IBM and Sustainability: Creating a Smarter Planet

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Sometime in 2000–2001, IBM decided that companies from emerging countries would be much better placed to produce and market hardware and that it needed to move up the value chain by developing and offering more technology applications and develop the consulting capability to help clients with applications. Less focus on technology as such, and more on the enabling potentials of technology was the idea. As a result, it sold its PC business to Lenovo in 2004. The recent $2,1b sale of the server business to Lenovo completed this process.

In 2002, IBM acquired the consulting arm of PWC in order to buy in consulting knowledge and capabilities, despite its previous reliance on continuous learning and in house capability development. However, the integration of PWC consulting into IBM was not achieved without major difficulties and took many years.[1]

In 2008, the IBM Smarter Planet Strategy was launched in the midst of the meltdown of the financial crisis. It was a bold statement of hope in those dark days. It asserted that the world can be a better place with the smart use of technology and IBM would be able to provide the consulting, the software and the management systems for addressing some of the world's most pressing challenges. Addressing sustainable development was immediately one of the key objectives.

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[1] IBM managers in Gilbert Lenssen's classes have testified that it took more than 10 years to overcome cultural differences.

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The vision is explained in a 2010 presentation from Rich Lechner, IBM VP Energy and Environment, which follows.[2] He is obviously is a business leader with an acute awareness of the business potential of sustainability and a clear understanding of the societal relevance. A clear sense of purpose around making the planet a better place is embedded throughout the presentation.

It might seem obvious or common sense, yet it has been a huge success. This is notwithstanding the fact that companies find it generally very difficult to embark on and succeed in major business model transformations, especially in the field of sustainable development where risks are high and outcomes unsure.

Let's build a smarter planet   IBM

Sustainable operations optimize for energy, carbon, and water across all aspects of the business and value chain

Governance & Strategy

Business Process Management

Product & Supplier Management

Distribution & Logistics Management

Workforce & Stakeholder Management
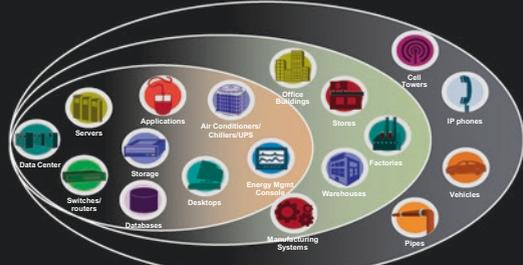
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kika\Leiner
Cost take out cost and improved efficiency of IT and other infrastructure.

Designed and built new energy efficient scalable modular data center, reducing electrical usage by up to 40%. The new data center extended their environmental strategy to include their IT infrastructure.

Ave Maria University
Integration of energy and asset management to lower operating cost.

Converged 23 systems to single IP network. Integrated JCI Metasys with IBM Maximo. Saved $1M in building costs and $350K/yr in combined operating costs.

San Francisco PUC
Eliminating waste emissions into the bay and improving operations

New insight into physical infrastructure and maintenance operations has led to an 11% improvement in the ratio of preventive to corrective maintenance across 3000 miles of pipeline.

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Eaton
Designing new hybrid systems that can reduce fuel consumption in urban delivery vehicles up to 70%.

Developed a hybrid hydraulic powertrain system for UPS. If half of all urban delivery vehicles in the U.S. used this type of technology, we could save more than $1.5 billion annually in fuel cost, and reduce CO2 emissions by 8m metric tons.

COSCO
Consolidating distribution centers to reduce emissions by 15% and fuel costs by 25%.

After analyzing its operations across product development, sourcing, production, warehousing and distribution, the Chinese shipping giant consolidated its distribution centers from 100 to 40 to prevent 100,000 tons of emissions each year.

Singapore
Lowering congestion and carbon emissions by influencing traffic patterns on a city scale.

Developing one of the world's most sophisticated, smart transportation systems leveraging road pricing; integrated fare management; and deep analytics to predict and avoid traffic congestion up to an hour in advance with 85% accuracy.

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Smart Projects

By tapping into and interconnecting with new (often global) production systems and workforces, the Smarter Planet Strategy helps companies gain deep industry insight, giving them the competitive advantage of being able to identify opportunities not previously visible, and the capability to transform the way things are done.

Along with business potential, this increased knowledge opens the way for organisations to link sustainability to the purpose of their business, to integrate it into their strategy and, in the process, help change the world.

The possibilities are endless. According to IBM, smarter use of technology opens the way for smarter law enforcement, smarter water and sewer systems, smarter government services, smarter transportation and smarter operations centres.

Some of the strategy's flagship examples include working with Stockholm city authorities to design and implement a congestion-management system substantially reducing traffic build-up, vehicle emissions and encouraging greater use of public transport; and helping Syracuse University's Green Data Centre halve the energy requirements of standard data centres, using advanced techniques in building design, energy generation, cooling technology and IT systems.

Meanwhile in rural Louisiana, a Smarter Planet telemedicine initiative has helped provide advanced healthcare to patients with limited access to services, by creating a portal allowing doctors to record and share test results and vital signs, aiming for faster and more accurate diagnosis.[3]

In each of its projects Smarter Planet aims to demonstrate both the business case and the sustainability case for improving systems to become more sensitive,

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[3] For projects in the US please look at www.ibm.com/smarterplanet/us/en/. For projects in France please look at www.ibm.com/smarterplanet/fr/fr/. For projects in Australia please look at www.ibm.com/smarterplanet/au/en/

collaborative and responsive, introducing the benefits of innovation rapidly and at scale.

Smarter Planet operates as a global business. Knowledge exchange and consolidation of learning from each project is obviously the basis for maintaining advantage over competitors who might be tempted to imitate IBM.

Pillar for Growth

For IBM, the introduction of 'Smart' solutions is a $66 billion opportunity and one of its four key pillars for growth. Based on the vision that data integration reinforces a united world, IBM software is the key driver for this proposition, giving clients the capabilities required to transform their industries by integrating information, empowering people, connecting global ecosystems, and optimising business processes.

In 2010, the Smarter Planet Strategy generated US$3 billion in revenue and it accounted for more than 25 percent of IBM's research work. It is in the process of doubling this to 50% by focusing its efforts on high-growth industries such as healthcare; oil and gas; energy and utilities; transportation; telecommunications; retail; banking; government; and electronics.

In order to optimally manage its business IBM develops a yearly roadmap, which includes a long – term perspective on technology, business and the global economy, and seeks to align this business model with clients' needs.

Core Strengths for Succeeding in an Integrated World

This focus on the enabling power of technology is not new to the company. IBM played a central role in scientific breakthroughs at several stages of its history, supporting NASA in putting a man on the moon and assisting with the decoding of the human genome. Seeing and solving problems has long been at the core of its operations, as has the recognition that, with innovative thinking, many different types of resource can contribute to the solution. After applying these principles to its own operations, the company is now turning its eye to the world becoming, in essence, a sustainability enabler, demonstrating the culture, structure and governance needed to adapt to a globally integrated market.

The philosophy that 'any problem can be solved as long as people are willing to think' reflects a mindset that does not accept existing boundaries while the development and subsequent sharing with the world of its advancements shows an understanding of the value of the availability and use of common standards. The company's refusal to adopt segregation policies for its plants in southern US states in the 1960s and its progressive emancipation policies towards workers throughout its corporate history, reflects its attitude of inclusion and openness. IBM believes that talented people can be found anywhere in what they call the 'human family'. It embraces the fact that all people are different and it is these differences that facilitate innovation and the ability to adapt.

These values are a cultural asset of paramount importance to any company operating as a globally integrated enterprise. But having the cultural capability alone is not enough. A company's organisational architecture needs to look beyond the traditional, and fragmented, idea of brand, process, product and country. IBM acknowledged this by putting in place an integrated design with a strong overall governance model to become congruent with the realities of today's dynamic integrated global economy.

Addressing Challenges

In 2016, the world is not short of problems, many of which have sustainability issues at their core. The number and size of these issues trump the capability of governments to solve them. IBM recognises the business opportunity for delivering systems that enhance sustainability within firms and in doing so address many of these challenges. In a world where integrated enterprises increasingly tap into global production systems and workforces, competitive advantage comes from dynamic learning, greater insight, and in the potential of transforming the way things are done to keep relevant and competitive in a high-paced, rapidly changing globalised marketplace.

Critical questions IBM needs to address are:

1. IBM's strength has always been in technology development. This Smarter Planet strategy shifts IBM from technology development to technology applications for management solutions and makes it effectively a consulting company. What are the long range organisational implications of this shift?
2. Other consulting companies like Accenture who are making major bets on sustainability have consulting as a key capability which they nurture, not in the least with being in touch with senior executives through which they can anticipate the changing executive agenda. They can consult on an entire sustainability strategy and on specific operational solutions based on smart technology. Can IBM emulate this approach?
3. IBM might ultimately lose its leadership in technology, nor be a leading consulting company. Is there enough space in between both industry sectors for it to thrive?