Chapter No.7
"Dashboard Look and Feel"
In this package, you will find:
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About the Authors

Xavier Hacking is a SAP BI consultant from Eindhoven, The Netherlands. He has a Masters' degree in Industrial Engineering and Management Science from the Eindhoven University of Technology. He has worked with a range of products from the SAP Business Intelligence portfolio, including SAP BW and SAP Crystal Dashboard Design (Xcelsius). His goal is to deliver business intelligence solutions that enable people to do their work in a better and more productive way.

In 2009, he started his blog HackingSAP.com (http://www.hackingsap.com/), which covers news, tips, guides, and other resources on SAP Crystal Dashboard Design and other SAP and non-SAP Business Intelligence tools. You can also follow Xavier on Twitter (http://www.twitter.com/xjhacking).

For More Information:
What is SAP Business Objects Dashboards (formerly Xcelsius)?

SAP BusinessObjects Dashboards (formerly Xcelsius) is a desktop dashboard and visualization solution that is a core part of SAP BusinessObjects BI 4.0. Once a user creates a dashboard model, it can be deployed in Flash format to Web portals, SAP environments, the SAP BusinessObjects BI platform, and desktop applications such as PowerPoint, Word, or PDF.

For Dashboard designers/developers, SAP BusinessObjects Dashboards allows for rapid development of data visualizations through a flexible and easy to use graphical user interface.

Using Xcelsius, we can accomplish the following:

- Create interactive dashboards that have a wow factor, unlike other dashboard tool competitors
- Connect dashboards to 12 different types of data connections
- Integration and interoperability with the existing SAP BusinessObjects BI Content
- We can embed our dashboards into a variety of different formats to allow for convenient sharing between users
- Ability to create custom add-on components using the Dashboard Design SDK

What This Book Covers

Chapter 1, Staying in Control: In this chapter, you will find best practices on using the SAP BusinessObjects Dashboards spreadsheet, the data model, and connections with the components on the canvas.

Chapter 2, Data Visualization: This chapter presents users with recipes on how to use different components such as charts, tables, and graphs to visualize data on the dashboard.

Chapter 3, From a Static to an Interactive Dashboard: This chapter shows users how to add interactivity to their dashboards by adding selecters, maps, buttons, drilldowns, and so on.

Chapter 4, Dynamic Visibility: This chapter shows users how to make components visible/invisible and provides scenarios where dynamic visibility becomes useful.

For More Information:
Chapter 5, Using Alerts: This chapter contains examples of different ways of showing alerts on a dashboard.

Chapter 6, Advanced Components: This chapter provides recipes on SAP BusinessObjects Dashboards more advanced components.

Chapter 7, Dashboard Look and Feel: In this chapter, learn how to tweak the visuals and user experience of the dashboard by customizing the look of components.

Chapter 8, Dashboard Connectivity: This chapter talks about the various options to connect a dashboard to external data sources.

Chapter 9, Exporting and Publishing: This chapter contains recipes on how to export SAP BusinessObjects Dashboards into different environments.

Chapter 10, Top Third-Party Add-ons: This chapter contains a tutorial section on some of the most useful third-party add-ons for SAP BusinessObjects Dashboards.

Appendix A, Real World Dashboard Case Studies: This appendix demonstrates how to implement various techniques covered in the book by creating two applications—a calculator that displays monthly payments of mortgage and Sales Profit Dashboard that displays the sales or profit of each state on the map.

Appendix B, Additional Resources—Supported Excel Functions and System/Software Requirements: This appendix lists some helpful online resources for further reference and some useful Microsoft Excel functions supported by SAP BusinessObjects Dashboards.
In this chapter, we will cover the following:

- Changing the look of a chart
- Adding a background to your dashboard
- Using color schemes
- Sharing a color scheme
- Working with themes
- Making component colors dynamic
- Using the panel container
- Using the tab set container
- Making tables look pretty
- Smart use of quadrants

**Introduction**

In this chapter, we will go through certain techniques on how you can utilize the different cosmetic features Dashboard Design provides, in order to improve the look of your dashboard. Dashboard Design provides a powerful way to capture the audience versus other dashboard tools. It allows developers to build dashboards with the important ‘wow’ factor that other tools lack. Let's take, for example, two dashboards that have the exact same functionality, placement of charts, and others. However, one dashboard looks much more attractive than the other. In general, people looking at the nicer looking dashboard will be more interested and thus get more value of the data that comes out of it.

For More Information:
Thus, not only does Dashboard Design provide a powerful and flexible way of presenting data, but it also provides the 'wow' factor to capture a user's interest.

### Changing the look of a chart

This recipe will run through changing the look of a chart. Particularly, it will go through each tab in the appearance icon of the chart properties. We will then make modifications and see the resulting changes.

#### Getting ready

Insert a chart object onto the canvas. Prepare some data and bind it to the chart.

#### How to do it...

1. Double-click/right-click on the chart object on the canvas/object properties window to go into **Chart Properties**.
2. In the **Layout** tab, uncheck **Show Chart Background**.
3. In the **Series** tab, click on the colored square box circled in the next screenshot to change the color of the bar to your desired color.
4. Then change the width of each bar; click on the **Marker Size** area and change it to **35**.

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For More Information:

5. Click on the colored boxes circled in red in the Axes tab and choose dark blue to modify the horizontal and vertical axes separately.

6. Uncheck Show Minor Gridlines at the bottom so that we remove all the horizontal lines in between each of the major gridlines.

For More Information:
7. Next, go to the **Text and Color** tabs, where you can make changes to all the different text areas of the chart.

**How it works...**

As you can see, the default chart looks plain and the bars are skinny so it's harder to visualize things. It is a good idea to remove the chart background if there is an underlying background so that the chart blends in better. In addition, the changes to the chart colors and text provide additional aesthetics that help improve the look of the chart.

**See also**

*Adding a background to your dashboard.*

**Adding a background to your dashboard**

This recipe shows the usefulness of backgrounds in the dashboard. It will show how backgrounds can help provide additional depth to objects and help to group certain areas together for better visualization.

**Getting ready**

Make sure you have all your objects such as charts and selectors ready on the canvas. Here's an example of the two charts before the makeover. Bind some data to the charts if you want to change the coloring of the series.
How to do it...

1. Choose **Background4** from the **Art and Backgrounds** tab of the **Components** window.

2. Stretch the background so that it fills the size of the canvas.

3. Make sure that ordering of the backgrounds is before the charts. To change the ordering of the background, go to the object browser, select the background object and then press the "-" key until the background object is behind the chart.

For More Information:
4. Select **Background1** from the **Art and Backgrounds** tab and put two of them under the charts, as shown in the following screenshot:

![Sales by Region and Pie Chart](image)

5. When the backgrounds are in the proper place, open the properties window for the backgrounds and set the background color to your desired color. In this example we picked turquoise blue for each background.

**How it works...**

As you can see with the before and after pictures, having backgrounds can make a huge difference in terms of aesthetics. The objects are much more pleasant to look at now and there is certainly a lot of depth with the charts.

The best way to choose the right backgrounds that fit your dashboard is to play around with the different background objects and their colors. If you are not very artistic, you can come up with a bunch of examples and demonstrate it to the business user to see which one they prefer the most.

**There's more...**

It is important to use backgrounds carefully and not to use them in the wrong places. A good reference that we recommend is *Information Dashboard Design* by Stephen Few. *Information Dashboard Design* is a great book that will guide you on the best dashboard design practices and when to use backgrounds.

For More Information:

Using color schemes

Dashboard Design conveniently has a set of built-in color themes that developers can use to instantly change the look of their dashboard. Using color themes helps provide consistent coloring among your objects and allows you to change the colors for multiple objects at a time without having to go into the properties of each object to make the necessary changes.

Getting ready

Have your set of objects that you want to change the colors for ready on the canvas. In this example we have the sales by region chart, a pie chart, and a set of underlying backgrounds that we want colors modified.

How to do it...

1. Click on the colors icon and make sure that Current Theme Colors is selected. The backgrounds will be grey and the charts bluish.
Dashboard Look and Feel

2. Click on the colors icon and select the Concourse color scheme.

How it works...

As you can see, the default color scheme initially looked kind of bland and the coloring for each series in the pie chart is very similar, making it tough to decipher between each of the series. Changing it to the Concourse color scheme lightens up the background considerably with a light bluish background which is easy on the eyes. In addition, the series on the pie chart are more easily distinguishable; however the blues in our opinion are still too similar. We can fix that by modifying the color scheme, which will be explained in the next recipe.

There's more...

Using a good coloring scheme requires a lot of trial and error and there are many best practices that need to be accounted for. For example, different series on a chart should be colored differently so that users don’t have to spend a lot of time figuring out which bar belongs to which series.

We also want colors that are soothing for the eyes. Colors that are too bright or too dark may cause strain to the eyes, thus making it more difficult to find information.
When going through color schemes, it is best to demo to the end users who will be using the dashboard and go with a coloring scheme that is most comfortable to their eyes, as it will allow them to find information more easily.

**Sharing a color scheme**

Developers may want to customize a dashboard's charts and objects to follow a company's coloring guidelines. Most likely, the company's coloring guidelines will not match any of the built-in coloring schemes, so we'll need a way to create a coloring scheme that we can re-use every time a new dashboard is built for the same company.

**Getting ready**

You must be able to view hidden files and folders in the `c:\Documents and Settings\your_user_id` folder. If you are a Windows Vista or Windows 7 user, you will need to be able to view hidden files and folders in `c:\Users\your_user_id`.

**How to do it...**

1. Click on the colors icon and select the **Create New Color Scheme** at the bottom of the list.

For More Information:

2. Change the background color to whatever color you want by clicking on the colored square.

3. Click on the **Charts** tab and change the **Series** color to something other than the default color.

For More Information:
4. Click the **Save** button when you are finished.

5. Your color scheme has now been saved and you can now transfer it to other computers. Copy the XML files of the theme that you want to share from the following two folders to the exact same directory in the destination computer. The XML filenames will have the same names as the files that you saved at the following location: `c:\Documents and Settings\your_user_id\Application Data\Xcelsius customThemes` and `c:\Documents and Settings\your_user_id\Application Data\Xcelsius customThemesAutoInfo`.

6. For Windows Vista and Windows 7, the directory path before Xcelsius will be: `c:\Users\your_user_id\AppData\Roaming\`.

For More Information:
How it works...

Every time you save a custom coloring scheme, it will create two XML files in the directories mentioned earlier. From there, you can easily share the coloring scheme with other developers or other machines that have Dashboard Design installed.

As you can see, once you have the coloring scheme XML files in place, you will be able to select them from the **Color Scheme Toolbar**.

Working with themes

Dashboard Design 2008 has a library of themes that developers can use to change the chart and object styles to the look that suits them most. The ability to select different themes is important because it gives developers more options on customizing the look of their dashboards to what fits best. There are eight themes that developers may choose from. In this recipe, we will be showcasing the default theme and two other themes.
How to do it...

1. Click on the **Themes** icon and by default, you will see that **Aqua** is selected.

2. Change the theme to **Aero**.
3. Change the theme to **Halo**.

![Dashboard Design screenshot]

**How it works...**

As you can see, Dashboard Design provides a large library of themes allowing you to customize the style of your backgrounds, objects, and charts. For example, some themes may have more gradient backgrounds and charts such as the Aero theme, whereas the Halo theme has a flat but bold look.

**Making component colors dynamic**

Dashboard Design 2008 allows users to fully control the coloring of their components based on whatever event they desire. For example, if a major alert were to happen I could dynamically change my background to red in order to signal an emergency. This is extremely useful because developers can not only dynamically control the color of bars on a chart but also the rest of the chart components such as the background and text as well.

**How to do it...**

1. On the cell highlighted in yellow E2, we have a **COUNTIF** statement that will set the bar color to red, if any of the regions has their number of items sold below 40. Otherwise the bar color will be set to blue as shown in the following screenshot:

For More Information:

2. On the chart properties go to the **Color** tab and click on the square colored box in the fill column. On the bottom of the color palette, choose the **Bind to Color** option and bind to the cell with the color control (E2, in our case).
3. Go to the **Text** tab of the chart properties and click on the color square of the **Chart Title**. Bind the color to the cell that controls the title text color (in our case, E3).

4. Change the cell from B2 to B5 to a value below 40 and verify that the **Bar color** and **Title color** are functioning correctly.
How it works...

In our example, we can easily control the coloring of our chart components with the help of some Excel formulas. Using this method, we are able to clearly alert users if something significant has occurred. For example, if it was critical that all of the regions surpass a particular threshold (40), we can send out a clear alert signal (title and bars red), if one of the regions fails.
There's more...

Because the dynamic coloring depends on Boolean logic, you'll need the aid of Excel formulas to determine which color is displayed. We recommend that you become familiar with Excel Boolean logic to fully utilize the functionality of dynamic coloring.

Using the panel container

The panel container component is useful if a designer thinks that a set of item(s) is too large for the canvas and wants to be able to scroll the inside of the canvas. A good example would be a scrolling set of charts. Let's say real estate on the dashboard was an issue and we had many charts that needed to be shown but it was not mandatory to show all charts on one view. If we put it in a panel container, we can scroll through each chart kind of like a slide show.

How to do it...

1. Select the Panel Container from the Containers tab.

2. Insert a set of charts (these can be any type of charts that you wish to insert) inside the panel container.

For More Information:
3. Shrink the panel container so that it doesn't take up too much real estate on the dashboard. You can do this by hovering your mouse to the edge of the panel and resizing from there.

How it works...

In our example, we were able to emulate a slideshow of charts. This is useful if the charts do not need to be visible in one screen all together and will allow designers to save on real estate.

For More Information:
There's more...

If you are putting multiple objects in a panel container you must make sure that the business is okay with the scrolling. In the majority of cases, it is best practice to have everything show up on the same screen without having to scroll. However in some cases such as a large table that may contain large report type information, we may have to resort to using the panel container in order to facilitate the best use of real estate.

Using the tab set container

The best analogy to a tab set would be the tabs that you see in Internet Explorer and Firefox. Before the advent of tabs, we would have multiple windows of Internet Explorers open, which was very cumbersome. With tabs we are able to flip through the different pages that you have opened very easily. Before Xcelsius 2008, developers who wanted to work with multiple pages on one dashboard needed to do a lot of work with dynamic visibility. With the tab set container, we are able to separate different pages within the dashboard very easily. This allows us to flip through pages that are independent of each other but related to the same topic without having to reload separate dashboards or set dynamic visibility for each page.

How to do it...

1. Select the Tab Set Container from the Containers tab.

2. In the Properties window of the canvas, you can rename the tab. In our example we named the first tab as Sales.

For More Information:
3. To add a new tab, press the + button on the top left-hand side of the canvas. It will then pop up a window that lets you name your tab. In our example, we named the second tab **Trend Analysis**, as seen in the following screenshot:

![Image of Trend Analysis tab](image)

4. The different tabs will be separated as different canvases on the object browser window. All components residing in each canvas will be as a child of the canvas on the object browser window.

![Object Browser](image)

**How it works...**

The tab set container is basically a set of canvas containers that hold your objects. The set of canvas containers are distinguished by the tab at the top of the main container. Users are able to switch through tabs at run time very easily. This emulates the tabs found on popular browsers such as Internet Explorer and Firefox.

**For More Information:**  
There's more...

When building tab containers, designers should be careful of having too many tabs or too many levels of tab hierarchies. It is recommended to keep the number of tabs in each level to a maximum of five.

For example, look at the following screenshot. If we have nine tabs, we can see that the dashboard starts becoming overwhelming and complex. It is also good to keep the number of hierarchies to a maximum of two. Again, we can see once we get past two hierarchies, it starts to become messy and users will have too many paths to choose from.

Finally, each additional tab means an additional page. With each additional page comes a set of components and charts which equate to a larger footprint. Dashboards with a larger footprint will take longer to load due to the size of the SWF file and performance will take a hit due to the number of objects.

![Dashboard Example](image)

Making tables look pretty

With Dashboard Design 2008, we are able to create tables that look just like a table in an Excel spreadsheet. Unfortunately, our everyday tables look quite bland. If we start off with a default spreadsheet table, it will look kind of like this:

For More Information:
It looks okay, but with the help of some Dashboard Design objects, we can spice it up to look much more attractive.

**Getting ready**

Prepare the data on your Excel spreadsheet and set up a table like in the previous image.

**How to do it...**

1. Change the theme to **Aero**.
2. Select the first Background object from the **Art and Backgrounds** tab from the **Category** window.
3. Place the background so that it is under the table.
4. Select the **Rectangle** object from the **Art and Backgrounds** tab and place it under the body of the table to give it a background color.

5. Select the **Rectangle** object from the **Art and Backgrounds** tab and place it on top of the header and give it a linearly gradient background color. This will be the background for the table title.

6. Select **Label** from the **Text** tab of the **Category** window. Center it on the title background to give the table a title.

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**How it works...**

As you can see, with the help of a few Dashboard Design components such as backgrounds, rectangles, and labels, we are able to spice up the look of a table and make it much more pleasing to the eye.

**See Also**

*Adding a background to your dashboard.*

**Smart use of quadrants**

It is very important when designing a dashboard to make it as easy to read as possible. In addition, we want to make a dashboard conform to how humans analyze a picture. A common concept is to move from the top left-hand side to the top right-hand side and then to the bottom. This is a flow that the majority of users are comfortable with.

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For More Information:

Now we bring in the concept of quadrants. It allows us to create groupings so that a user is not so overwhelmed when looking at the dashboard. Creating proper quadrants is very important and this recipe will give an example of the proper use of quadrants.

**Getting ready**

Gather the desired charts and selectors on your dashboard.

**How to do it...**

1. Set up your charts in a way where it is like four quadrants.
2. Selectors should be on the top left-hand side, if they control the whole chart.
3. Use backgrounds to help separate your quadrants.
4. Parent charts should be on the left-hand side or on top of the drill-down chart.
5. Charts that we want users to look at first should be at the top.
6. If possible, size all the quadrants equally.
7. Align the components neatly so that it is easier on the eyes when looking for different items.
How it works...

As you can see, when we group things into four quadrants, it is very easy to read the dashboard. In addition, we are comfortable with navigation, as we start at the top left-hand side. The drilldown is easy to understand and navigate as we have the parent chart on the left-hand side of the drilldown chart. Secondary information such as extra details should be on the bottom of the chart and not at the top, as users are interested in the highest level data first, when coming into a dashboard. Finally, it is very important to align everything neatly and size everything as equally as possible. This makes the dashboard much easier to read.

Now let's take an example—seen in the next screenshot—of a dashboard that is not set in quadrants and aligned neatly:

This dashboard is harder to read and navigate now, as things are not in quadrants. The drop-down selectors are on the bottom right-hand side, so we have to shift our eyes to the main parent chart diagonally whenever we make a change which is not very user friendly.

See Also

Adding a background to your dashboard.

In addition, for good dashboard layout designs you can read Information Dashboard Design, Stephen Few.
Where to buy this book


Free shipping to the US, UK, Europe and selected Asian countries. For more information, please read our shipping policy.

Alternatively, you can buy the book from Amazon, BN.com, Computer Manuals and most internet book retailers.