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Making Data-Driven Decisions in the Digital Age

By Dominic Barton

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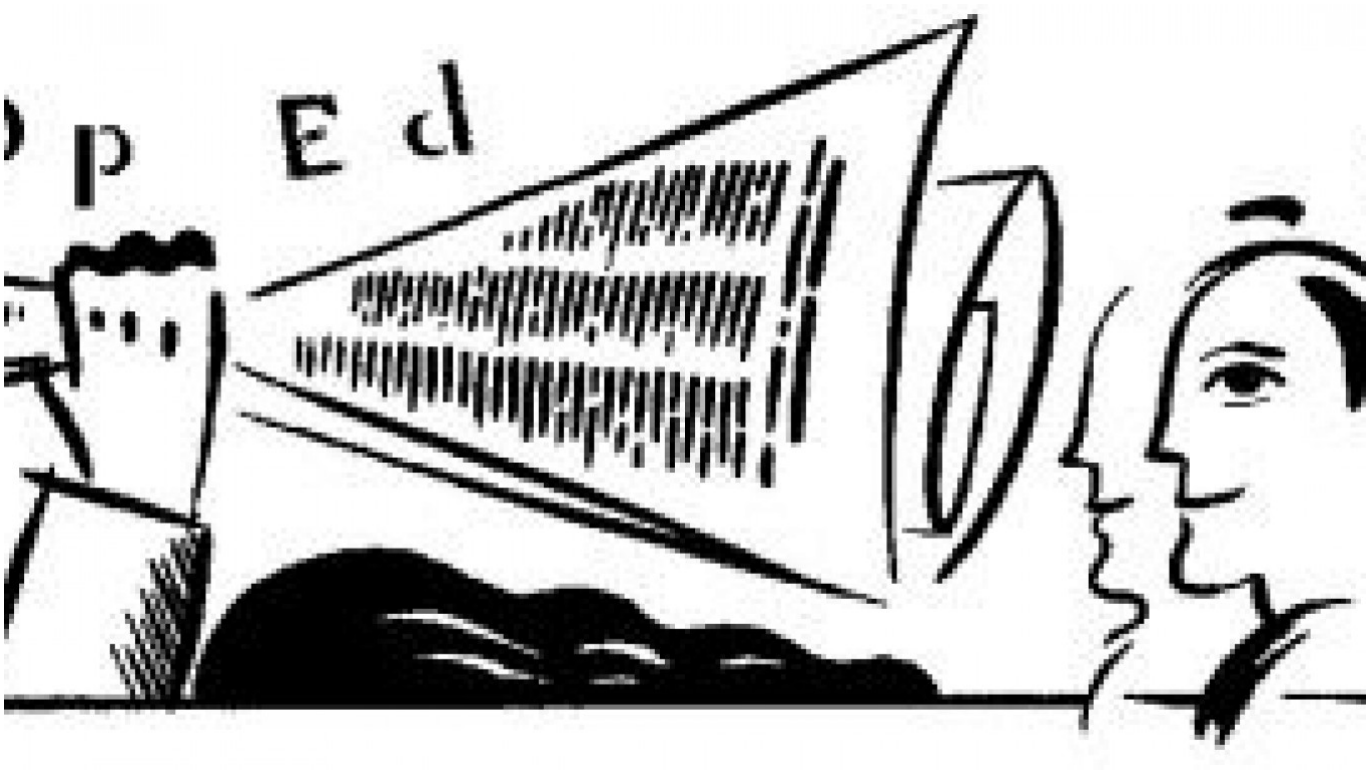

The year 2013 moved the world further into the Digital Age, a global epoch of changes whose likely impact on the world economy will be two or three times greater than that of the Industrial Revolution. Some 90 percent of the world's total data were created in the past two years. By 2020, the quantity of stored data could be 50 times greater than it was in 2010. Many pundits regard this massive explosion of data as the new oil, even a new asset class.

This profusion of data is being fueled by the near-ubiquity of the Internet. Smart phones are set to connect an additional 2 billion to 3 billion people by 2020, with billions of machine sensors monitoring everything from tractors to jet engines, and further breakthroughs in computing power enabling massive increases in data storage and analysis.

In this environment, fluency in data management and analytics will be vital for successful organizations. A study published in 2011 by Massachusetts Institute of Technology's Erik Brynjolfsson and his colleagues found that companies using data-driven decision-making had a 5 to 6 percent higher productivity rate than those that did not. The ability to capture,

organize, extract from and transact with data has now become a core competency for every industry and across every sector.

The disruptions resulting from the new crucible of data and analytics are spreading across both the public and private sectors. Netflix, the popular video-streaming website, used its vast database of user searches, views, pauses and reviews to design the made-for-the-Internet series "House of Cards." The series brought together a popular director, David Fincher, actor, Kevin Spacey, and plotlines borrowed from a popular British show with the same title — all of which scored highly on Netflix's popularity metrics.

In other industries, too, data-driven decision-making in product development, marketing and customer interactions is fast becoming the standard, supplementing and in some cases replacing intuition and experience. It is also streamlining supply chains, refining workforce schedules, and optimizing manufacturing processes.

More significant disruption is likely to occur across industries, as privileged access to proprietary data redraws competitive battle lines. Companies with deep data sets will increasingly have the ability to play in markets outside their traditional domains — and leaders already are seizing the opportunities. At Alibaba, the Chinese e-commerce company, small and mid-size vendors in its network can also apply for credit. Alibaba has financed the working capital of 320,000 companies more than $16 billion using transaction data to underwrite the lending, and it has done so far more efficiently than the average bank.

Governments, too, are sensing that data analytics can change their global standing. Singapore, for example, has a 10-year master plan that focuses on the development of a robust information and communications industry, including data analytics. More recently, the authorities launched an open-data initiative, making vast amounts of government data easily accessible.

And yet, though many organizations recognize the importance of data analytics, there is wide variation in how aggressively they have moved to embrace it. Early adopters, such as Amazon and Tesco, which quickly built up the requisite talent bases and experience, are now shifting gears to maximize the impact of analytics on their organizations that is, exploring disruptive opportunities. Many more organizations, however, are still only conducting small-scale experiments and hiring their first data scientists.

The good news is that many companies will be able to accelerate the pace of change. Talent is one promising area. Tapping the potential of data analytics requires deep pools of advanced technical expertise. To be sure, workers skilled in data management and advanced analytics are in short supply, as are members of an emerging class of "translators" — those whose talents bridge IT and data, analytics and business decision-making.

Translators are essential to complex transformation efforts that cross many business functions. Universities are quickly adapting to meet the swelling demand, and many have initiated interdisciplinary programs that combine analytics and business expertise.

Rapid advances in technology are also making it easier to realize the impact of analytics. One of the biggest challenges for many companies has been to convert insights from statistical models into real changes in day-to-day operations. Individuals on the front lines have lacked

intuitive tools that link insights to action. But advances in data visualization, faster development cycles for applications and the steady consumerization of technology are changing that, putting customized, easy-to-understand solutions in managers' hands.

For example, the Climate Corporation, recently acquired by Monsanto, combines more than 30 years of weather data, 60 years of crop yield data and multiple terabytes of information on soil types. With that reservoir of historical information and sophisticated algorithms, the company offers fee-based advice to farmers through an intuitive online portal.

As organizations pursue these opportunities to innovate, boost revenues or increase productivity, leadership teams will also need to adjust. Defining new data-driven strategies, managing massive new stores of information, reaching out to new partners, managing across functions and energizing the organization around a new mission will likely require new management capacity.

Firms innovate organizationally all the time. In 1961, Ampex, a California electronics manufacturer, became the first company to use the term "chief financial officer" formally. Today, that role is ubiquitous.

Leading in the Digital Age may require creating new roles such as chief digital officer, chief analytics officer or chief data officer, though relatively few companies so far have taken such steps. In the future, an organization's overall success will require that the leader responsible for such capabilities be a trusted member of the top management team.

Few leaders have ever developed management muscle in completely new fields while assembling teams combining previously unknown types of talent. The strategic options confront equally fresh terrain, perhaps similar to when mass media ushered in a new era of marketing, or globalization required radical reshaping of organizational footprints.

In 2014 and beyond, CEOs and their boards will need to establish new priorities, invest wisely and be willing to support experimentation. In times when major disruption is certain, the enormous potential rewards accrue to those who, while vigilant against risk, are prepared to act boldly and swiftly.

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