

Leadership and Big Data Innovation

A HARVARD BUSINESS REVIEW WEBINAR FEATURING

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OVERVIEW

As devices, sensors, and new technology platforms generate ever more Big Data, organizations have new opportunities to gain important insights that can spur innovation, bring new products and services to the market, and create a competitive edge. But unless organizations begin to treat data as a key asset that is just as important as their financial assets, those opportunities will be missed.

To survive and thrive in the Big Data era, organizations must implement new governance models, create dashboards of information shared across the company, encourage an environment of “experiment and scale,” and cultivate a culture that incorporates data into the everyday activities of the business. And the message needs to come from the top: the kind of data-driven transformation that most companies need will demand commitment from the C-suite.

CONTEXT

Michael Schrage discussed how leaders can promote innovation through Big Data and analytics.

KEY LEARNINGS

To create new value, organizations must treat data as an asset.

In many cases, organizations use analytics to optimize existing sources of value, rather than leveraging data and analytics to innovate and create new value. To create new value, organizations must treat data as an asset, just like capital and human resources.

In just the next 12 to 18 months, organizations can expect to gather 10 to 1,000 times more data. As data assets grow, opportunities exist to create new value through more efficient processes, new value propositions, enhanced customer experiences, and more. Organizations must ask themselves how they would sell or market to customers and prospects differently, if they had 100 times more data about them.

Purposeful analytics like KPIs and dashboards support innovation and value creation.

Purposeful data and analytics can be applied to a variety of business activities, such as customer retention, upselling and bundling, and identifying new products and services. Both KPIs and dashboards support purposeful analytics.

To harness data to outcomes that matter, enterprises must align application programming interfaces (APIs) with KPIs. It is also important to think about dashboards related to innovation and new value creation. Key questions include what these dashboards would look like and which KPIs they would include.

CONTRIBUTORS

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“Organizations should expect 10 to 1,000 times more data in the next 12 to 18 months. To make data more valuable, organizations must consider how to define, measure, and assess value creation inside the enterprise and outside.”

– MICHAEL SCHRAGE

From an organizational perspective, siloed organizations lead to siloed KPIs. Schrage suggests viewing data as a “solvent” that breaks down siloes and creates virtuous cycles within organizations. Insights gathered from analytics related to customer retention, for example, may inform analytics related to innovation.

Big Data requires “little experiments.”

When an insight is identified in data, the next step is to determine which tests will validate whether the insight is true or not. More and better experimentation is needed. This means socializing experiments across the enterprise. New data should facilitate collaboration around experiments focused on new value creation.

Data leadership demands data governance.

Data oversight is the next leadership challenge for organizations. Explicit data governance is needed to determine who has access to data, who can experiment with it, and more. Observations related to data governance include:

- **Data stewards are a new category of colleague.** The data steward role involves planning, implementing, and managing the sourcing, use, and maintenance of data assets in an organization. Data stewards enable organizations to take control and govern all the types and forms of data and their associated libraries or repositories.
- **Data governance plays a major role in company growth.** Serious growth and value companies have C-suites that are committed to data as an asset and to data management.
- **Data governance working groups must be unified around the idea that data resources can be transformed into new value.** Data governance working groups create the vision for the organization. It is important to have members who are committed to collaboration, data sharing, customer data protection, and developing data as an asset. Schrage recommends against having CFOs run data governance working groups, as they may overweight capital as an asset.

“Organizations need a fundamental paradigm shift. Innovation will no longer be based on an R&D pipeline, but on an ‘experiment and scale’ model. Experiments are the future of business innovation.”

– MICHAEL SCHRAGE



Figure 1
Elements of Data Governance

As data volumes increase, the importance of an enterprise data culture grows.

To promote an enterprise “value of data” culture, organizations often need to make behavioral, cultural, and operational improvements. Examples of these shifts include:

- **API development.** To generate value, people expect to share data sets across the organization. APIs are essential to accomplish this.
- **Testing “gut feel” ideas with data-based experiments.** Many senior managers make decisions based on “gut feel,” rather than using experiments to challenge their perceptions. Ideas based on intuition aren’t bad, but they must be accompanied by testable business hypotheses. As Schrage noted, “Many good ideas evaporate on contact with the real world.” Data helps extract signals from the noise.
- **Deploying incentives to promote information sharing.** If data is equated with power, some people are inclined to hoard it. To promote information sharing at a large telecom, Schrage created an internal competition called “we were robbed” and “thief of the week.” These programs rewarded people for “stealing” data from other parts of the organization to create new value.
- **Revising performance review criteria.** Employees may be evaluated on how well they share data, as well as to what degree their decision making is driven by richer sources of data over time.

OTHER IMPORTANT POINTS

- **Self-quantification.** Schrage believes that individuals who engage in self-improvement every day will have an edge in the job market. People need to be more introspective about ways they add value in the workplace and must use data as a mirror to see themselves differently. For example, at the end of the day employees could analyze the content of their emails and texts using a [Wordle](#). Being data driven and self-aware are two sides of the same coin.
- **Data and risk appetite.** Organizations may use data to rethink their risk appetite. Insights derived from data are one way to create “guardrails” that can increase comfort with risk. Major “bet the company” decisions should always be data driven.
- **Data scientists.** Some organizations place data scientists in a center of excellence, while others implant them in different groups. Regardless of where data scientists “live” in the organization, they should be expected to collaborate with the business and serve as a resource, like a good financial expert. Data scientists help teams achieve their goals by drawing on data as an asset.

BIOGRAPHIES

**Michael Schrage**

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A fellow with the Massachusetts Institute of Technology (MIT) Sloan School's Initiative on the Digital Economy and a visiting scholar at Imperial College's Innovation and Entrepreneurship program, Michael Schrage is author of *The Innovator's Hypothesis* (MIT Press 2014) and *Who Do You Want Your Customers To Become?* (Harvard Business Review Press 2012).

His research, writing, and advisory work focuses on the behavioral economics of models, prototypes, and experiments as collaborative media for managing innovation risk. His current research explores how network effects influence investment in innovation and human capital. He has consulted for firms including Prudential, Microsoft, Siemens, NASDAQ, Mars, BT, Google, SAS, Siemens, BASF and Lego.

Previously, a Merrill Lynch Forum Innovation Fellow and founder/executive director of its Merrill Lynch Innovation Grants Competition for doctoral students worldwide, Schrage is now an angel investor in several digital media and machine learning start-ups.

He is a featured and top trafficked blogger on the *Harvard Business Review* site. His work has been published the *Sloan Management Review*, the *Financial Times*, *The Wall Street Journal*, the *Nikkei Asian Review*, the *CACM* as well as other peer-reviewed publications.

**Angelia Herrin (Moderator)**

Editor, Special Projects and Research, Harvard Business Review

Angelia Herrin is the editor for special projects and research at HBR. Her journalism experience spans 25 years, primarily with Knight-Ridder newspapers and *USA TODAY*, where she was the Washington editor. She won the Knight Fellowship in Professional Journalism at Stanford University in 1990. She has taught journalism at the University of Maryland and Harvard University.

Prior to coming to HBR, Angelia was the vice president for content at womenConnect.com, a website focused on women business owners and executives.

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Sponsor's Perspective

Can you feel it? A quickening. Like an accelerating heartbeat, innovation is pulsing through organizations and even entire industries faster and faster, changing them forever. It's a phenomenon that is enabled, in large measure, by analytics.

Combinations of traditional and new technologies, of established best practices with new approaches, are happening in concert with a drop in the cost for data storage, transmission and processing. This results in a significant impact from applications of the internet of things, machine learning, cognitive computing, Hadoop, cloud computing and other transformative technologies.

But while analytics, technologies, and even knowledge are critical drivers for innovation, they aren't the totality. More is needed: the right data-driven approach and a self-aware mindset.

Truly analytically driven organizations are evolving their business processes and their very structure in ways that position them to benefit from this analytic innovation revolution. This approach is driven by a mindset that starts with leadership and ideally spreads throughout the organization.

Executive leadership must know how to hire "quantified" people and encourage the development of an analytically driven attitude and culture among individuals. In its simplest terms, people who know what makes them effective will be more effective.

Yet while it seems obvious that how a company is led affects the degree to which innovation is embraced and optimized, it is easier said than done. So how can leaders focus their organizations so they can successfully deploy these new technologies?

At SAS, innovation isn't just a buzzword. Not only is it embedded into our culture, it's the main commodity that we offer our customers. We put thought and research into ideas that matter – and then create analytics solutions that improve your business.

From a technology perspective, we offer the world's most advanced analytics to help meet a wide range of operational needs with scalable performance and reliability. But perhaps more importantly, we can offer guidance and strategies to help you become a truly data-driven organization.

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