

The first  
decade of the  
21st century  
has been  
a series of  
**wake-up calls.**

These are system crises—from security, to climate, to food and water, to energy, to financial markets and more. Together, they tell us that our economy and society are now globally integrated. They also tell us that the systems by which the world works must be transformed. In their current forms, they are unsustainable.

Over the past decade, we have seen, from multiple angles, that we are all connected: economically, socially, technically, biologically and environmentally. When a crisis occurs on one part of the planet—whether from microbes, malware or mortgages—it can bring problems to the entire planet within days ... or even hours.

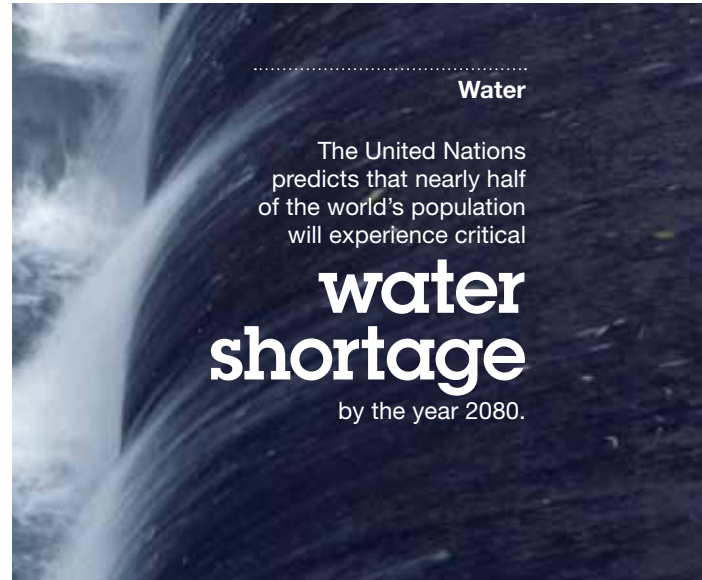
We can now see that being connected isn't enough. The way the world literally works has to become smarter.

The challenges of our infrastructure and natural systems have profound implications for communities and individuals:



**Education**

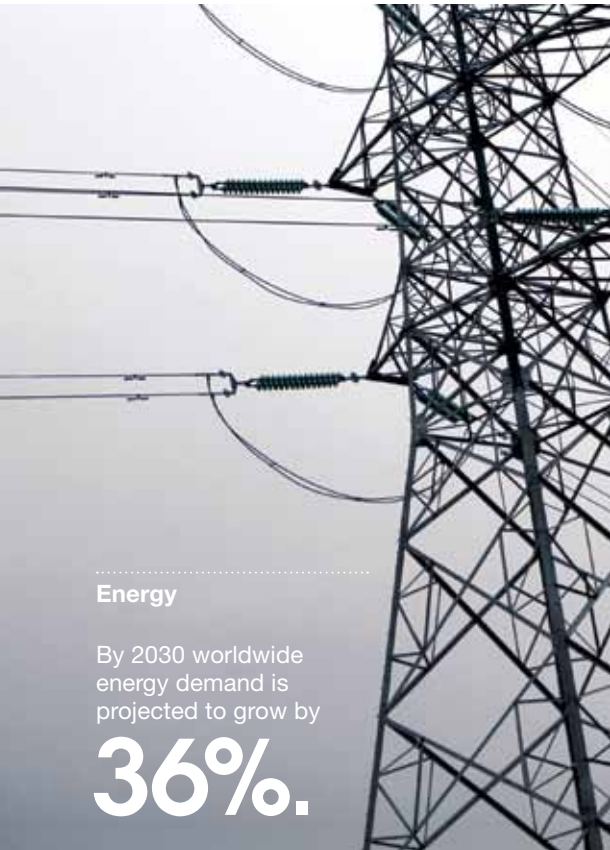
**115 million**  
children still have no access to formal schooling, 60% of whom are girls.



**Water**

The United Nations predicts that nearly half of the world's population will experience critical

**water shortage**  
by the year 2080.



**Energy**

By 2030 worldwide energy demand is projected to grow by

**36%.**



**Employment**

By the end of 2009, job losses from the current global recession could reach

**50 million**  
according to the International Labor Organization.

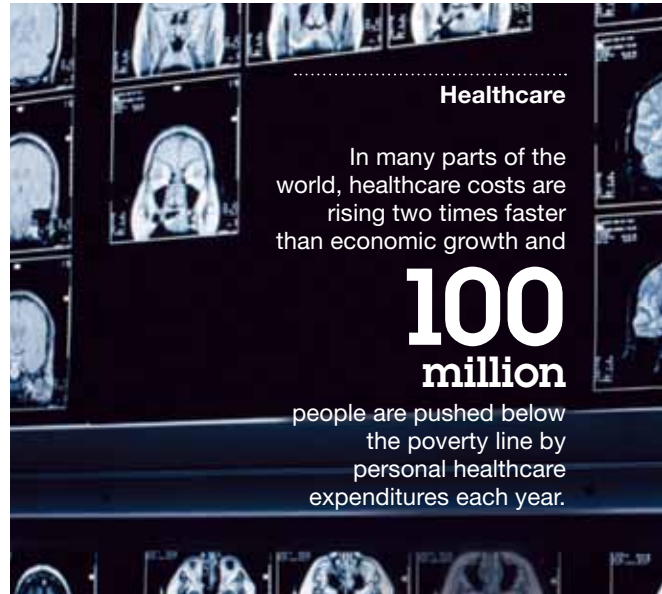


Food

Global food reserves are at their

**lowest level**

in 30 years.



Healthcare

In many parts of the world, healthcare costs are rising two times faster than economic growth and

**100 million**

people are pushed below the poverty line by personal healthcare expenditures each year.



Urbanization

In 1900, only 13% of the world's population lived in cities. By 2050, that number will have risen to 70%. We are adding the equivalent of

**seven New Yorks**

to the planet every year.

## We have an opportunity—and a responsibility—to make the world work better.

Happily, now we can. Intelligence is being infused into the way the world literally works—into the systems, processes and infrastructure that allow services to be delivered, that facilitate the movement of everything from money and oil to water and electrons, and that can help billions of people work and live.

And although it may be surprising for a company like IBM to say this, the primary challenges facing the world are not of technology, but of policy, culture, collaboration and purpose.

In the end, that's what we mean when we talk about building a smarter planet. When a business takes a systemic view of the world—when you see the economy, society and physical environment as a complex, global system—it opens up new ways of working with all your constituencies—communities, clients and individuals—**in ways that matter:**



### Assist victims of natural disasters

When disasters strike, speed and coordination of relief efforts can make the difference between life and death. Those involved need to understand quickly what is happening on the ground and how to make a maximum impact. Victims in China's Sichuan Province, Indonesia, Peru, the Philippines and Sri Lanka, have benefited from Sahana, an open source, Web-based "disaster relief in a box" management system. The software, supported by IBM, provides essential tools for tracking missing persons, coordinating relief efforts and managing pledges for support.



### Address food shortages

Food shortages are felt locally, but their causes—and solutions—are global and systemic. Escalating energy and grain costs, climate change and demand for biofuel caused some food prices to rise by almost 40 percent in 2008. One way to help is to improve the food itself. IBM's World Community Grid is being used to compute genetic data to develop stronger strains of rice—aiming for larger, more nutritious yields, pest and disease resistance, and better water and nutrient use.



### Make energy grids more efficient

With businesses and societies facing often volatile energy supplies, a smart grid can save electricity and money and the planet, by linking smart meters in the home with instrumented power lines and plants. And it even paves the way to integrate renewable sources like wind and solar. IBM today is leading seven of the world's top 10 automated meter projects.



## Aa

### Improve educational opportunities

Education around the world faces systemic challenges in curriculum, teacher training and retention. IBM's multifaceted response includes creating the Reinventing Education program which brings the right groups together to identify barriers, develop solutions and implement them via the BlueSky open source portal. IBM's Reading Companion voice-recognition technology is used by more than 700 schools and nonprofit organizations in 22 countries. And more than 10 million children have benefited from our early childhood interactive learning centers.



### Preserve at-risk waterways

The United Nations predicts that nearly half the world's people will experience critical water shortages by 2080—in large part because water isn't managed as a global system. With today's technology, we can create a reliable, up-to-the-minute view of water use. IBM and The Nature Conservancy are building advanced, Web-based tools for river basin management. Computer simulations in a geospatial 3-D environment help users visualize the possible impact on ecosystem services and biodiversity of different policy scenarios for land water use.



### Develop new models for community service

In emerging markets, the most critical and challenging aspect of long-term economic stimulus is developing expertise—the skills to compete globally. In 2009 five hundred of IBM's future leaders from nearly 40 countries will complete assignments in our Corporate Service Corps. Now in its second year, IBM's "corporate Peace Corps" is sending teams of employees to nine emerging countries to work on projects that combine economic development and job creation—preparing them and their local partners alike to function as true global leaders.



### Plan the growth of our cities

All the world's systems—from transportation, to energy, to healthcare, to food, to education and more—come together in our cities. IBM is helping cities across the world get smarter—smart traffic systems in London, Brisbane and Singapore; smart crime fighting in New York; smart energy in Houston; smart water in São Paulo; smart buildings in Shanghai. The opportunities and the innovations keep growing. In cities across the world, we're helping improve information sharing across agencies to provide more efficient municipal services.