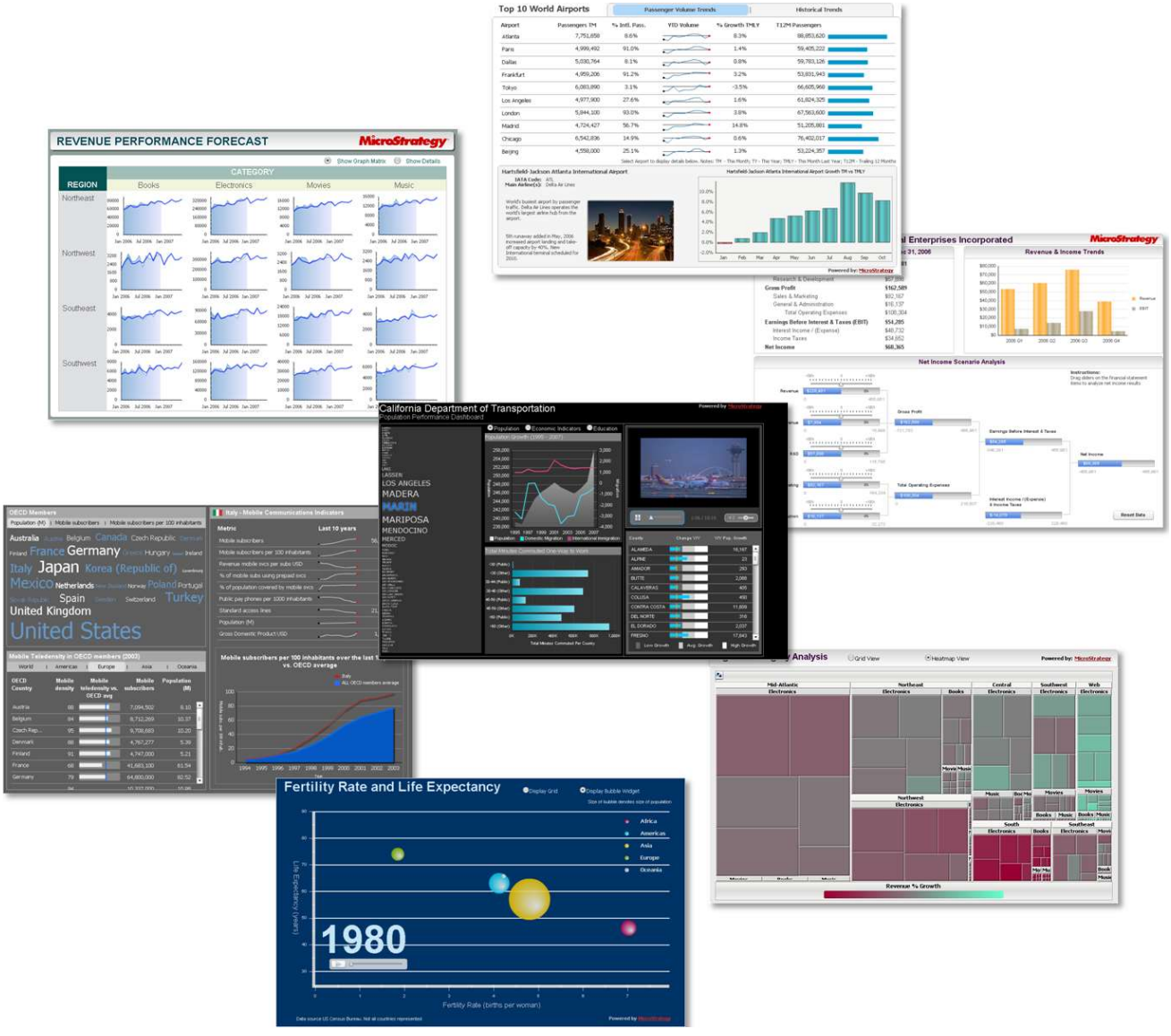
Exercise #1
Offline Dashboards with Advanced Visualizations



Exercise #1: Offline Dashboards with Advanced Visualizations

Objective

For this exercise, you will select one stand-alone dashboard to analyze offline. Review the information provided about the dashboard, analyze the data using the interactive controls available from the dashboard, and find the answers to the questions provided.

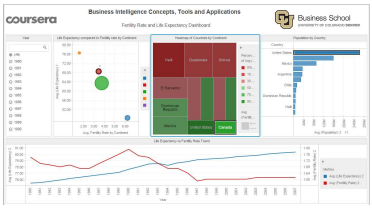
All the dashboards for this exercise are provided as link and access each one of them as required to answer the questions.

Introduction

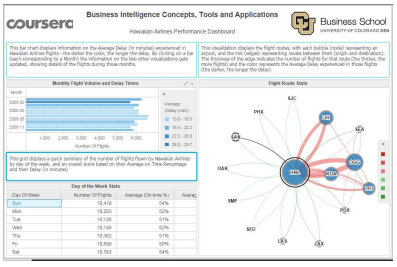
Dashboards are commonly viewed online, and usually provide interactive features that let analysts change how they view the dashboard's data. By being only one page long, a dashboard makes it easy to view the entire document at the same time and see all the information. A dashboard allows interactivity from users, so each user can change how they see the data, within the limits of what the controls allow them.

To further enhance data comprehension, MicroStrategy enables you to use widgets with advanced visualizations in your dashboards. Widgets are sophisticated visualization techniques that can combine with rich interactivity to enable users to understand their data more effectively. You can use a variety of widget types, such as Gauge, Heat Map, and Stacked Area widgets, in MicroStrategy dashboards. Although each type of widget looks different and is used in a unique way, the main purpose of all widgets remains the same: to provide document analysts with a visual and interactive look into their data.

For providing analysis capabilities anywhere, anytime, MicroStrategy allows you to export dashboards as stand-alone Flash files, so you and other users can also view it and interact with it offline, without using MicroStrategy. The exported file is a fully interactive Flash dashboard that works similar to the Flash dashboard in Flash Mode if accessed from MicroStrategy Web.



Fertility Rate and Life Expectancy
Perform a multi-dimensional analysis overtime to understand better the correlation between life expectancy and fertility rate across the world. Visualize data using a bubble chart and heat map to easily identify trends and changes overtime in large amounts of data that is otherwise difficult to understand.



Hawaiian Airlines
Get a comprehensive view of Hawaiian airlines delays on specific days and from/to which airports they connect with Analyze the number of flight compared to the avg delays to determine a best connection for your next trip to Hawaii using Hawaiian airlines for your air travel.

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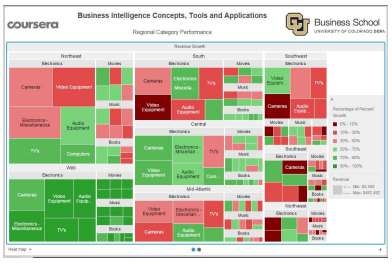
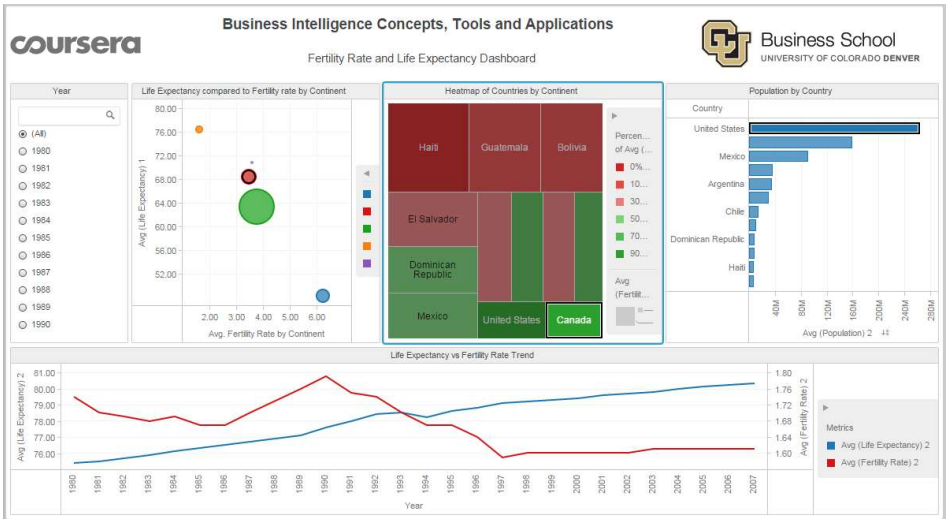


Region and Category Analysis
Easily navigate through a tremendous amount of data to find top performers and quickly pinpoint specific problems within the business operations. Use advanced visualizations such as Heat Maps to quickly recognize complex data relationships and quickly grasp the state and impact of a large number of variables at once.

These dashboards and other examples are also available from the Sample Directory where you have installed MicroStrategy Analytics Desktop eg: C:\Program Files\MicroStrategy\MicroStrategy Desktop\samples

Exercise Details

Fertility Rate and Life Expectancy



Description

Starting with a summary level bubble chart grouped by Continents, one can clearly see the continental comparison of fertility rate and life expectancy and the overall population. Thanks to the trend line chart by country one can clearly see that over the past 30 years the people lived longer and have fewer children as countries develop economically, obtain access to better healthcare, and improve education.
For this example, the bubble size indicates population size, so the larger the bubble, the more people. In addition, you can select different years in the year selector column to see how the shifts happen over the years from 1980 to 2007.

Exercise #1: Offline Dashboards with Advanced Visualizations

Visualizations

The interactivity can expose many different analytical dimensions in a two dimensional space. In this dashboard, there is a significant amount of data to analyze and it becomes difficult to understand trends and changes over time.
Bubble charts are similar to dot charts since they enable users to perform a correlation analysis on the data, though the size of the bubbles add an additional dimension to the data analysis – in this example, population size. Data can be viewed at a more detailed level, the country level, by clicking on a bubble one can see the heat map broken down by country where the size of the box represent the avg fertility rate and the color the avg life expectancy with the bar chart to the right indicating in descending order the population of the countries within the continent. By selecting the years in with the radio button selector provides an additional dimension and breaks the information down by year. When you select a country within the heat map the trend graph updates and provides a perspective of how much change the countries has experienced over the 27 year period.

Business Case

From the dashboard, life expectancy and fertility rate show a negative correlation. As life expectancy is improved across the world, the number of births decreases. (**Note:** When you open the microstrategy file, switch to 'Visual Display' tab to look at the visualization)

Q: According to the data, from 1980 through 2007 for Americas, which is the only country that shows an increase in fertility rate and life expectancy?
Q: Which country in Europe had the highest fertility rate for its continent in 1980, but gradually changed to have the lowest fertility rate?

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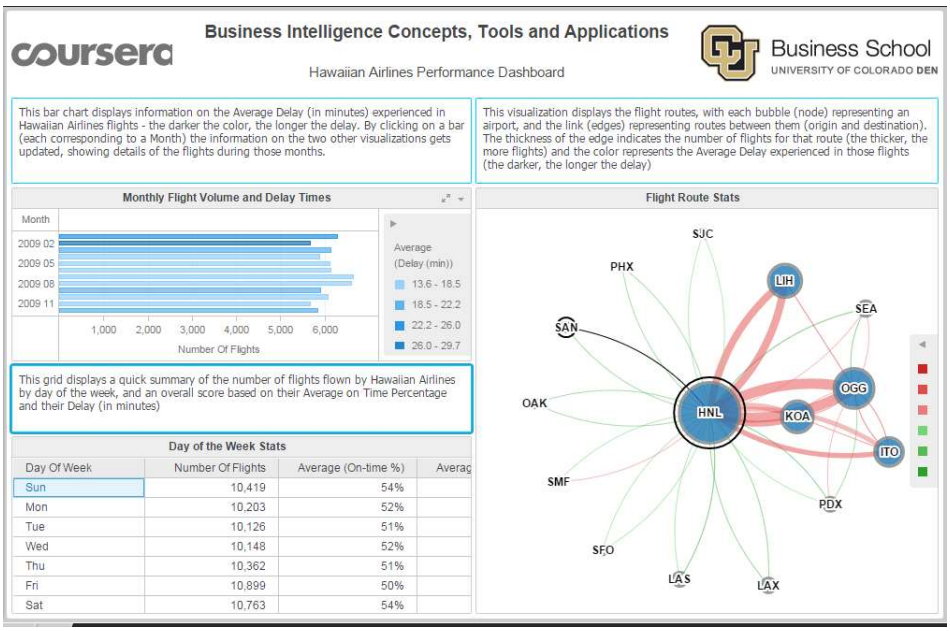
Hawaiian Airlines Performance



Description

In a single dashboard, you can quickly and easily communicate performance and recognize trends using different visualizations and charts.
The dashboard breaks information down by on-time performance, volume of flights and avg delay times in min.

Visualizations

The dashboard uses a network diagram to show volume of flights handled by the airport (size of the bubble), the avg delay (color of the connector line) and number of flights between the two airports (thickness of the line).

On the second tab, the heat map compares Arrival delay times in min compared to the number of flights and help with planning to provide the extra buffer needed to be on time for planned meeting times on one of the islands of Hawaii.

Business Case

The dynamic nature of this dashboard provides details to reflect the selected city and airport in the network diagram, providing key information on flight volume options, trends on on-time performance and avg delayed arrivals to plan for.

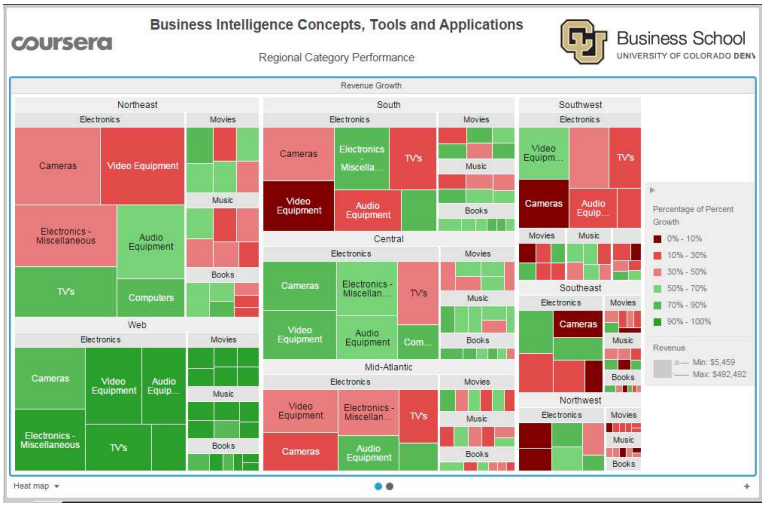
Q: If looking at the Month of September in 2009 flying between Honolulu (HNL) and Maui (OGG) what is your confidence level that you will have an on time arrival on a Wednesday, and to be safe how much time will you buffer for flight delay?

HINT:

- From the Month Bar chart, select the Month of September; notice the updates to the Network diagram and the day of week states.

- If you select **Wed** on the Day of week stats grid, it will also update the Network diagram, however you want to see the collective % and time delays for both HNL and OGG, so hold in your Ctrl key and select both **HNL** and **OGG** on the network diagram. Now look at your values represented within the Day of Week Stats to answer the question.

Region and Category Analysis



Description

The grid contains rows and rows of information across three distinct analysis areas and five metrics. Much of the data looks very similar, making it hard to find the top performers or uncover the problem areas. However, applying a heat map to this data will quickly enable you to grasp the impact of all the analysis variables at once.
By default, the size of each square determines Revenue contribution relative to all others. The color of each square is determined by Revenue Growth as indicated by the legend below. The larger the growth, the lighter the green the square will be.

Visualizations

Heat maps are used to identify problematic levels of information given that they quickly illustrate the state and impact of a large number of variables at once, represented by the size and color of the squares. The fundamental benefit of the heat map is that it allows you to quickly recognize complicated data relationships that might not be so obvious.
The format and information of each square is set by the individual metrics and attributes and can be changed dynamically through interactive chart controls that can be requested from the panel displayed above the Heat Map. If you need to focus in on a particular area of the heat map, individual or groups of squares can be easily removed.

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Business Case

By looking at the Heat Map chart, you can quickly identify the South as a problematic region. Use the controls available from the top collapsible panel like Zoom and Color base metric to find out more information on it.

Q: What is the biggest selling Category for the South region?
Follow the steps to get to the answer:

- On the dashboard, scroll through the grid to visualize the data available. Notice it is hard to find trends and relationships by just looking at a table like this

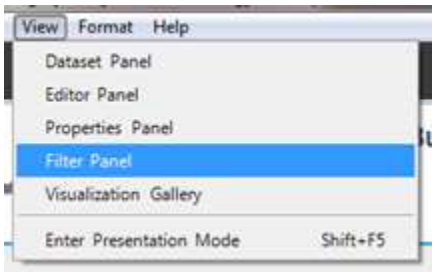
- On the bottom left, click on the **Regional Category Performance Tab** to switch to the Heatmap representation of the data

- Notice how **South** has the larger darker red box out of the larger regional contributors from all the data charted on the heatmap. According to the legend below, the redder the color, the smaller the **Revenue Growth** the Region has
- Hover over the **Region** or category titles or boxes to get more data on them

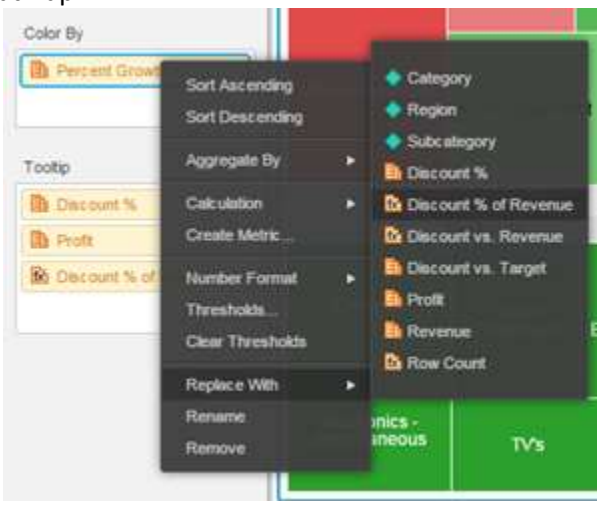
- Point to the **South** Region, do a right mouse click and select **Keep Only**
- Notice how the heat map resized the category boxes within the south region

Q: For the South region and its largest selling Category, analyze the different metrics available and determine some of the possible causes or problematic Subcategories that could be contributing to the region's poor performance.
Follow the steps to get to the answer:

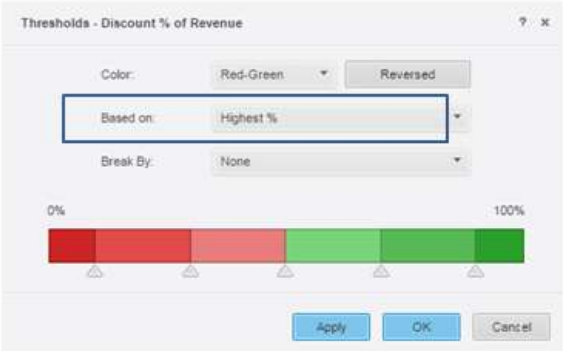
- Now we are going to open the filter panel; from the **View** dropdown menu select **Filer Panel**



- To Focus your analysis on Electronics only, from the Filter Panel, un-select Books, Movies and Music
- As before, now also open the Editor Panel from the View dropdown menu
- On the Editor panel you have the ability to right mouse click on the metric in the **Color By** section and select **Replace with** and select different metrics to see how it affects the heatmap



- If you were to select a different metric also make sure the threshold is set to indicate color correctly



Replace Percent Growth in Color By section with Discount % of Revenue and answer which subcategory is affecting the profit margin looking at which one is the darkest red.