

Now you see it

Data visualization and the insight-driven organization



Organizations are relying on data-driven insights more heavily than ever before. But there’s a big difference between an organization that selectively uses insights to fuel decision-making in specific parts of the business and an insight-driven organization (IDO) that’s hard-wired to deliver and act on insights every day, everywhere.

To reach IDO status, organizations must make sense of the massive volume of information coming from an ever-growing array of data sources—sales and production reports, social media, customer emails, and more. Yesterday’s business intelligence (BI) systems were not designed to pull together and analyze data from various sources, much less provide the visibility and speed business users need to respond in real-time to today’s customer and operational needs.

The evolution of business intelligence

Today, business users demand data discovery capabilities, which allow them to directly interact with data to gain insights without IT or data science skills. Data discovery gives users the ability to access data when and where they need it. Just as important, users are able ask and answer questions on the fly, enabling them to intuitively explore and visualize data to uncover patterns and insights that would be hidden in traditional spreadsheet reports or dashboards. Data discovery puts the power of analytics in the hands of the business user.

What to look for when selecting a visualization tool

The massive amount of data generated by today’s enterprises can be very useful for those who have the tools and skills needed to extract its value. Here are eight characteristics of an effective visualization tool.

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1. Incorporates best-practice visualization principles.

Early visualization tools didn't take advantage of the scientific principles around how the brain processes information through visual images. Creating an elaborate graphic isn't the point; the goal is to draw a clear picture that allows important patterns to stand out. For example, if our brains can compare lengths more easily than volumes or areas, a bar chart might be a better choice for communicating information than a 3-D pie chart.

TIP: Look for a tool that incorporates leading visualization best practices as its default so even beginners can create effective data visualizations.

2. Easy to use. An effective visualization tool is easy to use, even for people without a technical background. Users should be able to drag and drop data elements to create charts and graphs very quickly and easily with little training. This allows users to interact with the data: The user asks a question, finds the answer, which drives another question and answer cycle. Being able to ask and quickly answer a series of questions can enable smarter decision making at all levels of the organization.

Tip: Some visualization technology companies allow businesses to download a free trial version of their software from their website so you can test "ease of use" for yourself.

3. Able to connect to a variety of data sources. In an ideal world, enterprises would have their data housed in a central data warehouse, rather than stored in silos across various business units. That's not feasible for many organizations, so it's important that the visualization tool has the ability to connect and blend data from multiple internal and external sources.

Tip: Look for a tool that can connect to a wide range of data sources—as complex as Hadoop or as simple as spreadsheet and text files.

4. Portable across devices. As business mobility grows, users want to access the tool wherever they are—at their desk or on their smartphone and tablet. The visualizations should automatically scale to fit the device and allow the creator/developer to prioritize the data that's displayed on smaller screens. As of late 2015, leading visualization software companies are still working to optimize these capabilities.

Tip: Learn where the software is on the portability maturity curve. Do recent releases incorporate the ability to scale and prioritize how visualizations are displayed? If not, find out when the vendor expects these capabilities to be released.

5. Enables collaboration. The visualization tool should make it easy for a user to share a visualization on a company portal, allowing others to view and provide feedback or ask additional questions that can be explored.

Tip: Pick a tool that caters to a variety of user preferences in sharing and consumption of visualizations. Look for features that allow users to annotate charts to highlight important information and to build stories using data.

6. Includes built-in data security. Security features should control data access based on an individual's role and responsibilities. Data governance is also important, so that results are consistently accurate; data sources should be vetted by IT or other authorized areas before being made available to the enterprise.

Tip: Look for software that provides robust security features for the enterprise. Does the tool support single sign-on authentication methods used by your organization? Does the tool provide reliable authorization through roles and permissions? Data security and network security are also important considerations.

7. Delivers reliable and fast performance. Today's business users are accustomed to fast-loading Web pages and responsive apps. Even though visualizations require complex processing operations, many users will not be willing to wait more than a few seconds for their results. The tool should also scale efficiently, so that visualizations can be quickly retrieved across the entire enterprise when needed.

Tip: Visualization software that uses parallel processing, which can process multiple operations at once, is typically faster than sequential processing. Also look for in-memory processing, which processes data in the user's local computer memory, or RAM, which is much faster than disk processing.

8. Availability of training and support resources.

Responsive, knowledgeable customer support is a must have. Does the software vendor listen to user feedback and make continual improvements? Many vendors also have an active community forum made up of volunteers who provide answers on their own time. Look for effective training videos that demonstrate how to build basic and complex visualizations that effectively highlight insights.

Tip: Consider attending a trade show where various software vendors offer presentations and hands-on demonstrations. Network with other conference attendees to get their perspectives on the benefits and challenges they face in using various visualization tools.

It's smart to start small

Business intelligence and data discovery technologies have been around for a while, but in recent years, we have seen the emergence of several new vendors in this space pioneering new analytic capabilities—including visualization. Leading companies are already moving up the data discovery learning curve, developing capabilities that will allow them to enhance performance through decisions backed by data.

Many organizations find that it's smart to start with a data discovery test project with a business leader who is enthusiastic about the possibilities that visualized data offers in helping his/her people make smarter, faster decisions.

They use this pilot to test the performance of software in real-life business situations and explore how the broader organization can benefit from visualizations. This also provides an opportunity to identify the processes, data governance, and other controls that will be needed for enterprise expansion.

Organizations striving to become an insight-driven organization are using the lessons learned by individual parts of the business to deploy a tightly knit combination of strategy, people, processes, data, and technology with the goal of delivering insights at the point of action every day, everywhere across the organization.

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