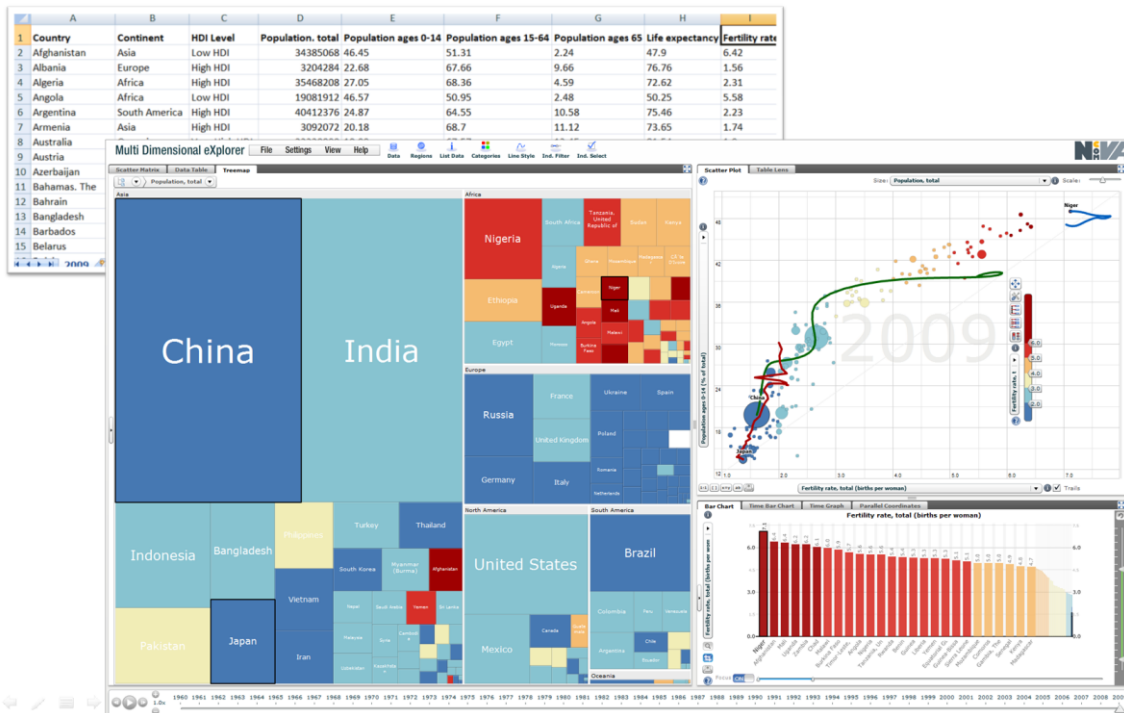
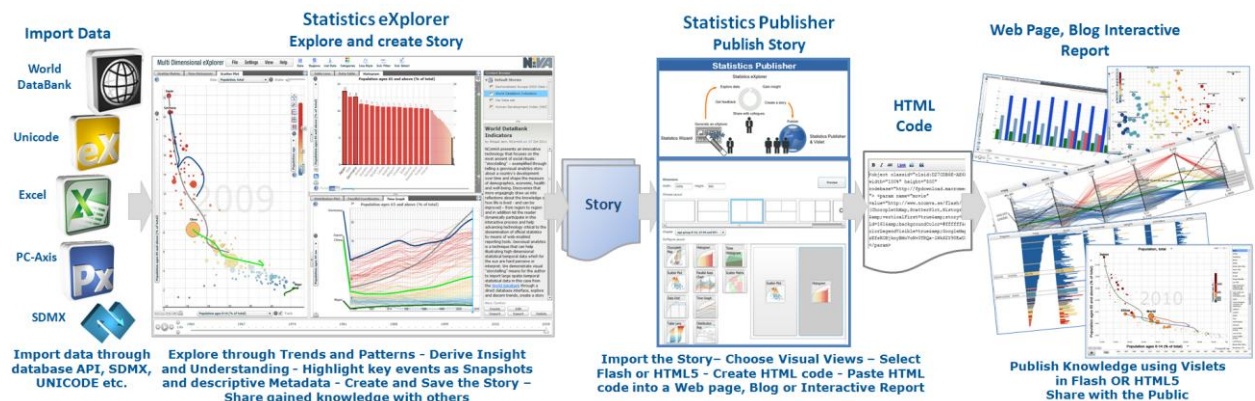


Explore, animate, present, share and publish scientific, statistical and business multidimensional data using innovative Visualization



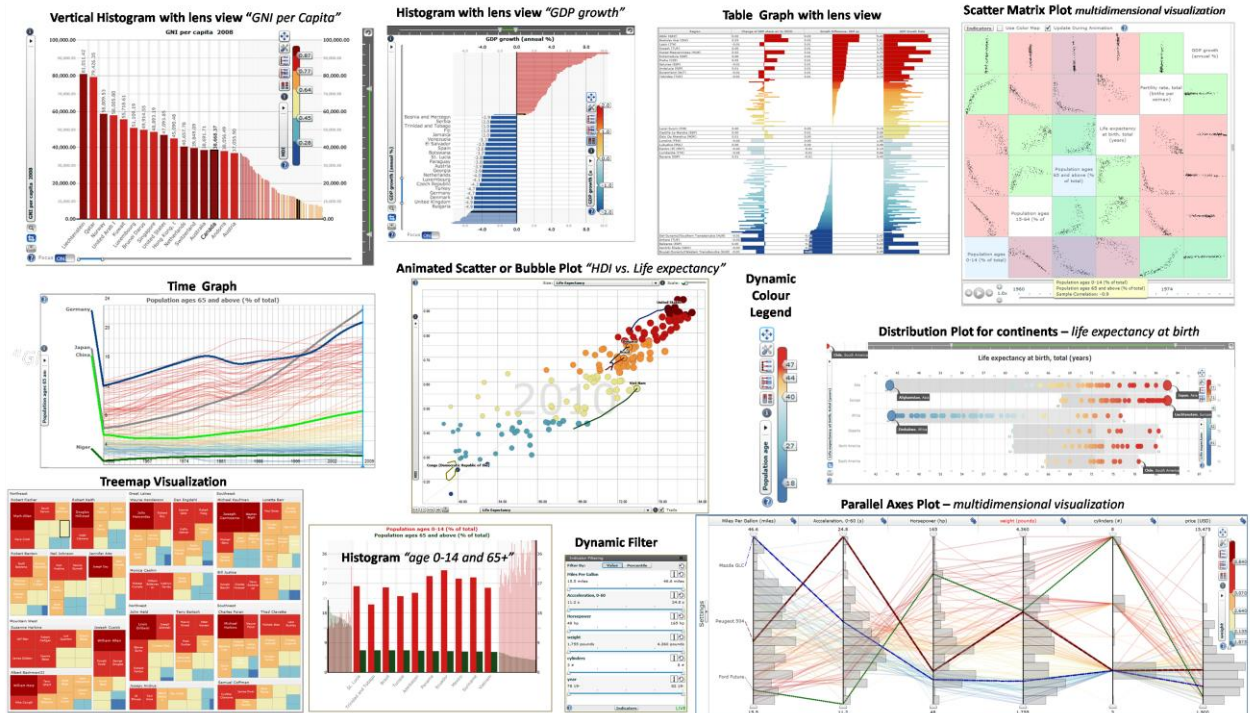
MDim eXplorer with three linked views showing data from World Databank using treemap, scatter plot and bar chart visualization. Facilitated by the technological advances of the last decades, increasing amounts of complex temporal and multidimensional data are being collected from many different application fields such as business statistics, demographics, healthcare, biology, chemistry, energy, environment etc. A major challenge today is not to gather data, but to extract meaningful information and gain insights and knowledge from the data. Why is perception of multidimensional data a more difficult problem? An obvious answer is that we can barely perceive data values for two variables and as the amounts of gathered data and dimensions increases, the challenges become more complex and require innovative and interactive Visual Analytics tools.

MDim eXplorer turns exploring data into an exciting process invoking people's minds. The user can test hypotheses and ideas and is invited to apply new insights as a basis for better understandings and decisions. The combination of MDim eXplorer (explore, gain insight) and Statistics Publisher (communicate understanding) represents the tool for an integrated visual analysis, collaboration and publication process facilitating storytelling aimed at producing innovative interactive visualisations (Vislets) that takes only a few clicks to be deployed into your blog or web site.



Publish your Story with Snapshots by embedding the HTML code into blogs or Web pages accessible to thousands of people that can interactively follow your analytics reasoning and share knowledge. Build your own web site or interactive report around our HTML code.

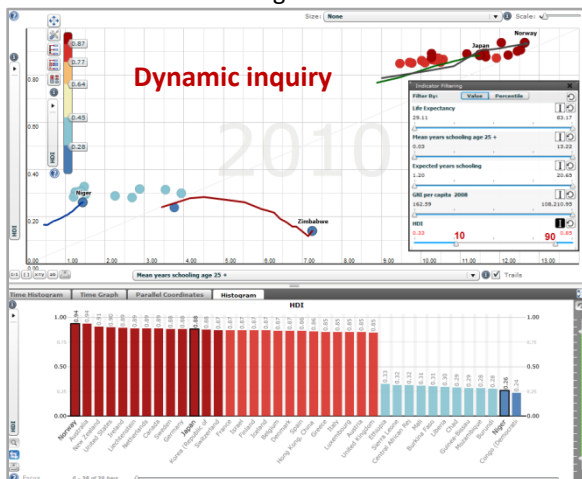
Better understanding through simultaneously linked visualization views



Interactive motion visualizations are explored through multiple-linked views using simultaneous filtering, highlighting and colouring.

MDim eXplorer includes a collection of interactive methods from Information Visualization and Visual Analytics specially adapted and customized to the behaviour and requirement of large, temporal and multivariate data. Interactive features necessary to support a visual analytics exploration are based on the paradigm **analyze first, show the important, zoom, filter and analyze further and details-on-demand** and includes tooltips, brushing, highlight, visual inquiry, drill down and dynamic indicator filter mechanisms for detecting outliers.

MDim eXplorer uses time-linked and coordinated views to simultaneously present, animate, explore, and analyze different aspects of the data. The views can be dragged-and-dropped, resized and printed. Visualizations include scatter plot, dynamic histograms with fish eyes lens, time graph, parallel coordinates, scatter matrix, table lens and treemap. Interesting subsets of the data are interactively selected and brushed, and the relations are investigated in all the linked views. Data-of-interest methods can be applied in all linked views that visually separate important discoveries from the rest of the data. MDim uses innovative "focus+context" visualization (fish eye) in histograms and table lens, and dynamic queries extending the analysis capabilities to scenarios with larger data sets.



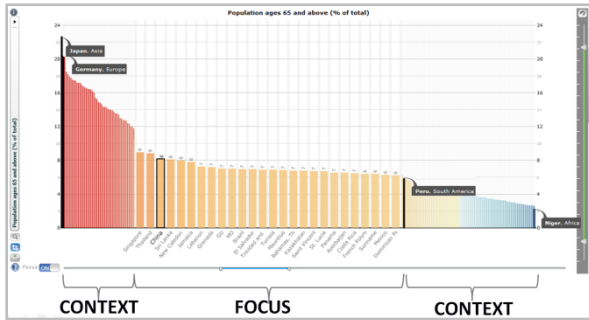
Each indicator is represented by a pair of range sliders which define the min and max range for the query area. The range of an indicator can be specified by "dragging" the handles. Regions with values for a selected indicator, that fall outside of the specified range, are filtered out. A combination of range slider movements can be used to dynamically formulate a more complex visual inquiry. These visual conditions and constraints will immediately reflect the visual contents in all linked views. – Only the outliers below the 10th and above the 90th percentiles are shown here.



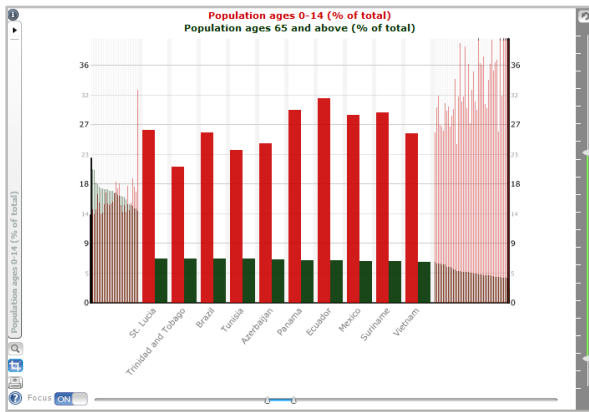
Storytelling and Story Editor in MDim eXplorer

Storytelling with an integrated snapshot mechanism helps the author to highlight and save discoveries (views) of particular interest and subsequently share or guide others. Snapshots are linked to the associate describing and analytical reasoning metatext. Clicking on a Snapshot initiates all MDim eXplorer views to the state given by the Snapshot.

Data – explore – gain insight – knowledge – understanding - action

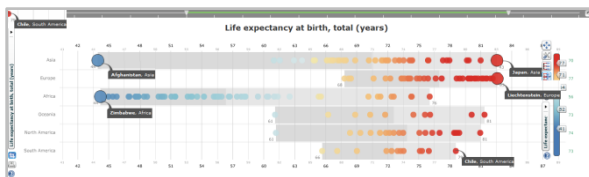


“Fish eye” (Focus & Context) technique to See selected larger data set within their context in this *Dynamic Histogram*



Time Histogram GNI per capita Cambodia, China and Korea.

MDim eXplorer can be applied on all or a selected set of data. A Group Filter or Categories are used to filter large data and focus on important discoveries. The distribution plot below is another important visual representation to see the spread of countries within each continent.

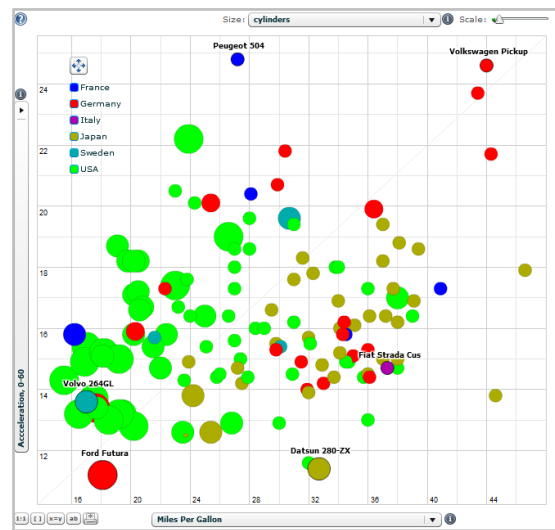


Distribution plot for “Life expectancy at birth for continents”.

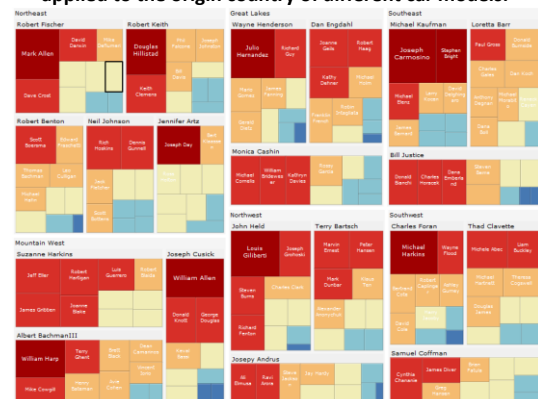
Summary of features and functionalities

- **Web** compliant **explorative, collaborative and publishable** visualization optimized using Adobe® ActionScript for Flash 10;
- **Discern trends** or patterns - **derive insight and understanding** – **communicate** knowledge effectively through **Storytelling and Snapshots** – **Publish in Flash or HTML5** for action;
- Explorative tools that Identify **what’s meaningful** in the data in ways that your eyes can see and brain can understand and keep focused on **what’s important**;
- Support **large spatial-temporal** and **multidimensional** statistics, business and scientific data using our innovative data cube architecture;
- **Import your data** with EXCEL or standards SDMX and PC-AXIS;

- Innovative interactive methods customized from **Information Visualization** including scatter plot, time graph, dynamic fish-eye bar chart, table lens, parallel coordinates axis, scatter matrix, distribution plot and treemap;
- Temporal and multivariate data are **simultaneously** explored through **multiple-linked** and **coordinated views**;
- **Portal** available for **Desktop** users for easy publishing;
- **Drag-and Drop** views by selecting a view by “grabbing” it and dragging it to a different location in the layout;
- Dynamic **state-of-the-art colour legend**;
- Mechanism for **Storytelling** and **Snapshots** for creating dynamic Web documents;
- **Visual inquiry** and conditioned **statistics filter** mechanisms for detecting outliers and focus on important discoveries;
- **Interactive time animation** simultaneously in all views;
- **Screen space usage is optimized** for visualization– no unnecessary visible GUI panels;
- **Modular multiple-view design** – move and scale the individual views and allocate more space to the visual representation that is most important;
- Support for **categorical data** and visual classification of, for example, associated with a country;
- **MDim eXplorer** is developed with components from our awarded object-oriented toolkit GAV Flash framework;



Categorical data with various coloured classification is here applied to the origin country of different car models.



Treemap showing US Sales data