Creating a Dynamic Strategy Through Business Analytics

By Jay Snyder

Using business analytics to create a data-driven culture that helps E&C companies fine-tune their business strategies and continually improve their operations.

As the volume of data that the world is generating continues to proliferate, companies across all industries are finding new and unique ways to put that intelligence to work. The engineering and construction (E&C) sectors are no exception. By incorporating business analytics, key performance indicators (KPIs) and operational dashboards into their day-to-day activities, companies can track current performance, review historical activity and empower better decision-making.

The problem is that most of today's E&C organizations are drowning in data, much of which just isn't captured, organized and managed effectively. Understanding which data can be useful and how it translates into business intelligence, for example, requires strategic planning and a clear understanding of your organization's overall goals and vision.

Companies that successfully apply business analytics can leverage those insights to improve daily operations and increase overall organizational performance. For best results, company leaders and their constituents must define their metrics carefully, use visual tools such as digital dashboards, and give the appropriate users access to relevant operational and financial data. In this article, we explore the concept of business analytics and discuss how dashboards can help E&C firms fine-tune their strategy ahead of the inevitable economic downturn.

What Is Business Analytics?

In today's information age, managing data has become big business. The business analytics industry is expected to reach $71.1 billion by 2022, growing at a compound annual growth rate (CAGR) of 6.9% from 2015 to 2022.[1] Encompassing raw materials, emails, financials, survey responses, mobile data usage, timecards and more, data is only "useful" if you have defined your business problem and understand *what data will help you* answer the business problem or question that you're trying to figure out.

That's where business analytics comes into the picture. The art and science of discovering insights by using sophisticated mathematical, statistical, machine learning and network science methods along with a variety of data and expert knowledge, business analytics helps to support better, faster and timelier decision-making. At its core, analytics is an enabler for decision-making and problem-solving.[2]

Using dashboards or other reporting tools to drill down into certain areas of their businesses, E&C firms can shine a light on aspects of the business that need more focus and attention. Then, once those areas have been uncovered and addressed, companies can effectively leverage data and analysis to get to the truly "useful" information that correlates with their key pain points (e.g., margin gains/fades, labor productivity, employee turnover, rising costs of doing business, etc.). To be most effective, data analytics must be married with a visual analytics dashboard that a broad range of users can access, review and make decisions on in real time. However, while a data analytics platform can greatly improve business performance, those results won't come overnight. By having a clear understanding of the time frame and rollout process, you can more easily manage expectations during this transition (see FMI's article "Big Data = Big Questions for the Engineering and Construction Industry" for more details).

Wanted: A Tech-Savvy and Data-Driven Culture

Using business analytics to track business outcomes and/or examine operational or strategic blind spots can help identify early warning signs and allow companies to take corrective action before these issues turn into major problems. However, the majority of firms struggle to make this work–the proof is in the numbers:

- In an HBR survey of approximately 700 business professionals, only 3% of respondents said they are able to act on all of the customer data they collect; 21% say they can act on very little of it.

- Just 48% of organizations currently have analytics systems, and only 36% possess big data analytic solutions. Forty-two percent say that their analytic systems don't meet current needs.

These numbers reveal a business world where very few organizations are capable of fully leveraging the power of their data. While getting the right tools may be as simple as buying a software program, finding the right people is a more difficult task. To successfully gain insights from your data, assemble a team that not only has a background working within the built environment and understands the life cycle of project work, but also has strong research and analytical skills to best leverage your data to improve business performance. Companies that don't invest in the right people often experience disappointing failures and are slow to realize a return on their investment (ROI).

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[1] Stratistics MRC

[2] Dursun Delen and Sudha Ram. "Research challenges and opportunities in business analytics." Journal of Business Analytics. Volume 1, 2018 - Issue 1.

Over the coming years, as the E&C industry continues to undergo a rapid digital transformation, leaders must continually assess their organization people needs and adapt their talent strategies. Not only is the industry competing over its own talent pool, but it is also going head-to-head with technology companies such as Google, Apple or Uber that attract data scientists and a broad range of IT specialists. In this context, and knowing how important talent management is for younger generations, it must also become a top priority for E&C firms.

Focusing on What Really Matters

Here at FMI, we believe that any strong strategy must be based on facts. The main benefit of using an advanced business analytics dashboard can be boiled down to one word: focus. That's really what it's all about. With this data in hand and available in a user-friendly dashboard format, companies can focus on **what really matters**.

In today's market, we're inundated with information daily from multiple sources pertaining to various different items. Using a data dashboard, companies can look at all that data in a single, consolidated place and extract the salient points from that data. That's easier said than done though. Most of today's E&C firms face multiple disconnected data sources, which contribute to a number of issues including:

- Data silos can affect many parts of your organization, such as finances/budgeting, information technology, human resources, etc.

- Data silos can slow your company down—silos create an incomplete picture, making it more challenging for leaders to make informed decisions.

- Data silos limit communication and collaboration within and outside of your organization.

- Data silos decrease quality and credibility of your data—isolated data can quickly become obsolete or inaccurate.

- Data silos reduce efficiency and storage.

If these inefficiencies persist, E&C firms' bottom lines and productivity rates will be negatively impacted. This is particularly critical in light of increasing project complexity and growing demand for new E&C projects.

"Like it or not, every construction company—and solutions provider—is now also in the data business. How well we help our customers transform that data into intelligence that drives better decisions to deliver projects more efficiently and more sustainably, with higher quality, lower costs and fewer risks, is what defines the next frontier of construction management. Data is the key to improving the bottom line as well as protecting it. Our ability to break down data silos and transform raw data into action and intelligence is the crux to solving most challenges that rear their head in our industry. Solve the data problem and everything else falls into place."

– Jon Figland, General Manager, Collaboration Solutions, Trimble

These realities are driving the need to break down silos across the industry and find ways to increase collaboration, consistency and efficiency on E&C projects. As most executives already know, siloed information can slow down processes, impede the flow of information and decrease productivity. When those silos are "flattened" out, those challenges begin to fade. Using dashboards to create automated workflows among stakeholders on a project, for example, can keep all parties informed with real-time information to create a more effective process. This, in turn, helps reduce delays and ensures that all parties have access to up-to-date information on a 24/7/365 basis.

More Continuous Intelligence Ahead

By 2022, more than half of all major new business systems will incorporate continuous intelligence (a design pattern in which real-time analytics are integrated within a business operation, processing current and historical data to prescribe actions in response to events) that uses real-time context data to improve decisions, according to Gartner. Those E&C firms that get onboard now will be best positioned to take advantage of these advanced technologies and the continuous improvement benefits that they provide.

"The size, complexity, distributed nature of data, speed of action and the continuous intelligence required by digital business means that rigid and centralized architectures and tools break down," Gartner's Donald Feinberg said in a press release. "The continued survival of any business will depend upon an agile, data-centric architecture that responds to the constant rate of change."

Progressive, data-driven E&C companies are already capturing and analyzing many different data points, pinpointing correlations between operational and strategic variables, and determining which levers actually *increase* the value of an organization and improve its operational performance. Using business analytics, the same companies can rerun the analyses, measure the effects and tweak their strategies even further. This type of *dynamic* strategy approach allows companies to reap the rewards of continuous improvement in any business environment.

Jay P. Snyder is the technology practice leader with FMI. Jay has been in the engineering and construction industry throughout his entire career. He has industry experience as a construction project executive; corporate director of planning, design and construction for a health care system; founder and managing partner of a risk management tech startup company; and as a valued business consultant. He can be reached via email at *jsnyder@fminet.com*.

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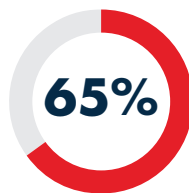
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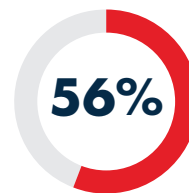- Utility T&D

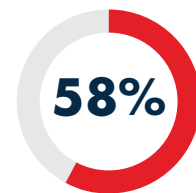# FMI Client Highlights
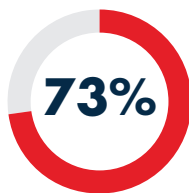
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Top-400
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CONTRACTORS

65%
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SPECIALTY
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57%
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DESIGN
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