



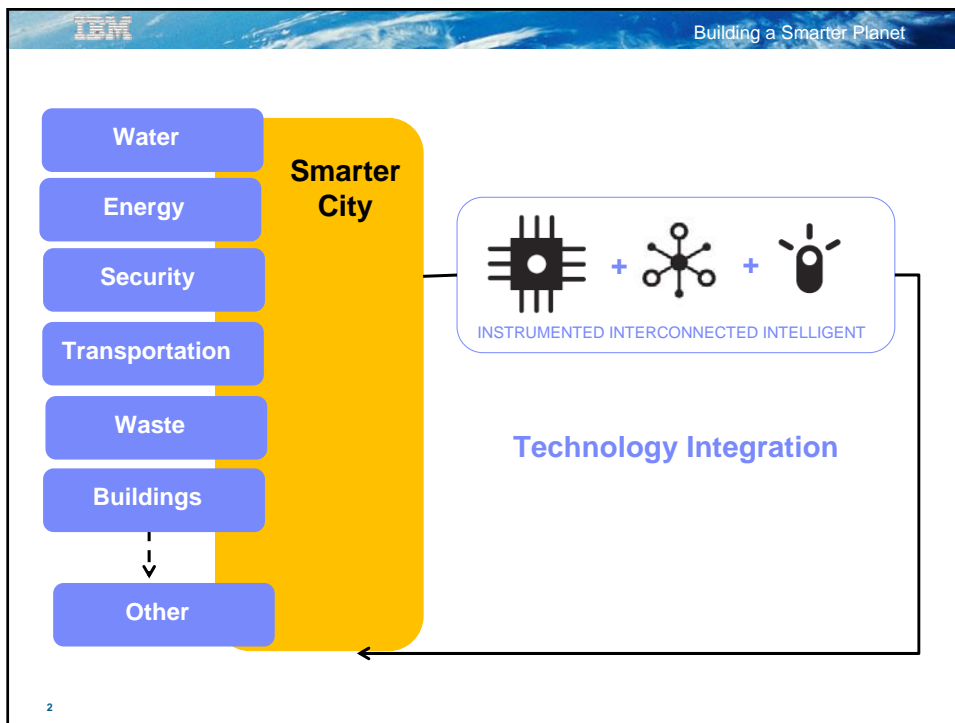
Smarter Buildings



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IBM Building a Smarter Planet

IBM “5 in 5”

City buildings will operate like living organisms that can sense and respond quickly....to protect citizens, save resources and reduce carbon emissions

IBM Research 2010

IBM Building a Smarter Planet

Smarter Buildings

Integrate and optimise the physical and digital infrastructures in individual buildings and groups of buildings to create facilities that are:

- More cost effective for its owners reducing energy and operational costs
- More operationally efficient
- Comfortable and productive for its occupants
- Safer and more secure
- Environmentally responsible



4

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Bright green buildings

-  **Instrumented**
 - Smart Meters - electricity, water, gas
 - Building Management Systems and Building sensors - lighting, fire, environment, CO2
 - Public safety and surveillance systems
 - IP-enabled devices - servers, PCs, multifunctional devices, actuators, control devices
-  **Interconnected**
 - Networked environments – fiber, wireless, public spaces, offices
 - Networked sensors, sensor platforms, concentrators
 - Networked meters and building management systems
 - Taxonomies for integration within buildings and across buildings at an enterprise level
 - Interconnected systems - costs, space-use, portfolio management, facilities management
-  **Intelligent**
 - “Enterprise-view” visibility of the building/campus/enterprise/city operations
 - Smarter decisions to reduce operations costs, especially energy & water usage and emissions
 - Optimisation and integration of assets, resources, work, safety, environmental systems
 - Real-time analytics of sensor & meter data to optimise operational performance
 - Behavioral modeling of physical, natural, and people systems
 - Visualisation for user awareness and action
 - Machine to machine optimisation systems

5

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St. Regis Hotel Shanghai



- **Only Intelligent Building among 33 five stars hotels in the region**
- **Designed at 5.1% energy cost to revenue, now at 4.9% ... all other 5 star hotels average 8%**
- **40% reduced energy cost / revenue vs. other 5 Star hotels**




智能建筑
INTELLIGENT BUILDING
上海瑞吉红塔大酒店
The ST. Regis Shanghai
上海市智能建筑试点工作领导小组
二〇〇二年

6

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Sustainability Victoria



What's Smart?

- Automated power consumption management
- Power capping
- Thermal diagnostics

Smarter Business Outcomes

- 68% less power consumption


"We more than halved our datacentre power consumption by reducing the number of servers, using more energy efficient technology and intelligently managing server usage."

Geoff Mabbett, Sustainability Victoria Chief Executive

7 7

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GreenSpaces Concept Delhi



8

IBM's Green Sigma™ Coalition

Metering and Monitoring **1**

Continuous Improvement of Buildings & Facilities **3**

Daily Management with Green Sigma™ Dashboard **2**

- Accelerating the move toward sustainable enterprises
- Implementing high value projects that drive quick ROI
- Enabling enterprises everywhere to reduce energy, water, waste and GHG Emissions...

Smarter companies working together to co-create a Smarter Planet, Smarter Cities and Smarter Buildings – today