

Power of Data Visualization for TRI
Thursday, 2:00-2:55 p.m.
Grand Ballroom

Toward Interactive and Intelligent Visual Analytics of TRI Data

David Burlinson, Presenter

In the United States, the Environmental Protection Agency's (EPA) primary goal is to protect human health and the environment; EPA attempts to meet this goal in several ways, including, (1) by ensuring that national efforts to reduce environmental risk using effective regulations are based on the best available scientific information, and, (2) by facilitating broader participation in the EPA's goals by providing access to accurate, relevant information for novices, experts, and everyone in between. Over the past year, and as part of the EPA University Challenge, we have developed visual analytics applications to support these goals, by combining intuitive and interactive visual representations to enable knowledge discovery.

Our first application, TRI-Direct, provides an interactive visual interface to analyze high-level spatio-temporal elements of the Toxics Release Inventory (TRI) dataset, with coordinated visual metaphors. TRI-Direct allows exploration and comparison of aggregate releases, recycling, treatment, and recovery of toxic chemicals at unique facilities, and provides a number of filters and overlays to represent chemical usage by industry, state, or country.

Our second application aims to support expert users in analyzing the efficacy of environmental regulations. One area of focus is to accumulate facility, industry, and chemical data from the TRI data and expose the organized data, providing a more flexible window into the relevant data attributes and dimensions. In this ongoing work, our design will permit generating visualizations relevant to specific research questions, allow contextualization and knowledge discovery, and inspire further questions when exploring attributes related to particular environmental regulations. Overall, our applications are designed towards interactive visual exploration of EPA data, so as to be more closely aligned with the domain scientist's research questions that provide insights into the effectiveness of current and proposed regulations; at the same time, the visual interface provides an engaging window into EPA's data and its impact and relevance on the larger community.

Using the Visualization Software Qlik for TRI Data Presentation and P2 Outreach

Sandra Gaona and Jeff Kohn, Presenters

No description available