Google Cloud

[Supplemental] Overview of data analysis and business intelligence

Every day, there are countless pieces of data generated around the world relating to many aspects of life, including social media and online searches. As a data analyst, you'll work with data that's related to the industry and organization you work in, such as scientific research, sales revenue, website traffic, or marketing performance data. No matter what type of data you're working with, data analysis can help you gain a deeper understanding of the story the data tells.

In this reading, you'll explore what data is, and where it comes from. You'll also learn what data analysis is, and how it relates to business intelligence.

Data and where it comes from

Data is a collection of facts. Often, data includes recorded observations or measurements relating to topics such as events, people, or results. For example, ecommerce websites collect information about shopper demographics, the products shoppers view, and purchasing patterns. Social media apps may collect information about the content users view to help them provide more content that users will enjoy. While a lot of data may take the form of numbers, such as how many times customers purchase a specific product, or how much a tank of gas costs, data can also be descriptive text, such as product reviews or written observations about the outcome of a scientific experiment.

On their own, individual data points are single facts that usually provide little insight because there's nothing to compare them to. However, when you examine individual data points more closely, group them together, and compare them to other data, you can begin to identify patterns and explore relationships that give the data deeper meaning.

Data analyst responsibilities

Data analysis is the collection, transformation, and organization of data in order to draw conclusions, and drive informed decision-making. Throughout any data project, different roles help move data through the stages of the data life cycle – planning, capturing, managing, analyzing, archiving, and destroying data. Typically, data analysts answer questions or solve problems by examining the data through a specific topic or lens, answering questions about what something is or why something happened, or even make predictions to drive informed decision-making.

Data analysts are responsible for communicating with managers and executives to understand their needs, and moving data through each stage of the data life cycle to meet those needs. When data analysts collaborate and communicate with other team members and stakeholders, they can more effectively identify relevant data, and provide more focused and impactful results through their analysis.

As a data analyst, you might be asked to work on a project to determine your company's most effective marketing strategy over the past five years. To complete this project, you collect and analyze data relating to marketing budgets for different strategies, such as print, email, and social media advertisements. You also analyze how many sales each of these strategies generated. By analyzing how much time and money was spent on each strategy, and the returns they provided for the company, you're able to identify the most effective strategies, and help stakeholders decide which marketing strategies they should focus more on moving forward.

Business intelligence

In your data career, you may work on business intelligence projects that focus on establishing repeatable methods to understand how a business is operating using real-time data. **Business intelligence** (BI) is the automation of processes and information channels in order to transform relevant data into actionable insights that are easily available to decision-makers. By clarifying the data, making it easier to work with, and identifying insights hidden within the data, BI professionals can more effectively communicate information that helps managers and executives make data-driven decisions based on current conditions.

A BI project may entail developing a centralized reporting system for real-time sales data from all of a company's locations nationwide. In this project, BI professionals might review the data each location is collecting, create a database that can house the data for all locations, and develop dashboards that contain real-time statistics and graphs to help stakeholders understand current sales trends.

Key takeaways

Data is ubiquitous and can provide useful information for those collecting it. Data analysts identify and analyze data to meet stakeholders' needs by identifying patterns in historical data, and making future-looking predictions on the data. BI professionals also help stakeholders understand data by creating systems that repeatedly make data easily and consistently available. No matter what type of data an organization is collecting, data analysts and BI professionals can identify insights to make data-driven decisions about their business practices.