Visual Discovery: Enhancing Insight, Intelligence, Productivity, and Innovation

Nearly every moment or every day, businesses are both creating and being inundated with data. Varying data volumes, formats, structures and quality can make it difficult to determine what's useful and what's not. When people can't easily monitor, compare and analyze data because people can't visualize the quantities and relationships in it. As a result, an inordinate amount of data is left undiscovered, unused or underused.

The human brain processes images at a more rapid rate than numbers and symbols in a spreadsheet or report. Using visual displays to organize and illustrate large amounts of complex data can make it easier to grasp and provides a natural advantage towards comprehension.

What is Data Visualization?

Data visualization is a method for displaying vast amounts of data in a comprehensible way. It's considered to be modern equivalent of visual communication and involves both the creation and study of the visual representation of information. Essentially, complex data is abstracted to a relevant schematic form, including attributes or variables for specific groups or units of information. The visual representation allows for greater discernment of patterns, relationships, trends, and anomalies.

Business Intelligence (BI) work is performed to provide a comprehensive report of the state of a business: its financial state, its business opportunities, and areas for improvement. Data visualization is one of the activities that contributes to overall BI.

Data Visualization Tools

Sophisticated tools now allow businesses to do complex queries and render analytics on a wide array of visual formats to gain the targeted insight they need. A good data visualization tool lets you experiment with different scenarios and adjust selections to suit your specific needs. Types of visual formats include basic bar and pie charts to heat maps, geographical mappings, sparkline or spider maps, pivot tables, and more.
Again, data in visual form can often surface patterns and trends and deviations more quickly and easily than other forms of data. This makes it easier to gain insight and to adapt and act on issues that arise unexpectedly. Until recently, the production of such visualizations was difficult to create because the processing required custom programming. Now it’s possible to use quality tools to create visual representations of your data by dragging and dropping within a graphical interface.

As a result, you don’t have to be a data scientist to use business analytics. Instead you and your employees can focus on using your specific areas of expertise to apply suitable selections in their filters to uncover relevant data. Accounting can find the financial data they require; operations can locate and use logging information; and business analysts can identify new opportunities based on existing data.

**Compiling Data for Analysis and Visual Representation**

There are many ways to work with the data you want to visualize, but generally you will probably use one of two methods, depending on what your data visualization tool can do for you. Either you’ll process the data first and assemble it in a single location, or your tool will pull data from its existing locations. The two approaches are illustrated below.

Depending on the diversity of your data, it may be easier to create visualizations if a measure of data normalization has first been applied. Migrating the data to Amazon Redshift is one option; there are also tools for rapidly migrating data there can be found at AWS Marketplace.

If your data is sufficiently homogeneous, you may be able to aggregate your data for visualization without migrating it to another container, or possibly migrate only part of the data before you create visualizations or reports.

**Data Visualization Tools on AWS Marketplace**

The market for visual discovery tools is rapidly expanding with dozens of vendors competing with a range of products. Finding the tools that are right for your business needs is considerably easier when you look on AWS Marketplace.

You can launch most of the software using 1-Click, and the software is already configured, ready to help your team create the visual assets required to best interpret the data you create and take in. In addition to Free Trials, most tools offer hourly, per-user, or bring-your-own-license options, giving you the greatest flexibility for investigating the software and finding the one that’s best for your organization. Learn more about Visual Discovery at [http://aws.amazon.com/mp/visualization](http://aws.amazon.com/mp/visualization).

**Get Started with Bi-Data Analytics at AWS Marketplace**

- Find and deploy the solution you need in minutes
- Save money with pay-as-you-go pricing
- Scale globally across all AWS regions