



GUEST EDITORS' PERSPECTIVE

Business analytics: Why now and what next?



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Abstract Business analytics is a revolution that is impossible to miss. At its core, business analytics is about leveraging value from data. Instead of being referred to as the 'sludge of the information age,' data has recently been deemed 'the new oil.' While data can be employed for purposes such as detecting new opportunities, identifying market niches, and developing new products and services, it is also notoriously amorphous and hard to extract value from. In this Guest Editors' Perspective, we first present a structural framework for deriving value from business analytics. Extracting value from data requires aligning strategy and desirable behaviors to business performance management in conjunction with analytic tasks and capabilities. We then introduce three special articles that provide in-depth insights regarding how business analytics is being employed in the management of healthcare, accounting, and supply chains.

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1. Introduction

According to a report entitled *Extracting Value from Chaos* (Gantz & Reinsel, 2011), a staggering 1.8 zettabytes of data were generated in 2011. Companies such as Walmart handle more than 1 million customer transactions per hour, producing 2.5 petabytes of data in a 24-hour period; Facebook manages 300 million photos and 2.7 billion 'likes' per day, thus contributing 100 petabytes of data to its warehouse; and eBay has a single table of web clicks featuring more than 1 trillion rows. All the data being collected will enable us as a society to do things we could not before: spot business trends,

better manage risks, and enhance competitiveness, thereby creating value for the world economy (Manyika et al., 2011). A search on Google Scholar suggests that 19,400 articles have been published on business analytics since 2012, which equates roughly to one per hour. It is no wonder that Davenport and Patil (2012) recently declared data scientist as the sexiest job of the 21st century.

The analytics revolution has been impossible to miss. Articles in the popular media and literally dozens of business- and technology-related books have described the exciting possibilities—and sometimes worrisome implications—of the collection, storage, and analysis of massive amounts of data. Data is being collected about virtually every aspect of human activity. This data is generated by carefully designed experiments and rigorous investigations as well as incidental 'exhaust' from the operation of vehicles, factories, and natural phenomena. The

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term 'data mining' was once a sort of pejorative used to describe unguided sifting through numbers in hopes of discovering insights which upon more careful inspection were found to be too fragile or illusory. Today, data mining and related techniques have become accepted and often lead to useful, if sometimes surprising, discoveries.

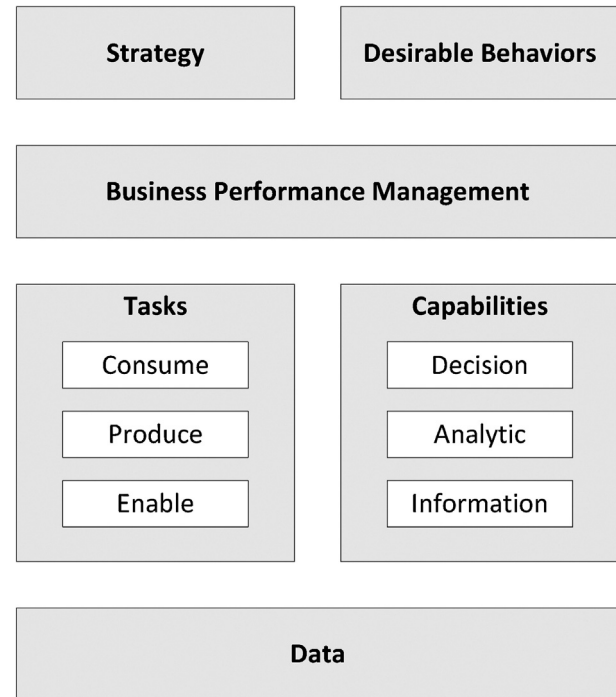
Applications of data-driven techniques abound in incredibly diverse areas. Manufacturers are embedding sensors into both consumer and industrial products, ranging from automobiles and refrigerators to jet engines and power turbines. Music services such as Pandora can recommend tunes based upon user preferences, and Shazam can identify songs by comparing sound snippets to digital databases. Systems have also been developed to assist radiologists in evaluating mammograms for cancer by comparing images pixel by pixel to tens of thousands of stored examples of normal and abnormal scans. Recommendation systems that suggest what products to buy are tailored to personal preferences and past behaviors. The list of applications is astonishingly diverse and growing rapidly.

At its core, business analytics is about leveraging value from data. Instead of being referred to as the 'sludge of the information age,' data has recently been deemed 'the new oil.' While data can be employed for purposes such as detecting new opportunities, identifying market niches, and developing new products and services, it is also notoriously amorphous and hard to extract value from. [Figure 1](#), which presents a structural framework for deriving value from business analytics, indicates how extracting value from data requires aligning strategy and desirable behaviors to business performance management in conjunction with analytic tasks and capabilities.

A *strategy* is a purposeful plan of action that requires making choices regarding the deployment of resources ([Mintzberg, 1987](#)). Who are the customers that we should target? What products and services should we include in our portfolio of offerings? What unique position should we take with respect to the marketplace? What processes help differentiate us from the competition? Without a strategic context, an organization cannot decide what data to focus on or even what it is trying to achieve with an analytics initiative ([Davenport, Harris, DeLong, & Jacobson, 2001](#)). Davenport et al. suggest that a strategic business case for an analytics initiative can be used to create organizational support and obtain funding.

Desirable behaviors refer to beliefs and culture that are embodied in the corporate value statement, mission statement, rituals, and structure. It is the unique desirable behaviors in an enterprise

Figure 1. Structural framework for business analytics



that create value ([Weill & Ross, 2004](#)). [Davenport et al. \(2001\)](#) suggest that the decision to centralize, decentralize, or outsource analytic initiatives is contingent on the sophistication of analysis, the amount of local knowledge needed for decision making, and the cultural orientation of the firm. They also suggest that culture that values data-based decision making is critical to the success of analytics initiatives.

Business performance management—studied from many different perspectives such as accounting, business strategy, manufacturing and operations management, marketing, and organizational behavior—seeks to understand two fundamental questions ([Neely, 1999](#)): (1) How can business performance be measured? and (2) What are the determinants of business performance? Considering the multi-faceted nature of business performance, the question of how it can best be measured has been addressed otherwise by scholars in different disciplines. The rise of analytics is in some ways related to the notion of using performance measures as means of testing one's hypotheses about businesses (see [Drucker, 1990](#)).

In an organization, the analytically engaged participants can perform three tasks: produce and/or consume insights and enable the creation of insights ([Chandler, Hostmann, Rayner, & Herschel, 2011](#)). The framework presented in [Figure 1](#) focuses on

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