Applies to:
SAP BI 7.0 / SAP NetWeaver 2004s. For more information, visit the Business Intelligence homepage.

Summary
This article will provide possible approaches to design and implement dashboards in SAP BI using Web Application Designer (WAD).

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Created on: 27 March 2009

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Introduction

Dashboards are fast becoming the "Must Have" BI technology requirement for Management & business Users as it serves as Single Screen for effectively tracking KPI's (Key Performance Indicators). Designing an effective Management dashboard is more challenging than it might appear due to the fact that large amounts of business information are being compressed into a small visual area. Every dashboard component (Graph, Table etc.) must effectively balance its share of screen with the importance of the information it is imparting to the viewer.

Definition of Dashboard from an End User Point of View

A (single page) collection of role-specific internal and external data that provide information to facilitate rapid understanding and decision making through a guided sequence of suggested steps

Dashboard Designing Prerequisites

Following points explains the Information needed beforehand for designing effective Dashboards/Cockpits:

- What are your Key Performance Indicators?
- Which KPI's would you look at first?
- How would you visualize these KPI's?
- What Interaction would you need to understand context?

KPI – Key Performance Indicators

KPIs are the Indicators that drive businesses to take informed decision making. It indicates organization's performance and alerts the concerned department on existing business status.
Dashboard Designing Principles

Identify the area of need
- Geographical span – *E.g. Global, Regional, Personal*
- Functional Area – *E.g. Finance, Sales, Supply chain*
- Objective – *E.g. Comparison Actual Vs Target, Progress over years/months, Current Status*

List the key details that should be displayed
- Important Figures, values to display – *Actual%, Variance*
- Key reports – *Sales analysis, Variance report, Production efficiency*
- Dimensions/levels for display – *Org. hierarchy, Region, Time, Products*

Discuss design - Layouts, visualization
- Navigation – *Menu, Tabs, sub screens*
- Visualization - *Tables and Graphs*
- Thresholds/highlights – *exception indicators, representing in different colours*
- Specific requirements – *alerts, broadcasting/publishing*
Design & Implementation Approach for Dashboards

Following guidelines can be followed while designing dashboards –

Sources of data
- Identify sources/queries for all needed KPI's.

Underlying Data mart model
- Model cubes/KPI framework in EDWH for quick response of dashboards

Display features
- Designing web templates, components
  (Reusing components if available in sample templates)
- Designing tables and graphs for effective representation
Dashboard Floor Plan/Views
Following are some of the possible Dashboard Views that can be considered as a starting step for finalizing dashboard layout/features etc.

Two KPIs Trend Analysis

Sample Dashboard Output –

Best Suited For –

- Time Series Comparison for 2 KPI’s
- Regional/Reporting Unit wise/Company code wise Comparison of KPI’s
- KPI Performance Comparison (Current Year Performance Vs Last Year Performance)
KPIs Analysis in Tabs

**Best Suited For** –

- Analyzing related multiple KPI’s (e.g. Financial, logistics, marketing KPIs) from a single Dashboard Web Page
- Each TAB Output can be combination of Charts/Table/Dropdown Box etc
Portal – Management KPIs Monitoring

Sample Dashboard Output -

 ✓ Best Suited For –

- Main Page consisting of Links to either Dashboard or Reports
- Analyzing large number of logically grouped together KPI's from a single Web Page
**Exception Monitoring Dashboard**

- **Exceptions for Individual Countries**
- **Graphical Representation of KPI Performance for Countries**
- **Month on Month KPI Performance Monitoring for selected country**
- **Corresponding Tabular Data for selected Country**

**Best Suited For** –

- Exceptions for Geo-relevant data such as Sales by region
- Analysis and monitoring of Geo-relevant objects such as regions/countries/states
- Depending on the selection information presented in other tabs will change
Single KPI Trend Monitoring

Sample Dashboard Output -

Best Suited For –

- Trend Analysis of a KPI for a specific RU over a particular Time Period
- Reporting Unit Wise/Country wise Analysis of Tabular & Graphical Data
Geo relevant KPI Monitoring using MAPS

✔ Best Suited For –

- Geo-relevant KPI Analysis
- Month wise KPI Analysis for selected region
Best Practices

Reusability:

Customizing settings related to Web Items (Charts / Table etc.) can be reused across multiple Web Templates by saving them as “Reusable Web Items”. These Web items revert to a template character, which can be altered. In accordance with this character of the Web item, data binding is not stored. Web template-dependent settings are also not saved (for example, if you use the Button Group Web item and link commands to it). This would ensure standardized look & feel across different dashboards.

Following Example would help in understanding the importance & benefits of this functionality – Let us take the case of following Chart Type used in Dashboard –

From the Reusability perspective, following things can be reused –

1. Chart Title/Chart Axis Title properties – This could include font Type, font size, font color etc.
2. Chart Legends – This could include Chart legends positioning, its font type, font size etc.
3. Chart Properties – This could include any specific color combinations that are used across all the charts displayed in dashboards etc.

KPI Framework to ensure High Performant Dashboards

Since the Dashboards are being used by Top Management, high performance is very essential. Following guidelines related to KPI Framework could be followed while designing the dataflow/queries which are going to be integrated in dashboard –

1. Reporting on KPI Cubes storing only current year’s data. Historical data can be stored in separate cube to avoid performance issues.
2. KPI Cubes should contain aggregated and calculated keyfigures
3. KPI Cube should have few characteristics (5 or 6) & only a restricted set of data (6 month/12 month)
4. KPI Cube should have small facttable, less than 100k recs
5. Data in KPI Cube can come from SPOT or DM layer
6. For detailed information RRI to reporting area could be used
7. Aggregates could be build on KPI cubes to enhance performance further
8. Precalculation/OLAP caching of the dashboard could also be done to achieve quick response time
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