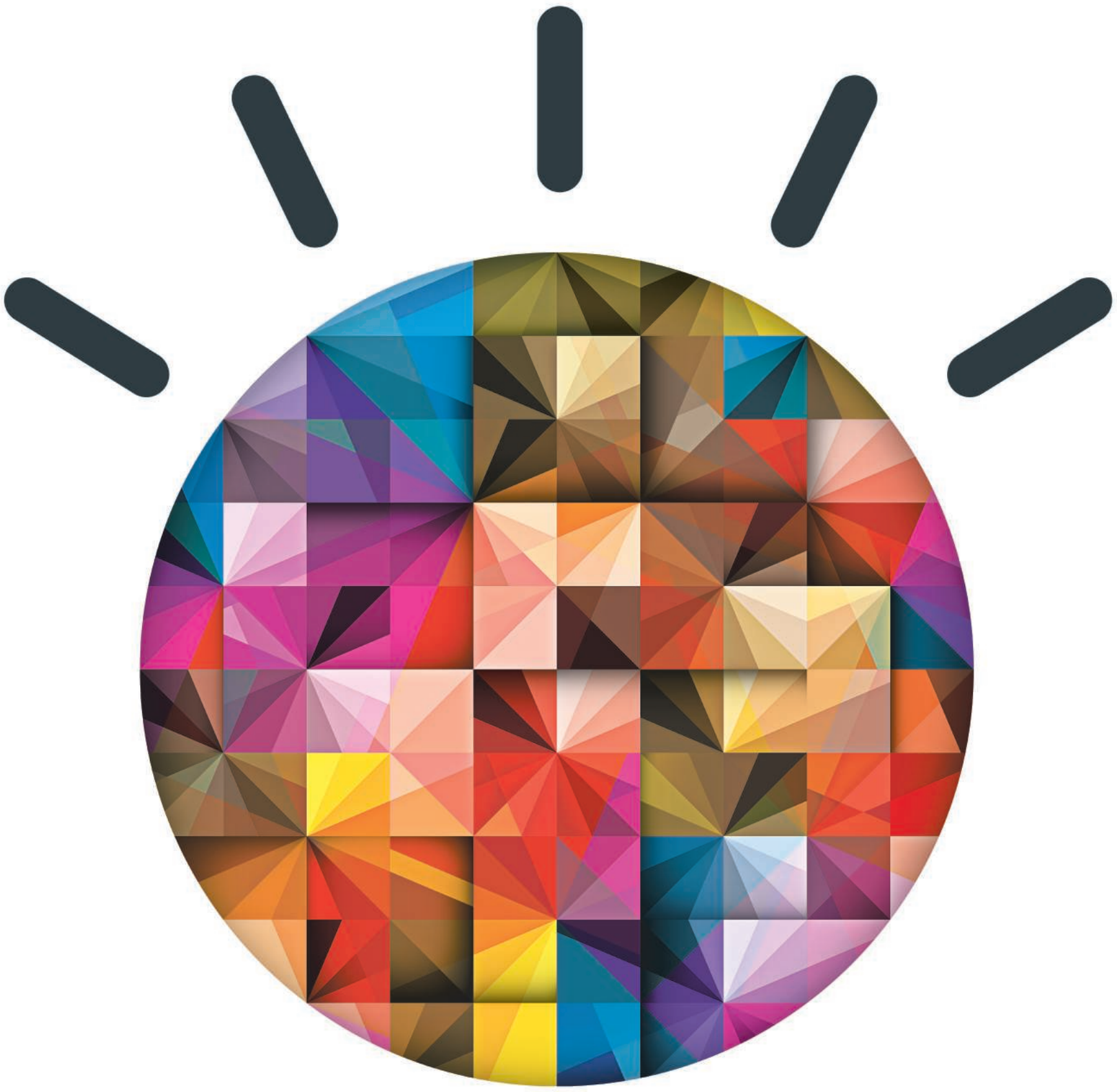

Smarter computing builds a Smarter Planet: 2 in a Series

Bringing smarter computing to big data.

To build a smarter planet, we need smarter computing—computing that is tuned to the task, managed through the cloud and, importantly, designed for big data.

How big? We're now creating 2.5 quintillion bytes daily—so much that 90% of the data in the world today has been created in the last two years alone.

This data is also big in another way—in its promise. We now have the capacity to understand, with greater precision than ever before, how our world actually works—to see patterns unfolding in real time across multiple complex systems; to model possible outcomes; and to take actions that produce greater economic growth and societal progress.

We can do more than manage information—we can manage vast *information supply chains*. They're made up of not only the ones and zeros of structured data that traditional computers love, but streams of unstructured text, images, sounds, sensor-generated impulses and more.

We can parse the real languages of commerce, processes and natural systems—as well as conversations from the growing universe of tweets, blogs and social media. We can also draw on advanced technologies such as stream computing, which filters gigabytes of data per second, analyzes these while still in motion and decides on the appropriate action for the data, such as a real-time alert or storing an insight in a data warehouse for later analysis.

But we can only do all of this if our computing systems are smart enough to keep up. According to the IBM *Business Analytics and Optimization for the Intelligent Enterprise* study, one in three business leaders frequently make decisions without the information they need. Half don't have access to the information they need to do their jobs. And that has significant competitive implications. The 2010 IBM Global CFO Study by the IBM Institute for Business Value showed that companies that excel at finance efficiency and have more mature business analytics and optimization outperform their peers, with 49% higher revenue growth, 20 times more profit growth, and 30% higher return on invested capital.

With continuously analyzed data, organizations can be what they want to be, at all times. Consider the Memphis Police Department, which compiles volumes of crime records from a variety of sources and systems, and has reduced serious crime by more than 30%. Fresh food grower Sun World International is leveraging insights from their data to cut natural resource use by 20%. Research at the University of Ontario Institute of Technology is developing streaming analytics to help neonatal care hospitals. By analyzing 43 million streaming data points per patient, per day, they can improve patient outcomes by using all of the data available.

This list could go on. And at the leading edge of smarter computing, IBM's Watson—the computer that bested the two all-time champions on the television quiz show *Jeopardy!*—demonstrates the power of analytics to provide meaningful insights from an ever-increasing volume and variety of data, enabling correct answers and winning actions, in real time.

As our world gets smaller, our data keeps getting bigger—which is good news. Information that was once merely overload now lets us see our planet in entirely new ways and intervene to make it work better. Because computing systems designed for big data are systems designed for good decision making. Which is, after all, what being smarter is all about.

Let's build a smarter planet. Join us and see what others are doing at ibm.com/smarterplanet