

## Building a Smarter Planet Primer

**Building a smarter planet is** IBM's point of view on how interconnected technologies are changing the way the world literally works. That is, the systems and processes that enable: physical goods to be developed, manufactured, bought and sold; services to be delivered; everything from people and money to oil, water and electrons to move; and billions of people to work, govern themselves and live.

**The catalyst for this change:** transformation of the world's infrastructure, which is becoming increasingly instrumented, interconnected and intelligent.

- By 2010, there will be a billion transistors per human, each costing one ten-millionth of a cent. The technology is being embedded into billions of devices – cars, appliances, roadways, etc.
- By 2011, an estimated 2 billion people will be on the Web -- connected to devices in an unprecedented way.
- Massively powerful computers and computing “clouds” can be affordably applied to processing, modeling, forecasting and analyzing the mountains of data all this will generate.

**What this means:** For the first time in history, *almost anything* can become digitally aware and interconnected.

**Example:** 67 per cent of all electrical energy is lost due to inefficient power generation and grid management. So utilities in the U.S., Denmark, Australia and Italy are now building digital grids to monitor the energy system in real time. This lets them fix outages much faster, and source and distribute power more intelligently. It also makes the integration of traditional and new sources of power possible, providing end-to-end insight across all forms of energy.

**Example:** Congested roadways in the U.S. cost \$78 billion annually in wasted hours and gas. Over one year in a small business district of Los Angeles, cars cruising for parking created the equivalent of 38 trips around the world, burning 47,000 gallons of gasoline and producing 730 tons of carbon dioxide. In contrast, Stockholm's new smart toll system has resulted in 22 percent less traffic, a 12 to 40 percent drop in emissions and 40,000 additional daily users of the public transport system.

**The opportunity:** Smart airports, smart banks, smart roadways, smart cities – with so much technology available at such a low cost, the list of possibilities is endless.

The world is at a critical inflection point. The meltdown of our financial markets has jolted us awake to the realities and dangers of highly complex global systems – but it was just the latest of several such jolts: on global climate change, on the environmental and geopolitical issues surrounding energy, on global supply chains for food and medicine, and on security following 9/11. Each of these was a collective realization of the reality of global integration.

We know we are all now connected – economically, technically and socially. But being connected is not sufficient. We also have to infuse intelligence into our systems and ways of working. The world has become flatter and smaller. Now it must become smarter.