Advanced Dashboard Design in Oracle Business Intelligence 11g

Business intelligence dashboards are the interface through which executives, managers, and analysts interact and understand organizational data. If data warehouses comprise the raw ingredients of analyses, dashboards represent the plating and dining experience. While technologists often focus on other aspects of system design, the experience of users ultimately determines the value of the system.

We use the following definition to understand not only what a business intelligence dashboard is, but also how it differs from other dashboards.

> *A Dashboard is a visual presentation of current summary information needed to manage and guide an organization or activity.*

While BI dashboards may share some similarities with instrument panels in vehicles and large mechanical systems, they also differ in several important ways.

- No mechanical systems are needed to move indicators.
- Decisions are not typically made on a second-to-second basis.
- Data selection and filtering are hugely important.
- Dashboards are typically not single situation or single person devices.

Following are some important concepts for BI dashboard design.

- BI dashboards should be role-based.
- Data selection and filtering are extremely important.
- Dashboards support evidenced-based decision making.
- Shared understanding of business situation is a key benefit.
- Content may be individualized.
- Design should be standardized.

The above concepts are general and are important for the majority of large scale business intelligence dashboards and systems. Oracle Business Intelligence 11g has some important characteristics that specific and worth highlighting.

- OBI dashboards are designed with columns and sections (containers).
    - OBI dashboards dynamically adjust container sizes to accommodate query results.
    - Care must be taken when designing dashboard layouts to account for table and pivot table size changes.
    - Alignment, proximity, and container formatting are used to visually group BI content and organize data presentations for users.
- Presentation server is often separate from BI server.

    - The presentation server has its own separate cache.
    - Visualizations must be rendered by the presentation server.
    - Dense visualizations often require strong system performance.
- Dashboards are web-based and are viewed with browsers.
    - Useful to leverage many website design principles for dashboard design.
    - Structure and navigation design are important for large systems.
- HTML, XML, and Java coding skills are useful, but not required.
    - Large libraries of java-based visualizations can be used to extend OBI's native views, but may require custom coding and extra maintenance.
    - HTML formatting can elevate dashboard design.

Good BI dashboards are not passive viewing systems for users, but rather promote interactivity through a variety of methods.

- Promote user interactivity
    - Prompts
    - View and column selectors
    - Hierarchical column drills
    - Column sorts
    - Guided navigation and action links

Data transparency is often an overlooked aspect of superior BI dashboard design. Users should understand the source and filters of the data they are viewing.

- Promote data transparency
    - Prompts
    - Filter views
    - Narrative views
    - Master detail linking

Design standards and guidelines contribute in important ways to superior BI dashboards.

- Promote consistency in data interpretation.
- Promote speed in data interpretation.
- Aid in speed of development.
- Helps build coherence and common understanding across large organizations.

The following questions can serve as a starting point when beginning an OBI dashboard design project or when evaluating an existing business intelligence dashboard implementation.

- What context is being provided?
- What comparison is being made?
- Is the data selection process transparent?
- What visualization methodology best illustrates the key insights in this analysis?
- Are key insights exception related?
- Is a narrative explanation useful?