Building a Smarter Planet: *2 in a Series*

On a smarter planet, answers are hidden in the data.

Here's a bold prediction: The biggest leaps forward in the next several decades—in business, science and society at large—will come from insights gleaned through perpetual, real-time analysis of data.

With nearly 2 billion people on the Internet (and counting), and with more and more of the world's systems becoming digitally aware, there is greater diversity in the forms and shapes data is taking—transactions of every kind, rich media, social media. Already, 30 percent of the data in the world consists of medical images. With more planetwide sensors than ever—a billion transistors for every human—more data than ever is being generated, and at far greater speeds.

Yet, while data is growing at an exponential rate in volume and complexity, time is not. Which is why no organization, city or country can afford "enterprise amnesia." Whether your goal is to remain competitive or to change the world—or both—you need to capture, understand and use all of your data. And that, in turn, is why the new science of analytics must be core to every leader's thinking.

This is not, most importantly, about volume. The key to moving from "big data" to *smarter data* is to organize your information, in all its diversity; to understand its context; and to manage its continual evolution. Consider this:

° Through smarter data, we can make sense of information in all its forms—structured and unstructured, text and multimedia, from physical infrastructures to social networks. For instance, Netherlands Railways can weigh 56,000 variables—including the railroad's rolling stock, changing weather patterns and passenger demand—to assemble and schedule more than 5,000 passenger trains per day,

improving operating efficiency by 6% and saving an estimated 20 million euros annually.

° Through smarter data, we can also see how one piece of information relates to the things around it. Any data point, by itself, is just about useless. But when you see it in context, when you analyze that context in real time—and when you can automatically capture the connections that one piece of data is itself making with other pieces of data—then you have a smart system. Smart enough to make better predictions—as Spanish oil and gas company Repsol does by using predictive analytics to parse huge volumes of seismic data, boosting the success rate of its exploratory efforts.

° Lastly, smarter data, delivered in real time via new computational models like stream computing, lets us keep pace with a world where risk and opportunity are constantly in flux. Rather than relying on snapshots of the past, our decisions can be real-time, fact-based projections of a likely future. This is what a Canadian hospital treating high-risk newborns is doing, as its doctors identify patterns within an array of physiological data to help detect life-threatening infections up to 24 hours sooner.

A world of smart data offers enormous hope. It also raises important issues, such as those relating to privacy and security. These are challenges faced by all businesses and societies. But fortunately, as thousands of forward-thinking leaders today are discovering, their data's hidden meanings don't just make their companies smarter. They also increase the growth, transparency, sustainability and knowledge of entire industries, and of our whole planet. Which is turning a bold prediction into a promising reality.

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