

## Visualisation Information

The visualisation consists in a bubble chart. It illustrates more dimensions, as it follows:

1. The first dimension which decides the bubble position on the X axis is the “Projected/Actual Project Completion Date (B2)”.
2. The second one decides the bubble position on the Y axis and consists of the “Projected/Actual Cost (\$ M)”. This is a calculated average value considering the total value of the proposed projects and their number for each year.
3. The size of the bubble is a number of the proposed projects by an agency over a particular year. This is a complex value and is calculated by using the agency code and counting the number of the proposed projects over each year.
4. The color of the bubble depends on the “Agency Code” column. Each bubble offers information about the “Agency name”, too.

Thus, a bubble has a position on X axis, a position on Y axis, a size and a color.

### *Reason for the choice of the chart and appropriateness*

Because I wanted to illustrate at least 3 dimensions and because the data contained financial information about the proposed projects, I considered that a bubble chart would be the most appropriate chart type.

And because the dataset contained financial information from many agencies, I chose to add different colors to the bubbles, according to the agency name.

In terms of assessing one agency's performance, the chart is suggestive because it offers information about the activity of the agency, the growth, the ability to absorb funds, the position on the market (compared to other agencies) and the evolution over the years. If some bubbles' colors are not present over the entire X axis length, it means that the agency, at some year, stopped to propose projects. Also, if they are very close to the bottom, it means that they didn't manage to absorb bigger grants or the projects were rather small. The agencies with the best evolution will be those whose bubbles are getting upper and upper on the Y axis and have the bubble sizes bigger each year.

### *Audience*

The audience is represented by the potential investors or business consultants who are willing to see the performance of the agencies over the years for proposing projects or even the participant agencies which are willing to compare to the others. The upper positions on the Y axis and the bigger the bubble size, the more performant the agency in attracting and absorbing grants and in implementing their projects and achieving their goals. These users can, also, have the big picture of the market by seeing the position of other agencies and to assess their performance by asking: are the other bubbles higher? Are they bigger? Are they continuously growing? Are they keeping to appear on the chart over the years?

### *Visualisation tailored to the audience*

The chart is tailored to the audience when it comes to interaction because it allows the user to assess both the individual agency situation and the market situation. The user who is interested by the evolution of one agency can select a bubble that is specific to the agency. When the bubble is selected, all the other

agencies bubbles will fade out, and the all the agency bubbles will stay visible. By this, the user can have a better visualisation of one agency performance. On the sidebar, a div with exact numbers will appear, providing information about the agency name, number of projects for the particular year and the calculated average value of the projects. When the user will move from the selected bubble, he will be able to see the big picture of the other agencies ( the market, the competition position) and to make a comparison.

#### *Visualisation interaction instructions*

When the user is opening the webpage, he will be able to see the chart and then to move the pointer to a bubble, all the same color bubbles will stay on the chart, while all the other colors bubbles will become transparent. On the left, a div colored with the same bubble color will appear with more details about the bubble. For example, it will show: “Department of Defense has proposed 67 projects in 2012 in value of \$797M in average”. After moving the pointer, the div will disappear and all the other bubbles will become visible again. This is how the user will be able to have the global perspective again and to compare agencies by comparing the position and the dimensions of the bubbles.

Because the chart has many bubbles, I chose not to add a legend with the agencies’ colors, but to color the information div and to add to it the agency name. This way, the user will learn fast the colors because he will keep seeing the name of the agency and colored div and the chart is easier to read, fun and interactive.