

## **The World Of Today**

The world of today is undeniably a visual one. We live in an image-inspired culture with DVDs delivered on demand, Quicktime newscasts, Flash-movie advertisements and downloadable Pod casts. There are even companies set up to start pushing video advertisements to our cell phones. I guess Radio ads are no longer able to compete with all the visualization tools we now carry around with us.

If all the content we used to read in newspapers or hear on the radio is now being delivered visually, why is it accepted that if we want to analyze reams of complex information, the best way to do so is to look at data in a spreadsheet? Tables may be how computers process information, but the human brain functions very differently. How different is our recollection and retention of a college lecture and that of the first Hollywood blockbuster movie we saw years before?

## **Hey Data, Got Information?**

Images are the common language of data. How useful is data if it never bridges the gap between understanding and actionable information. Companies are literally drowning in data, but quite limited in their ability to decipher, analyze and act upon the data they maintain. One of the most often overlooked issue between stored data and useful information is the use of visualization. In essence, visualization renders data in a variety of visual models allowing the onlookers to identify relationships, patterns, anomalies and trends. How many major web portals collect statistical information on their visitors? They all know where they came from what they looked at how long they stayed and where they went after. But without the ability to aggregate this data visually, can trends be easily uncovered or important marketing information be discerned?

Data visualization makes it easy to present information without taking away its importance or complexity. The same information can be presented in a variety of visual models, which reflects with how our brains understands and stores information. The reason that you can remember faces much easier than you can remember telephone numbers is because our brains are dedicated to storing the complex geometric attributes of a human face. How many times have you pictured a face or image but forgot the name behind it? (wait, wait, its on the tip of my tongue, I can see it!) Also, the brain will more immediately recognize a data anomaly if it is displayed visually (an outlying point on a graph, or a spike in a bar graph) as opposed to being buried in a table of hundreds of other numeric values. If a picture is worth a 1,000 words, then visualization is worth how many spreadsheets?

## **Location, Location, Location**

Another important aspect of converting data into actionable information is the matter of location. Everything has got to go somewhere. Physical assets inevitably occupy physical space. Trends and patterns are often tied to areas or regions. For example, sales are down in the Midwest territory, or a higher percentage of accidents have been reported from a particular facility.

How much of your enterprise data has a geographic component? Even though geographic trends and patterns are extremely significant in making intelligent business decisions most companies do not reference them visually. In short, if there's a "what," a "when" and a "how many," there's almost always a "where." Location intelligence is built on the assumption that the spatial aspect of data cannot be ignored, and furthermore can facilitate recognition and understanding in attempting to infer meaning and context to data.

## **Unlocking the LATCH**

In his 1989 book *Information Anxiety*, Richard Wurman put forth the idea of LATCH as the five fundamental ways of organizing information. The acronym reveals that we can organize data by location, alphabet, time, category and hierarchy.

Data can be sorted alphabetically in spreadsheets, and we might use pie charts to display results by category; tables often are used for hierarchies, but primary in LATCH is location and time. Both are fundamental ways we look at our world. We think in terms of space (location) and time.

When you combine the notion of location as a fundamental way of organizing information, with the industry estimate of upwards of 80 percent of all data having a location component, we have a winning technology for both displaying data (*a la* mapping) and analyzing it.

## **A New Way to Look at Data**

A shortcoming of business intelligence (BI) thus far is its inability to convert data into information that is

- Understandable
- Accessible
- Contextual
- Interactive and
- Actionable

A location intelligence solution helps large companies make better business decisions with their data using map-based data visualization. Instead of just staring at digits on a page, this solution facilitates engaging in a fluent conversation with data; uncovering trends, identifying anomalies and gaining invaluable person occupies space and has a location; therefore, geography is a very intuitive way to organize data.

**Accessible:** Put data into the hands of the information worker how and when they need it. business insights. Organizations are hungry for ways to enhance the utility of their data by making it:

**Contextual:** Enable data to be viewed in the context of geography. Every physical asset, product and

**Understandable:** Think of how many faces you can remember versus how many phone numbers. Data visualization optimizes recognition, comprehension and retention of data trends.

**Interactive:** Drill down, query and manipulate data using visual tools. Interacting with data can be a two way interaction. Ask your data, "But what if...?"

**Actionable:** By rendering the data in a manner that makes it practical, it can more effectively shape strategic planning and execution.

## **The Ongoing Evolution of the Web Map**

Ever-rising consumer expectations for online mapping have inadvertently helped raise the bar for corporate entities, mainly because those corporations, after all, are made up of employees, who also happen to be consumers. The ubiquity and familiarity of the general public with Google Maps and Microsoft Virtual Earth and TrueVector Technologies have spilled over into the corporate psyche and nudged those same corporations into the uncharted terrain of map-based data visualization. The ability to quickly locate detailed information by visually drilling down on an interactive map has moved from the realm of "nice to have," to "all your competitors have one, so why don't you?"

Instead of merely clarifying one's whereabouts, Web users now want to use an interactive, Web-based map as a window to information discovery. That may be the very literal use; a proximity search for all McDonalds in a two mile radius, or a more complex BI application, such as identification of untapped markets by overlaying demographic, sales and competitor market-share data. What started out as a means of getting from point A to B has become the way to get practical BI.

Central to this new approach is the ability to visually consolidate multiple data sets and render them on a map as intelligent, interactive features. Even if the data is not integrated on the back end, having the data visually integrated onscreen dramatically increases its usability and applicability. Latent correlations, trends or anomalies can be more easily identified when disparate data sets are viewed collectively in the context of geography. Incorporation of location intelligence into portals and executive dashboards has afforded the time-challenged information worker to quickly identify at-a-glance significant data patterns (such as an under performing retail unit, or a recurring accident in a particular region, or a more efficient distribution channel for product).

Web maps are growing up fast, rapidly developing their ability to overlay a limitless number of layers of enterprise data, in a near infinite number of configurations, bringing that data to life in a manner that makes it understandable and usable. The paradigm has certainly shifted; maps have always provided a route to our destination, but will now help chart a roadmap to organizational success. For leaders like TrueVector Technologies, it's not enough to visualize data within geographical confines. TrueVector Technologies is taking the next step, which is that the data now dictates to those geographical boundaries and changes them based on pre-determined instructions. It's not enough to see how many cases of e-coli there are around the country or in a specific ZIP Code. While this is important, it becomes critical when the data changes the map to alert the viewer that a pre-set threshold has been reached. Now instead of reacting to an e-coli outbreak, we can see trends and alerts in the map that allow us to become proactive.

## **Cell Damage?**

It's time to think outside the "cell." Those of us from the spreadsheet-challenged majority can now stop faking it. We are free to desist from that spurious "informed" expression when we hold a spreadsheet in front of us (when really it may as well read "data overload"). Already, some large global companies are harnessing map-based data visualization to consolidate and display the phenomenal amounts of complex data that flow through their enterprise on a daily basis. Where spreadsheet reports once reigned, now executive information portals visually relay key performance indicators and core metrics to the harried upper corporate echelons at-a-glance.

While the spreadsheet's utility and value cannot be ignored, in many cases it should not be the initial way that we interact with data. Instead, the spreadsheet should be an output or result of a data visualization interaction, after the core significant data has been identified and aggregated.