

Using Big Data on a Small Budget to Improve Real-Time Decision-Making



For years, companies looked to data tracked by their finance and accounting departments primarily as a way to understand past performance. But quantum leaps in computing power and other technology have made it possible for organizations to move far beyond historical analysis.

Today, companies can uncover insights that enable them not only to make near-term decisions with confidence, but also to perform predictive analytics—using data to forecast and compare the impact of various potential strategic decisions—to gain a significant competitive advantage.

Companies that systematically use such insights have been growing at more than 30% annually on average, according to a recent [Forrester Report](#).



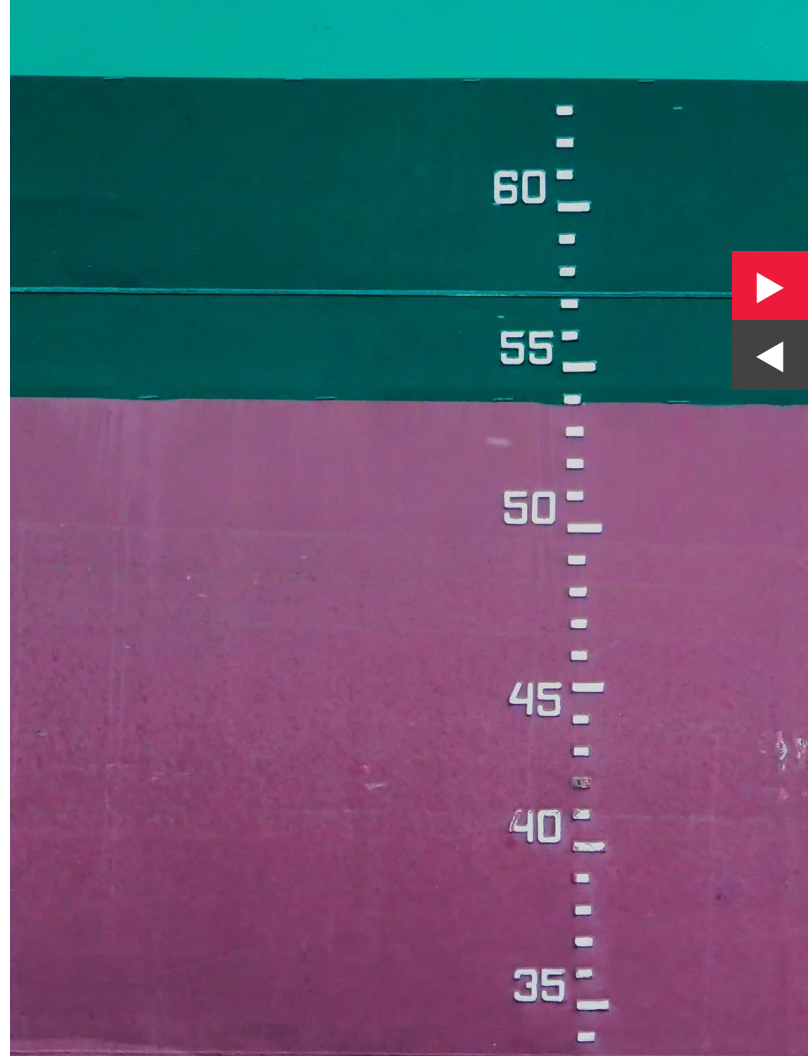


For small- and mid-sized companies that may not have enterprise-level resources to invest in advanced analytics software or personnel, the idea of adopting a fully predictive model may seem out of reach. Concepts such as data analytics, business intelligence and machine learning may seem so daunting that many smaller organizations do nothing because they don't know where to start.

But your data-management plan doesn't need to be perfect for it to yield valuable business insight. The key is to follow a process that is systematic yet scaled to fit your company size and resources, as outlined in the following six steps.

1. Identify What You Want to Measure

Consider what key performance indicators (KPIs) would have the biggest impact on your decision making and the company's financial performance. Prioritize your wish list and select just a few KPIs to track and measure. Companies commonly select indicators that relate to revenue, expenses and cash flow, but the KPIs that will be most valuable for your organization will depend on a number of factors, including the nature of your industry as well as your business priorities.





In the manufacturing industry, for example, insight about how your prices, cost of goods sold and gross margins compare to industry averages could help you decide whether to focus on the revenue or cost side of your margin equation. But a biotech firm may benefit more from knowing how it compares to competitors in measures such as the length of clinical trials or time to market.

When considering what to measure, begin with the end in mind. Envision how the information will be displayed on your data dashboard, who will access it and how it will be incorporated into the decision-making process. Also, keep in mind that new privacy laws and other compliance regulations may restrict the collection and storage of certain types of data.



2. Take a Data Inventory

Before you can identify opportunities to turn your data into actionable insights, you must first understand what data you currently have. Somewhat ironically, with smaller companies, the challenge often isn't a lack of data; rather, smaller companies often have an overwhelming amount of data stored across disparate systems.

If this is the case, you don't need to invest in new software or complex processes to gain control over your data. You can make significant headway simply by talking with your existing team. Start by asking everyone who interacts with data to tell you where they get it and how they use it.

From these conversations, you can create the three key documents that form the foundation of your new data-management system:

- ▶ A data register of your current data processes
- ▶ A data-flow diagram showing how data enters, leaves and moves around your organization
- ▶ A data map depicting where various data lives and in what form

By allowing you to take inventory of and locate all of your data, these tools can also help you comply with new privacy regulations that may require you to furnish or delete information about individual consumers upon request. Often, companies can lower their risk exposure by purging data that isn't essential.



3. Seek Out External Data Sources

Regardless of how extensive your efforts are to capture and manage information about your company's operations and finances, the value of this information is limited by the fact that it is drawn only from within your four walls. You will likely be able to glean deeper, more valuable insight from your internal data by pairing it with—and comparing it to—data from external sources and industry benchmarks.

This exercise requires you to put on your data scientist hat and get creative in thinking about what sorts of information would be most valuable in augmenting your visibility into the factors that affect your company's operational efficiency and financial performance.

For example, suppose you are a concession vendor at a baseball stadium and want to optimize how you staff and supply your food carts to meet the demand for hot dogs, beer and ice cream—all of which are highly dependent on the weather. By pairing your past sales figures with data from the National Weather Service, you could recognize historical patterns that would allow you to anticipate demand based on the forecast for the coming week.

Better yet, you may also be able to access information from a third-party research company about concession sales at ballparks in other cities and run additional weather-based regression analyses.

The good news is that massive quantities of information are available today for no or low cost, often in the time it takes to run a Google search. More detailed industry-specific data often can be purchased from third-party research companies—and, when used properly, it can have a high return on investment.



4. Consolidate Your Data

Before you can extract reliable business intelligence from the data you have collected, you need to structure and organize it in a way that makes sense. The required adjustments will depend on your unique data sets, but you may need to integrate data from multiple sources into a single destination, segment large blocks of data into smaller subsets or standardize the format of various data points. This step might be the most time-consuming and technically demanding part of the process, but it is essential.

Coming back to the food cart example, imagine if the time intervals for your sales figures and weather data didn't match up or if the weather data didn't provide enough precision to allow you to look at the hourly conditions during the actual games. Even if you had accurate measurements in each data set, it would be impossible to draw meaningful conclusions. Furthermore, each data set needs to be structured and formatted so it can be merged within your analytics tool.





5. Report Your Data

Unless your data is presented to decision-makers in a user-friendly format that enables them to take timely action, it is like a tree falling in the forest with no one around to hear it. Develop a data dashboard to display your KPIs in a way that allows you to see clear patterns and discover correlations. It should focus attention on key measurements, enabling you not only to make real-time decisions, but also to evaluate the results of those decisions in a timely manner.

While large enterprises may have sophisticated reporting software and a team of data analysts, you don't need all of that to extract real-time insights from your data. For many companies, Excel software may be sufficient. Other affordable tools, including Tableau and Power BI, offer robust reporting and analytics capabilities. And free online tutorials make it easy for someone to learn how to use these tools to build a useful dashboard and manage data reporting.



6. Plan for Change

Perhaps the most significant determinant of how much value you will derive from your new approach to predictive analytics is your employees' willingness to adopt it. That is why you should be proactive about managing the people piece of the process.

Create a plan to ensure that employees understand how and why to integrate analytics into their day-to-day operations not only to find solutions to existing problems but also to generate new ideas for moving your business forward.

As technology advances and business priorities evolve, your data management process needs to adapt. Consider establishing a steering committee to regularly evaluate your data-analytics efforts. This group might initially review the dashboard in light of the organization's current goals and then focus on ensuring it continues to align with the long-term growth strategy.



Data can be intimidating. We are here to help.

If the idea of using data to enhance real-time decision-making at your company seems daunting, BDO can help. We realize that data management isn't a one-size-fits-all endeavor.

We have extensive experience helping companies of all sizes move from backward-looking reporting to true predictive analytics that drives business intelligence. Our rapid analytics assessment is designed to guide you through a streamlined and cost-effective process that yields immediate results.



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