Business Insights

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4 EXAMPLES OF BUSINESS ANALYTICS IN ACTION

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Data is a valuable resource in today's ever-changing marketplace. For business professionals, knowing how to interpret and communicate data is an indispensable skill that can inform sound decision-making.

"The ability to bring data-driven insights into decision-making is extremely powerful—all the more so given all the companies that can't hire enough people who have these capabilities," says Harvard Business School Professor Jan Hammond, who teaches the online course Business Analytics. "It's the way the world is going."

Before taking a look at how some companies are harnessing the power of data, it's important to have a baseline understanding of what the term "business analytics" means.

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WHAT IS BUSINESS ANALYTICS?

Business analytics is the use of math and statistics to collect, analyze, and interpret data to make better business decisions.

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1

There are four key types of business analytics: descriptive, predictive, diagnostic, and prescriptive. Descriptive analytics is the interpretation of historical data to identify trends and patterns, while predictive analytics centers on taking that information and using it to forecast future outcomes. Diagnostic analytics can be used to identify the root cause of a problem. In the case of prescriptive analytics, testing and other techniques are employed to determine which outcome will yield the best result in a given scenario.

Related: 4 Types of Data Analytics to Improve Decision-Making

Across industries, these data-driven approaches have been employed by professionals to make informed business decisions and attain organizational success.

Check out the video below to learn more about business analytics, and subscribe to our YouTube channel for more explainer content!

Business Analytics vs. Data Science

It's important to highlight the difference between business analytics and data science. While both processes use big data to solve business problems they're separate fields.

The main goal of business analytics is to extract meaningful insights from data to guide organizational decisions, while data science is focused on turning raw data into meaningful conclusions through using algorithms and statistical models. Business analysts participate in tasks such as budgeting, forecasting, and product development, while data scientists focus on data wrangling, programming, and statistical modeling.

While they consist of different functions and processes, business analytics and data science are both vital to today's organizations. Here are four examples of how organizations are using business analytics to their benefit.

BUSINESS ANALYTICS EXAMPLES

According to a recent survey by McKinsey, an increasing share of organizations report using analytics to generate growth. Here's a look at how four companies are aligning with that trend and applying data insights to their decision-making processes.

1. Improving Productivity and Collaboration at Microsoft

At technology giant Microsoft, collaboration is key to a productive, innovative work environment. Following a 2015 move of its engineering group's offices, the company sought to understand how fostering face-to-face interactions among staff could boost employee performance and save money.

Microsoft's Workplace Analytics team hypothesized that moving the 1,200-person group from five buildings to four could improve collaboration by increasing the number of employees per building and reducing the distance that staff needed to travel for meetings. This assumption was partially based on an earlier study by Microsoft, which found that people are more likely to collaborate when they're more closely located to one another.

In an article for the *Harvard Business Review*, the company's analytics team shared the outcomes they observed as a result of the relocation. Through looking at metadata attached to employee calendars, the team found that the move resulted in a 46 percent decrease in meeting travel time. This translated into a combined 100 hours saved per week across all relocated staff members and an estimated savings of $520,000 per year in employee time.

The results also showed that teams were meeting more often due to being in closer proximity, with the average number of weekly meetings per person increasing from 14 to 18. In addition, the average duration of meetings slightly declined, from 0.85 hours to 0.77 hours. These findings signaled that the relocation both improved collaboration among employees and increased operational efficiency.

For Microsoft, the insights gleaned from this analysis underscored the importance of in-person interactions and helped the company understand how thoughtful planning of employee workspaces could lead to significant time and cost savings.

2. Enhancing Customer Support at Uber

Ensuring a quality user experience is a top priority for ride-hailing company Uber. To streamline its customer service capabilities, the company developed a Customer Obsession Ticket Assistant (COTA) in early 2018—a tool that uses machine learning and natural language processing to help agents improve their speed and accuracy when responding to support tickets.

COTA's implementation delivered positive results. The tool reduced ticket resolution time by 10 percent, and its success prompted the Uber Engineering team to explore how it could be improved.

For the second iteration of the product, COTA v2, the team focused on integrating a deep learning architecture that could scale as the company grew. Before rolling out the update, Uber turned to A/B testing—a method of comparing the outcomes of two different choices (in this case, COTA v1 and COTA v2)—to validate the upgraded tool's performance.

Preceding the A/B test was an A/A test, during which both a control group and a treatment group used the first version of COTA for one week. The treatment group was then given access to COTA v2 to kick off the A/B testing phase, which lasted for one month.

At the conclusion of testing, it was found that there was a nearly seven percent relative reduction in average handle time per ticket for the treatment group during the A/B phase, indicating that the use of COTA v2 led to faster service and more accurate resolution recommendations. The results also showed that customer satisfaction scores slightly improved as a result of using COTA v2.

With the use of A/B testing, Uber determined that implementing COTA v2 would not only improve customer service, but save millions of dollars by streamlining its ticket resolution process.

> *Related*: How to Analyze a Dataset: 6 Steps

3. Forecasting Orders and Recipes at Blue Apron

For meal kit delivery service Blue Apron, understanding customer behavior and preferences is vitally important to its success. Each week, the company presents subscribers with a fixed menu of meals available for purchase and employs predictive analytics to forecast demand, with the aim of using data to avoid product spoilage and fulfill orders.

To arrive at these predictions, Blue Apron uses algorithms that take several variables into account, which typically fall into three categories: customer-related features, recipe-related features, and seasonality features. Customer-related features describe historical data that depicts a given user's order frequency, while recipe-related features focus on a subscriber's past recipe preferences, allowing the company to infer which upcoming meals they're likely to order. In the case of seasonality features, purchasing patterns are examined to determine when order rates may be higher or lower, depending on the time of year.

Through regression analysis—a statistical method used to examine the relationship between variables—Blue Apron's engineering team has successfully measured the precision of its forecasting models. The team reports that, overall, the root-mean-square error—the difference between predicted and observed values—of their projection of future orders is consistently less than six percent, indicating a high level of forecasting accuracy.

By employing predictive analytics to better understand customers, Blue Apron has improved its user experience, identified how subscriber tastes change over time, and recognized how shifting preferences are impacted by recipe offerings.

   Related: 5 Business Analytics Skills for Professionals

4. Targeting Consumers at PepsiCo

Consumers are crucial to the success of multinational food and beverage company PepsiCo. The company supplies retailers in more than 200 countries worldwide, serving a billion customers every day. To ensure the right quantities and types of products are available to consumers in certain locations, PepsiCo uses big data and predictive analytics.

PepsiCo created a cloud-based data and analytics platform called Pep Worx to make more informed decisions regarding product merchandising. With Pep Worx, the company identifies shoppers in the United States who are likely to be highly interested in a specific PepsiCo brand or product.

For example, Pep Worx enabled PepsiCo to distinguish 24 million households from its dataset of 110 million US households that would be most likely to be interested in Quaker Overnight Oats. The company then identified specific retailers that these households might shop at and targeted their unique audiences. Ultimately, these customers drove 80 percent of the product's sales growth in its first 12 months after launch.

PepsiCo's analysis of consumer data is a prime example of how data-driven decision-making can help today's organizations maximize profits.

DEVELOPING A DATA MINDSET

As these companies illustrate, analytics can be a powerful tool for organizations seeking to grow and improve their services and operations. At the individual level, a deep understanding of data can not only lead to better decision-making, but career advancement and recognition in the workplace.

"Using data analytics is a very effective way to have influence in an organization," Hammond says. "If you're able to go into a meeting, and other people have opinions, but you have data to support your arguments and your recommendations, you're going to be influential."

Do you want to leverage the power of data within your organization? Explore *Business Analytics*—one of our online business essentials courses—to learn how to use data analysis to solve business problems.

This post was updated on March 24, 2023. It was originally published on January 15, 2019.

About the Author

Matt Gavin is a member of the marketing team at Harvard Business School Online. Prior to returning to his home state of Massachusetts and joining HBS Online, he lived in North Carolina, where he held roles in news and content marketing. He has a background in video production and previously worked on several documentary films for Boston's PBS station, WGBH. In his spare time, he enjoys running, exploring New England, and spending time with his family.