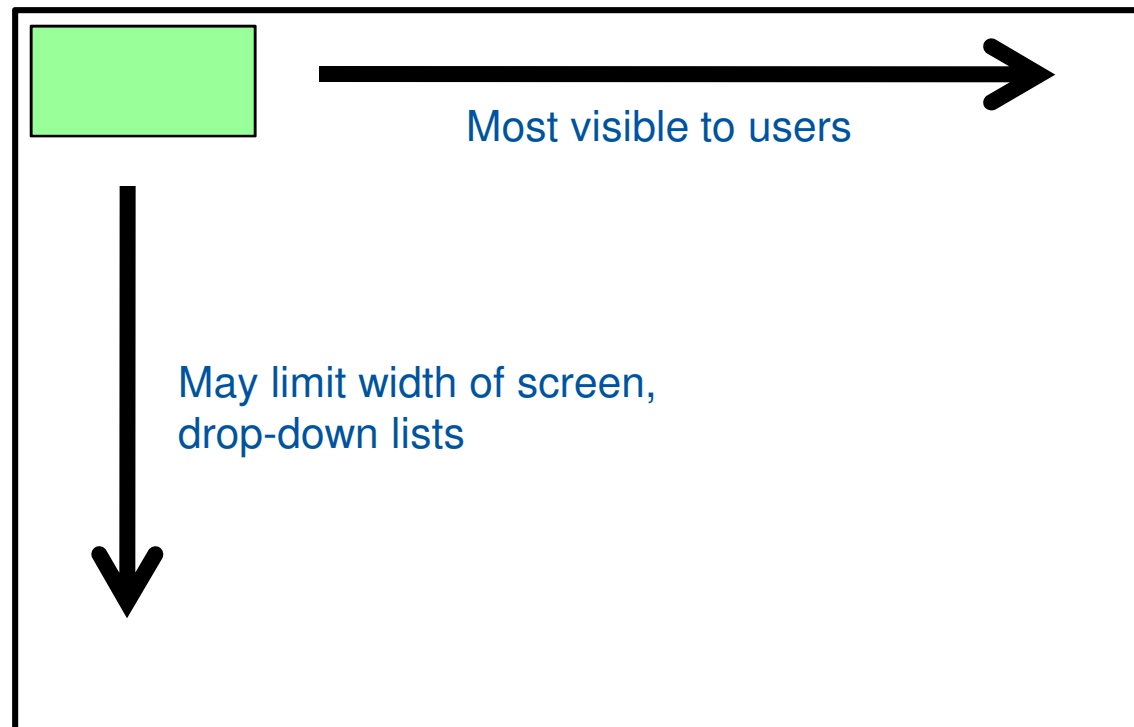
Control Theory - Layout

- Consider the layout before getting too deep ...
- How do most users access controls today?
 - Microwave
 - Dishwasher
 - Radio



Control Theory - Layout

- Don't scatter control over the dashboard
- Consider a **control panel**
- Where to place that panel?



Control Theory - Selectors

- Selectors allow users to directly alter the display
 - Could provide a more detailed view of certain metrics
 - May allow an alternative view or scenario
 - Could constrain the timeframe involved
- Xcelsius provides many selectors for this purpose
- Consider the most commonly used:
 - Check boxes
 - Radio buttons
 - Combo box
 - Label-based menu
 - List box

Control Theory - Selectors

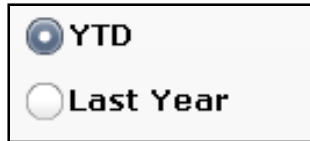
- Check boxes
 - Used to include/exclude conditions
 - Not exclusive
 - More than one box can be checked
 - Each box is a selector

<input checked="" type="checkbox"/>	0 - 30 Days
<input checked="" type="checkbox"/>	31 - 60 days
<input type="checkbox"/>	61 - 90 Days
<input type="checkbox"/>	91 - 120 Days
<input type="checkbox"/>	Over 120 Days

Control Theory - Selectors

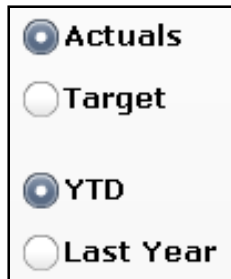
- Radio buttons

- Allow one value from a set of options (buttons)
- Exclusive – only one button can be selected



☒ YTD
☐ Last Year

- Groups of radio buttons *could* act like check boxes
 - Each group of buttons functions as a check box
 - No optional (non-selected) state unless you provide it



☒ Actuals
☐ Target
☒ YTD
☐ Last Year

Control Theory - Selectors

- Combo box
 - Very compact way of displaying a list
 - Values are displayed when selected
 - Only one value may be selected
 - Rolls back up to selection when finished

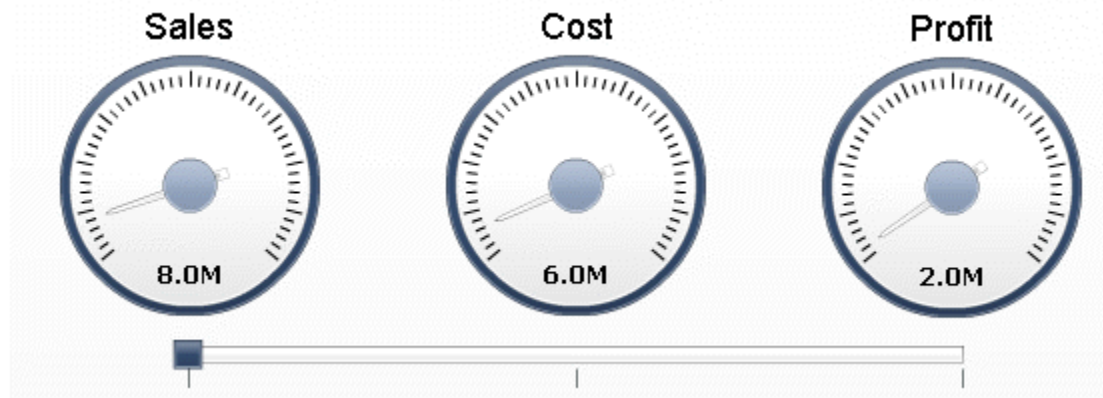


Control Theory - Selectors

- Label-based menu / Sliders
 - Used to represent tabs near the top of a dashboard
 - One way to provide the look/feel of additional pages



- If the context (name) is already being provided, try a slider



Control Theory - Selectors

- List box
 - Displays a list like the combo box but does not roll back up
 - Takes much more screen real estate
 - List stays open
 - Never collapses



Control Theory - Selectors

- The theory behind all controls
 - User select a value using any of the previous controls
 - That value is recorded within the embedded Excel workbook
 - Other parts of the dashboard respond to that value
- How does the dashboard automatically respond?
 - You'll find out in the next section ...

Control Theory

- Demonstration #3
 - Add controls for time, type, and store
 - Don't worry about activating the store control yet

Agenda

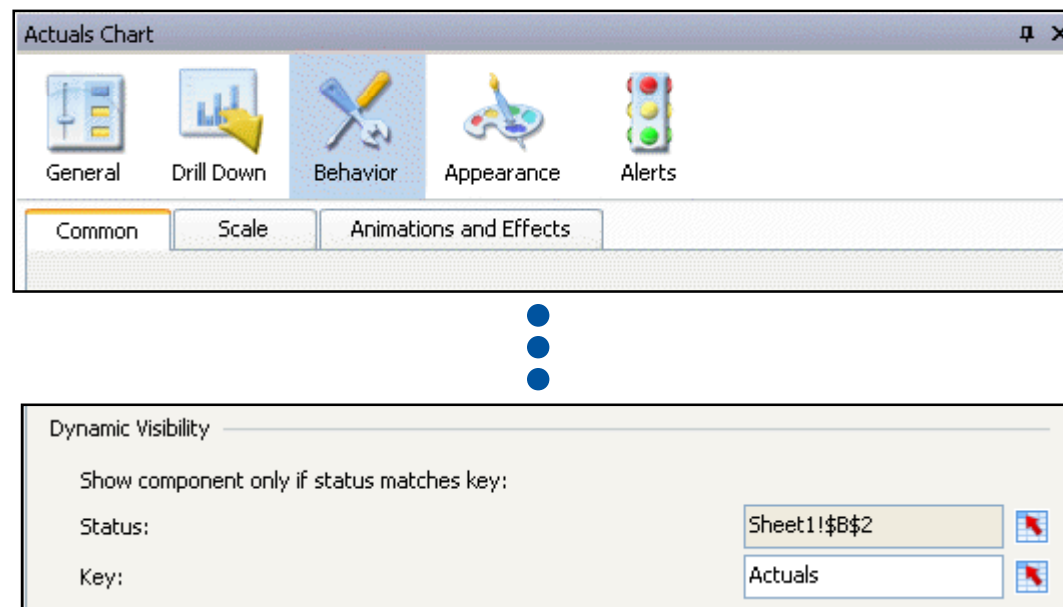
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Adding Depth

- Dashboards are much more powerful built on layers
 - Layers represent different views of the data
 - The visibility is controlled by controls previously discussed
 - This concept is known as **DYNAMIC VISIBILITY**
- Alerts can bolster existing visualizations
 - Alerts adds the logic behind good / marginal /bad values
 - Good candidate for our existing gauges
- Drilling on existing data points can reveal the details
 - Existing reports can be refreshed in context
 - Context = Whatever was selected by the user

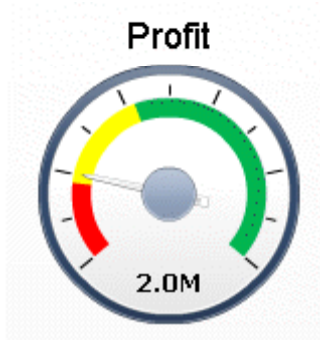
Adding Depth – Dynamic Visibility

- Dynamic visibility is part of most Xcelsius components
 - Usually activated through a control selector
 - The control places its selected result in a cell
 - Becomes visible when a particular value for that cell is entered



Adding Depth – Alerts

- Alerts add additional formatting to components
 - Tolerance zones must be established
 - Most tolerances are supplied by the business owner



Gauge 3

General Behavior Appearance Alerts

☒ Enable Alerts

☐ As Percent of Max Value [10]

☒ As Percent of Target: 6

☐ By Value

Alert Thresholds

☐ Use a Range

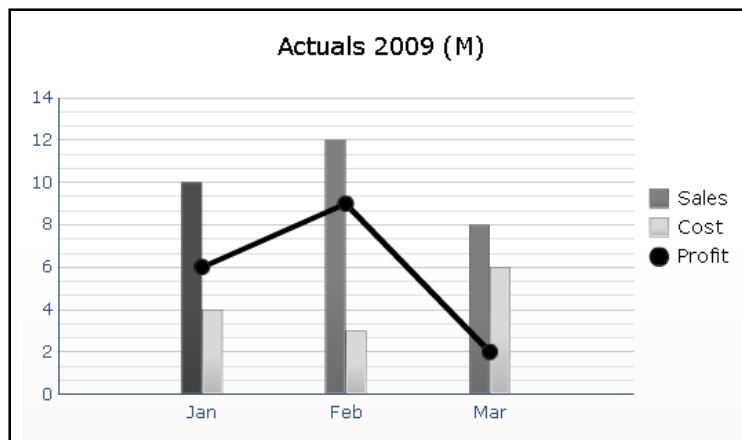
Enter a value Add

	From	To		
1	Minimum	30%		
2	30%	70%		
3	70%	Maximum		
No Data				



Adding Depth – Drilling

- Most components can be set up for drilling
 - Like dynamic visibility, part of its properties
 - Drilling on a portion of the component can cause:
 - Other components to appear via dynamic visibility
 - The source data to refresh
 - Detailed reports to refresh and appear



Actuals Chart

General Drill Down Behavior Appearance Alerts

☒ Enable Drill Down

Series Name Destination:
Sales

Insertion Type:
Value

Series: Sales, Cost, Profit

Source Data:
Destination:

Adding Depth

- Demonstration #4
 - Add dynamic visibility, alerts, and drilling capability

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Refresh, Rinse, and Repeat

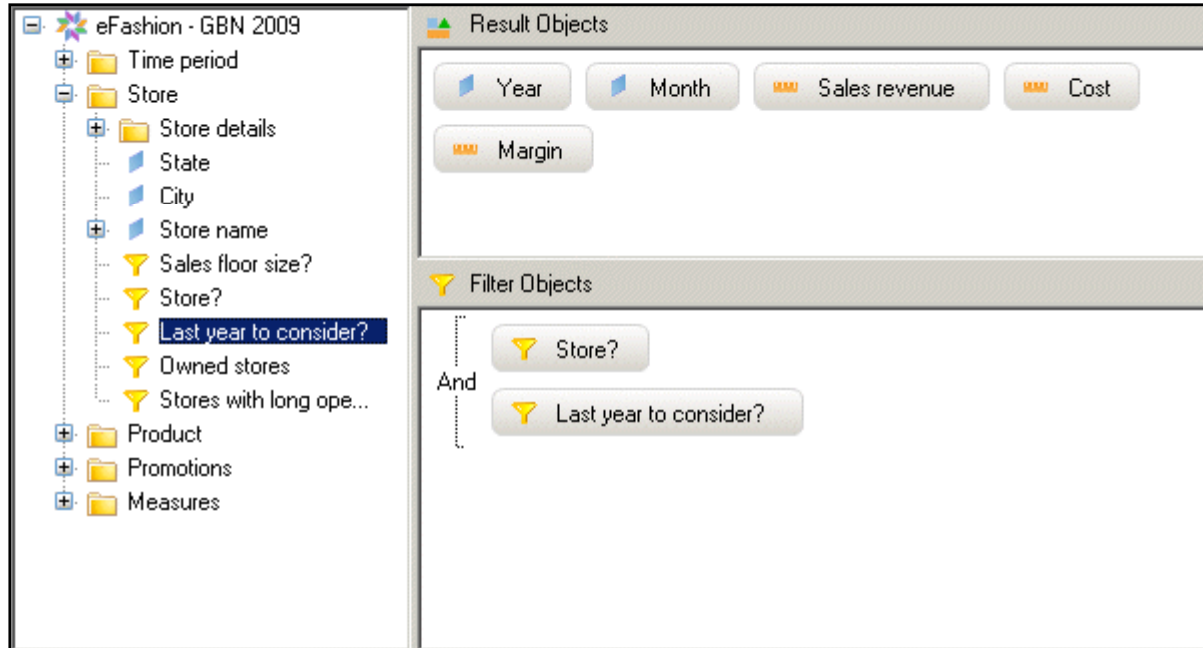
- Dashboards become stale when built on encapsulated data
 - It will not change until the designer modifies it
- Connecting a dashboard to live data sources is critical!
- Xcelsius offers several connection methods:
 - XML data feeds
 - Excel 2003 data maps
 - XML data connection
 - Flash variables
 - Live Office connections
 - Web services
- We will focus on the last method for this presentation

Refreshing using Web Services

- Query as a Web Service (QaaWS) offers huge advantages
 - Build Webi-like queries that are stored on the server
 - Reuse universes that have been already created
 - In Version 3.1, these queries can be grouped in folders
 - Linking them back to Xcelsius dashboards is easy
 - QaaWS queries can also take PARAMETERS
 - This is the missing link between our controls and retrieved data

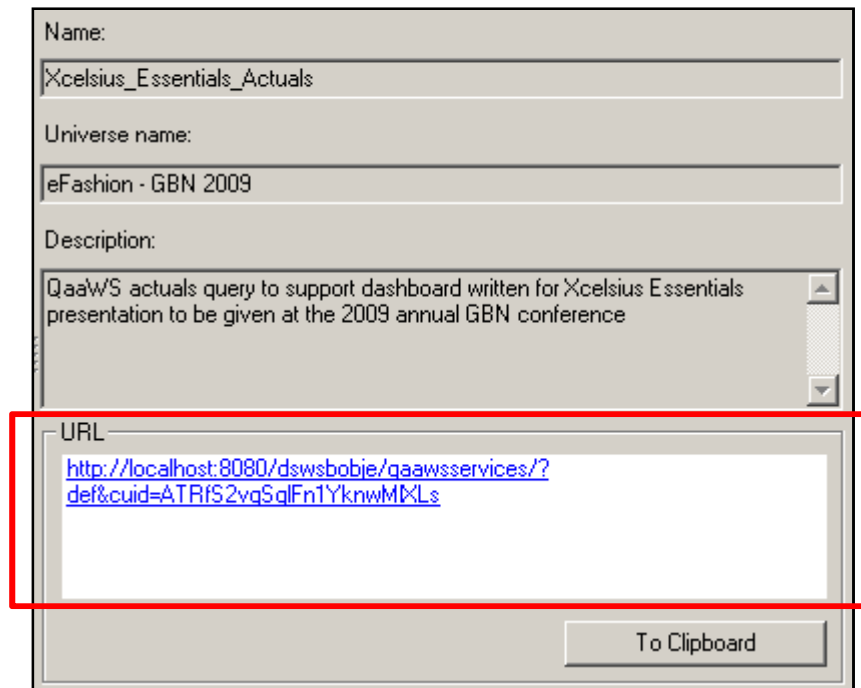
Refreshing using Web Services

- Step 1: Build the query
 - Use the Query as a Web Service editor



Refreshing using Web Services

- Step 2: Link the query back to your dashboard
 - Copy the URL from the QaaWS editor
 - Tip! – Make this URL a relative address (no server name)
 - Helps when promoting the dashboard using Lifecycle Manager



The screenshot shows a web application interface for editing a QaaWS query. It includes fields for Name, Universe name, and Description. The URL field is highlighted with a red rectangle, and a 'To Clipboard' button is located at the bottom right of the form.

Name:
Xcelsius_Essentials_Actuals

Universe name:
eFashion - GBN 2009

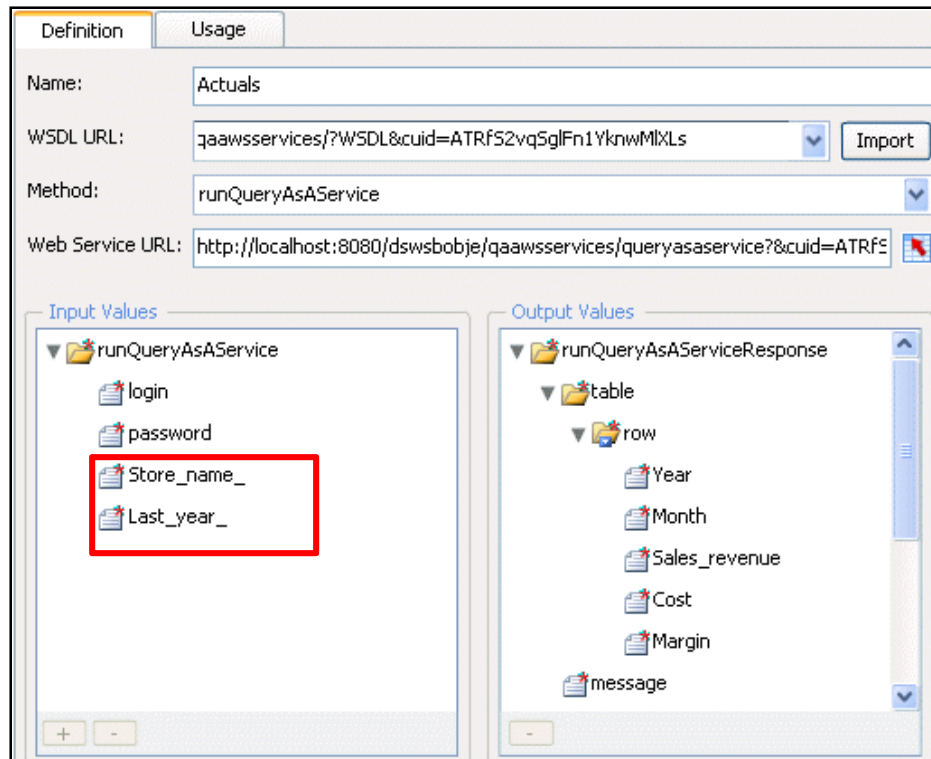
Description:
QaaWS actuals query to support dashboard written for Xcelsius Essentials presentation to be given at the 2009 annual GBN conference

URL
<http://localhost:8080/dswebobje/qaawsservices/?def&cuid=ATRfS2vqSqlFn1YknwMkLs>

To Clipboard

Refreshing using Web Services

- Step 3: Code query inputs / outputs
 - Query inputs (parameters) will usually come from controls
 - Query output will replace stagnant data in model



Refreshing using Web Services

- Demonstration #5
 - Add QaaWS queries to replace existing data

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The Big Debut

- The dashboard can now be shared with adoring fans
- What delivery options do you have?
 - Deliver via e-mail
 - Embed in another document
 - Port to BusinessObjects Enterprise
- We'll focus on the last option ...

The Big Debut

- A framework should be established in BO Enterprise
 - Framework = pages and a menu system
- This can be easily created using Dashboard Builder
- Additional advantages:
 - QaaWS queries no longer prompt for login/password
 - BusinessObjects variables can be used in queries
 - BOUSER for user-secured queries
 - The dashboard application and menus can be secured

The Big Debut

- Steps for adding your dashboard to BO Enterprise
 - Step 1: Create the dashboard application
 - Step 2: Create the menus / submenus
 - Step 3: Export the Xcelsius dashboard to Enterprise
 - Make sure to export as a Macromedia Flash file (.swf)
 - Step 4: Navigate to the desired dashboard page
 - Step 5: Add the Xcelsius flash file

The Big Debut

- Demonstration #6
 - Export your dashboard to the BusinessObjects Enterprise Portal

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Concluding Remarks

- Creating a workable dashboard in Xcelsius is easy
- What takes more time is locating and transforming dashboard data
 - Dashboard users expect minimal delay between requests
 - 2 – 3 seconds is the norm
 - Transactional queries may take a few minutes
 - Data to be used may need to be “cleaned”
 - Data may be partially correct
 - Existing reports may disagree
- A dashboard project encompasses all of the above
 - Dashboard AND the data displayed

Questions?

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SolidGround
Technologies

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