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Tuesday, August 30, 2011

What Users Want from their BI Investments

How the Addition of Data Visualization Tools Can Amplify, Improve and Extend BI Investments

by Hugh Heinsohn, VP/Director, Panopticon Software AB

Monday, March 01, 2010

Major Requirements for New BI Investments

People have come to expect highly interactive, well-designed and intuitive visual interfaces in the systems they use in everyday life. Successful BI systems are just as easy to use. They put the information relevant to a decision in a visual context that people can comprehend and interpret quickly. In addition to ease-of-use, the BI systems experts face challenges related to the sheer volume of data available, the frequency of data updates (particularly in operational environments), and the multitude of data sources that can play into a decision-making process.

Four major factors driving new requirements for BI systems are:

- **Systems must be designed to enable fast comprehension of complex data.** The system must take advantage of the human mind's ability to process and understand visual presentations of complex information quickly. Designing such systems properly is a non-trivial endeavor.
- **New data collection and distribution systems are making truly up-to-date information available to decision-makers.** In some cases, relevant new data is available every few minutes or even streaming in real time. Managers must base decisions on the most recent data available.
- **Users want self-service capabilities in their IT systems.** Organizations need BI systems that allow users to modify the framework for analysis and data monitoring without substantial IT involvement. Users must be able to directly drive the system in order to respond to constantly changing conditions and new requirements.
- **New systems must complement and build on legacy BI investments.** Most organizations have made substantial investments in data warehousing, data cleansing and other BI systems. New deployments must build on those past investments and provide users with new, more efficient ways of accessing the data stored in those systems.

Secondary challenges that further shape requirements for new BI implementations include:

- **New systems must be deployed rapidly.** Once an organization recognizes the need for a new tool, a long deployment cycle raises substantial risks. Scope creep can result in delays and higher-than-expected costs. The nature of the problems to be solved can change dramatically during the implementation process. Project sponsors can move on to other posts or to other companies, leaving no one committed to a successful deployment.
- **The best BI systems are intuitive and interactive, resulting in quick ROI.** Users must be able to learn how to use them effectively in very little time. User acceptance can be a problem for any new software in any organization. The less time it takes users to learn a new system and achieve quantifiable results, the better the chances for success.
- **Many organizations are requiring a substantially more efficient decision-making process due to downsizings.** There are simply fewer people available to do the analytical work required to formulate effective decisions. Tools that make it easier for people to complete their analysis and arrive at insightful, informed decisions quickly provide huge benefits to the individuals involved as well as to the organization.

Monitoring and Analysis of Operational Data

In many organizations, the ability to monitor operational data is as vital as the ability to analyze that same data. Managers must be able to spot potential problems and opportunities immediately and then drill into the data in order to understand the underlying correlations involved. The easier it is for people to follow changes in the data, the better they can manage the system for optimal business results.

A good BI system provides users with up-to-date access to the latest data in a format they can easily understand. It allows users to quickly drill down into the data to find non-obvious correlations and exceptions. The user must also be able to "drill up" in order to get a comprehensive overview of all the available information as well as the details.



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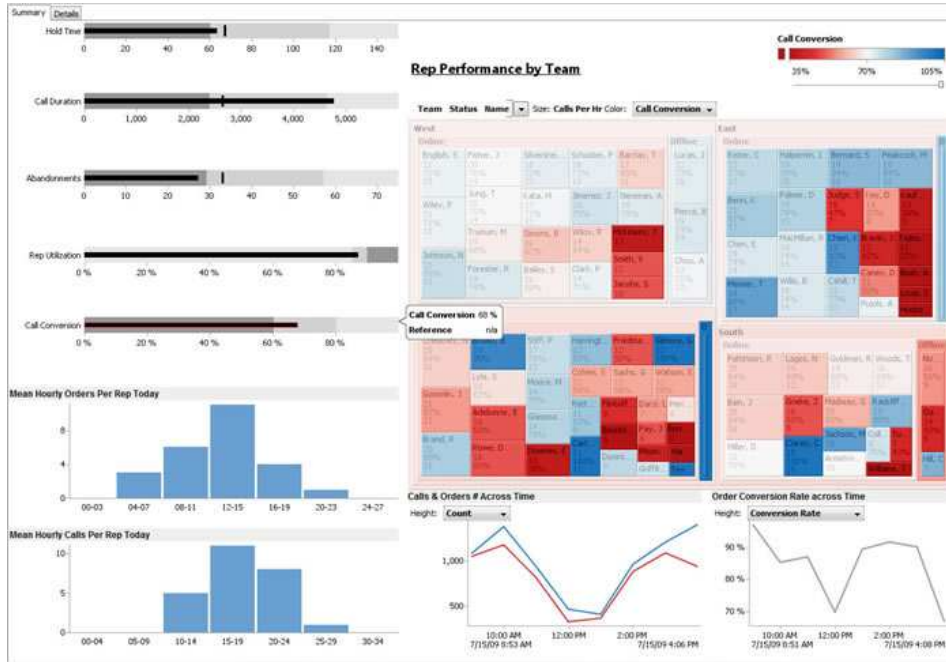
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Decisions made at the right time based on a good analysis of up-to-the-minute data are often much more valuable to the organization than those that require days or weeks of detailed study. A good decision made now is often vastly more valuable than a better decision made too late.



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An operational BI Dashboard like this one allows users to monitor rapidly changing data at a glance. In this example, the Treemap in the upper right uses the color red to make problems obvious. The larger and the redder a box is, the bigger and more serious a problem is. Bullet Graphs in the upper left provide an at-a-glance view of Key Performance Indicators. Bar Graphs and Line Graphs provide comparisons of relevant time series data. This Dashboard was designed to monitor the performance of a customer support call center, although the same tools are useful in any application with fast-changing data.

See Your Way Clear

The widespread adoption of highly graphical, interactive user interfaces on products as diverse as mobile telephones, video games and websites has conditioned people to expect that their business systems will be equally intuitive, interactive and visual.

One key to fast user acceptance for a new BI system is visual presentation of the data — in ways that make optimal use of the human psycho-visual system. The brain can absorb well-presented visual patterns with incredible speed. Savvy organizations provide users with data visualization tools that take maximum advantage of our innate abilities to process visual cues.


Good visualization design is a significant challenge. There is a substantial canon of research into human perception that must be considered and applied by developers with the proper experience in order to produce a truly intuitive system. A poorly designed system that does not lead to improved decision-making is a bad IT investment; even worse, bad decisions made due to misinterpretations of data can cost much more than any software license. A well-designed visualization system helps people comprehend information quickly, without even thinking about it.



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