

TIME-BASED COMPETITION WITH FAST DATA

CREATING LASTING ADVANTAGE IN THE DIGITAL ERA

by Wolfgang Thiel, Frank Plaschke, Martin Reeves, Erik Lenhard, and Marc Rodt

BIG DATA IS A big deal. That's what the business press has been saying almost incessantly for two years.¹ As the subject of cover stories, features, explainers, and how-to guides, big data has garnered some 55,000 mentions in publications since 2010—more than 48,000 so far in 2013.

But the focus on the eye-popping numbers associated with big data may obscure an equally important part of the story. For while the press and many companies continue to marvel at the sheer volume of data being generated and captured in the Internet era, forward-leaning corporations have already recognized that big data's transformative potential to generate value in both the digital and physical realms will go largely unrealized unless it's complemented by speed. Fast data can unlock the value-creating power of big (and small) data.

Time-Based Competition Enters the Information Age

Put another way, with fast data, companies can engage in—and

win—time-based competition. Time-based competition, of course, is nothing new. As The Boston Consulting Group has emphasized since the late 1980s, the classic formula for business success—Sell a product or service that delivers the most value at the lowest price—has been amended to read, Sell a product or service that delivers the most value at the lowest price *in the least amount of time*. Japanese manufacturers, among the first to recognize the need for speed in business, raised just-in-time manufacturing to a high art, using tightly synchronized processes to propel Japan into a period of commercial dominance in automobiles, electronics, and other manufacturing.

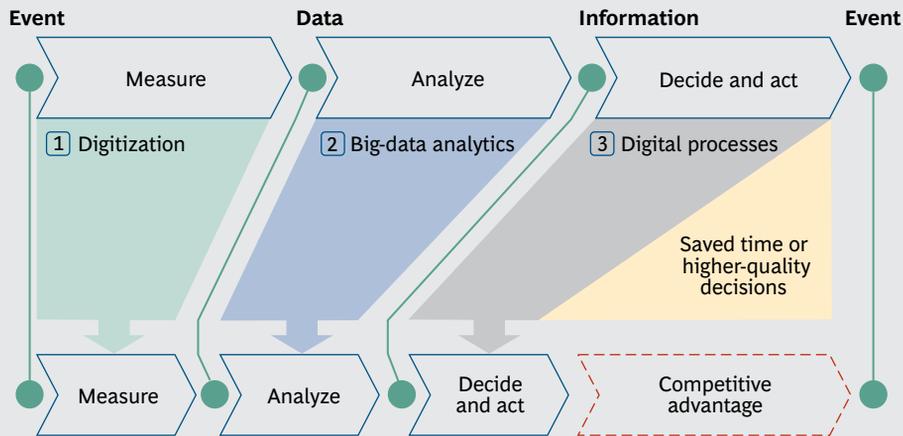
One reason that speed creates a competitive advantage is that, as George Stalk and Thomas M. Hout wrote in their 1990 book, *Competing Against Time*, “Time-based competitors create more information and share it more spontaneously.... The cycles of creating information, then acting and acting again, are the heart of business, and time-based companies push hard so that everything they do...will be geared toward collaps-

ing these cycles... [T]he competitor who acts on information faster is in the best position to win.”

Now this strategic paradigm has moved to the next level, thanks to the increased connectivity manifested in the explosive growth of digital business processes and Internet-enabled devices—the so-called Internet of Things. Combined with dramatic increases in processing power and the plummeting cost of data processing and storage, this nearly ubiquitous connectivity enables companies to act on information faster than their rivals to gain a crucial edge at a time when every business is rapidly evolving into an information business. In this environment, mastering the cycle of information creation and acting on it—by dramatically shrinking time to insight and time to action—will be the source of competitive advantage in the digital era. (See Exhibit 1.)

At many business-to-consumer enterprises, the future has already arrived. Such businesses produce numerous examples of nearly real-time, instantaneous, or even automated actions.² Now the busi-

EXHIBIT 1 | Accelerating the Time to Action Creates Competitive Advantage



Source: BCG analysis.

ness-to-business world has begun to seize the opportunities inherent in digital, time-based competition. For example, with the ability to capture and act on data in real time, a manufacturer can test parts while they're on the assembly line and employ predictive analytics to calculate the likelihood of a defect in any given piece, updating that calculation at each stage of production. Potentially defective parts are discarded during the production process, with no need for human intervention, reducing both materials costs and defect rates. Credit card companies can analyze every transaction—instead of a small sample—in real time, sifting through hundreds of variables for hidden patterns indicative of fraud; they are able to flag suspect transactions within seconds or minutes instead of hours. Mining companies can reduce time lost to injury by uncovering correlations among variables such as weather, operator schedules, and operator training. They can then predict how those variables might affect injury rates. Clearly, fast-data strategies are changing both the virtual and the physical world.

To capture these new opportunities, managers must think about

information in a new and different way. They must treat information as a company-level strategic asset rather than a function-level tactical asset and embrace the concept of enterprise information management (EIM). Companies need to define information models and make sure that they are governed consistently across the enterprise, connecting the dots across organizational silos. They need to capture data at the source, propagate the information throughout the organization, and maintain its quality holistically.

Batch processing of transactions becomes increasingly obsolete, giving way to continuous processing on systems operating in real time. Rather than being protected by gatekeepers that jealously guard access to key data, information is shared, democratized, and made available to any employee who can use it and every function that needs it. Freely accessible performance metrics dilute the finance function's monopoly on the performance watchdog role and diffuse that responsibility to other functions. Analytics are reoriented toward predicting the future rather than studying the past.

Although this description might sound like one more in a long and familiar line of expensive, slow-moving, technology-driven corporate IT initiatives, most of which have produced disappointing results, EIM is fundamentally different in a number of respects. Its primary purpose is neither to drive internal efficiency improvements nor to create internal information monopolies. It is, instead, to create the conditions for competitive success in today's business environment. It may take a few years for a company to develop the full capability, but the effects of EIM are apparent right from the start of the effort, and they continue to multiply along the journey to full implementation.

As a diversified technology company, Philips manages a dynamic portfolio of businesses that we build to global-leadership performance. To enable our vision of becoming an agile, real-time company, we are adopting a smarter way to define and manage information.

—Jeroen Tas, CIO, Philips

Fast-Data Strategies Improve Decision Making

Using the capabilities of fast data to make an impact on the physical world, executives at one global transport company are expediting the move from insight to action. Prior to implementing a fast-data solution, the company had been plagued by outdated information and conflicting data generated by a heterogeneous mix of reporting tools. Forecasting was a laborious exercise and, despite the effort expended, it yielded unreliable predictions that varied from actual results by as much as a factor of ten.

With a standardized real-time reporting system—one that cleanses and connects disparate information sets—management was able to generate reliable forecasts almost instantaneously. Furthermore, the new reporting system's more trustworthy data on costs and fuel, as well as on profitability per customer and per product, has positioned management to perform drill-downs and drill-ups for identifying cost and revenue anomalies. As a result, the company discovered that it was being overcharged by some suppliers. The data also enabled management to identify the least costly supplier at each site and the most profitable mix of services. These and other improvements have generated ongoing savings of several hundred million dollars annually.

Unleashing the Power of the “Single Source of Truth”

Philips, a major diversified-technology company, has embarked on an end-to-end transformation to accelerate two-way data flows across the company and the entire value chain. The foundation of the undertaking is an enterprise data repository that contains all transac-

Our mission is to realize a high-performance end-to-end information value chain as a backbone for the real-time enterprise. We focus on the creation of a solid foundation of trusted data, which will be the basis for improving the speed and quality of decision making by enabling real-time performance measurement, advanced analytics, and opportunities to create new, data-driven business models. It will take a few years before we realize our end-state vision, but we see the impact already and can't believe that we could have lived without EIM in the past. Since the inception of EIM, we have been almost overwhelmed with business requests for relevant and up-to-date information.

—Bart Luijten, Head of Enterprise Information Management, Philips

tional and master data captured by its system of records and supplemented with external data from sources such as suppliers, market research, and social media. This “single source of truth” is collected and distributed by “information factories” that gather data generated by individuals, functions, and business units and, in return, provide information as a service to the entire enterprise. When Philips has fully implemented its fast-data capability, it will be able to implement seamless end-to-end processes across multiple functions and business models. At the same time, standardized KPIs across all functions and operations will give management a 360-degree view of the business, positioning it to interact with dynamic data and enhancing the decision-making process and performance management.

For example, decision makers will be able to amalgamate an abundance of customer, financial, product, and environmental data and deploy predictive algorithms that reveal potential shortages in its supply chain weeks before they occur. Management will have more time for deciding whether to alter production schedules, line up alternative supply sources, or take other remedial measures.

The transformation now underway at Philips promises to deliver

significant improvements to the business.

Once a company with limited real-time analytic capabilities that relied on manually produced performance reports and static cockpits and dashboards, Philips is on its way to becoming a company that uses real-time analytics to optimize the effectiveness and efficiency of its operations.

Two-way data flows will give senior management a high-level view of the overall enterprise and simultaneously enable more detailed monitoring of individual operations. Fast data may even become the foundation of a new business line. With instantaneous access to supplier and stakeholder data, the company can assume a powerful new role as orchestrator of a business ecosystem that is capable of tightly coordinating activities.³ The goal is to improve efficiency, time to market, and profitability.⁴

Envisioning the Future

Building the elaborate infrastructure that supports fast data entails significant investments of time and capital.⁵ Large, diversified companies may need four years or more to align the whole organization along a common approach. A company can think big and start small by cre-

ating solutions that address acute business “pain points” and prove the value of the new approach. Those small steps are the basis for subsequent, more substantial evolutions of the concept over time.

Pain points are not difficult to find. (See Exhibit 2.) One diversified manufacturer’s operations were plagued by data incompatibilities that forced sales personnel to enter an order several times before the order entry system would accept it. Harmonized data structures made the system more reliable—to the relief of the sales personnel. Once employees saw the advantages of cleansed and connected data, they were far more inclined to buy into the larger vision of the real-time enterprise.

Whether the initial investment is large or small, BCG has observed that a company must have a few key elements in place before it can launch and sustain the data transformation: a convincing case for the business value of the enterprise’s heightened capability, a clear and effective governance mechanism, a

detailed vision of the information architecture that will underpin the transformation, and a dedicated EIM team that, as the guardian of the truth, partners with the business units to drive together toward the desired end state.

Time-Based Competition Takes Center Stage

A decade or more may pass before the value-creation potential of fast data becomes fully apparent. But companies are already using fast-data approaches to gain a clearer view of their operations, customers, competition, and market opportunities; to make better decisions in less time; and to win in the marketplace through faster action. Given the volatile and dynamic market environment, this trend can only accelerate. It’s important to start now. There is no time to waste.

NOTES

1. See “Opportunity Unlocked: Big Data’s Five Routes to Value,” BCG article, September 2013.

2. See “Signal Advantage,” BCG Perspectives, February 2010.

3. See “Systems Advantage,” BCG Perspectives, June 2011.

4. See “The Age of Digital Ecosystems: Thriving in a World of Big Data,” BCG article, July 2013.

5. See “How to Get Started with Big Data,” BCG article, May 2013.

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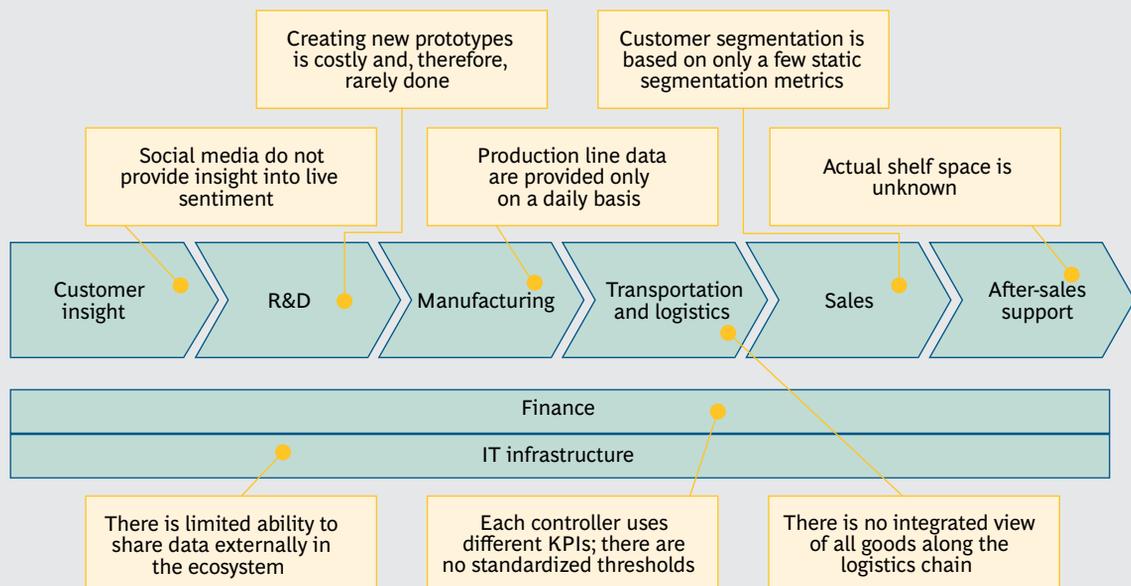
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EXHIBIT 2 | A Map of “Pain Points” Reveals Opportunities for Quick Improvements



Source: BCG analysis.