Creating Smarter Cities 2011
Storylines: IBM and Smart Cities
From September 2008…

World financial markets collapse

…to January 2010

Welcome to the decade of smart
In 2005 there were 1.3 billion RFID tags in circulation… by 2010 there will be 33 billion.

Worldwide mobile telephone subscriptions are predicted to reach 4 billion by the end of this year.

60 million transistors per person in 2001

1 billion pp in 2010

costing 1 ten millionth of a cent

1.3 billion RFID in 2005. 33 billion by 2010

1 trillion interconnected sensors by 2050

Feb 09 Digital Britain - 2Mbs 2012

4 billion mobile phones 2 million Internet users

Dec 10 - Europe’s best superfast access by 2015

Open Standards Streams
Making a Smarter Planet possible...

**INSTRUMENTED**
- Event capture and filtering for timely response
- Sensor solutions deliver new insights for action
- Systems that automatically adjust to your business

**INTERCONNECTED**
- Any to any linkage of people, process, and systems
- Social media and the internet used to collaborate
- Globally integrated resource pools accessible

**INTELLIGENT**
- Deep discovery/search collaboration with clients/partners
- Work automated for and changed by LOB leaders
- Best practices for aligning IT to business needs
It’s all about people
A planet of smarter cities: In 2007, for the first time in history, the majority of the world’s population—3.3 billion people—lived in cities. By 2050, city dwellers are expected to make up 70% of Earth’s total population, or 6.4 billion people.
The World is Getting Smarter …
… not because we can but because we MUST

- £2.5 billion wasted in energy bills by UK companies due to inefficiencies such as leaving lights and computers on.

- £7-8 billion is the estimated cost of road congestion in the UK economy per year.

- 76% of apples consumed in the UK come from overseas — traveling on average 3700 miles to reach us.

- One third of the amount of food purchased by UK consumers is thrown away.

- Life span for a UK citizen is reduced by 8 months due to poor air quality.

- Financial markets spread risk but can’t track it; this has led to undermined confidence and uncertainty.
Cities cannot simply work harder...

They must work smarter
Creating a Smarter Planet...  
... City by City

Change in any system impacts other city level systems...  

... Significant latent value exists in the connections

- Happy, safe and healthy citizens
- Smarter utility services
- Smarter government services
- Unifying vision
- Innovative and thriving enterprises
- High speed connectivity for business and citizens
- Dependable transportation
- Consistent water supply
- Sustainable energy
- Lifelong learning
- Support for the aging population
- Enabling policies
- Crime reduction
- Thriving economy
- Efficient buildings
- Sustainable environment
- Healthy citizens

© 2009 IBM Corporation
A unifying vision provides a starting point for a Smarter City

- Sustainable value creation model
- Globally recognised leadership at the heart of academic and commercial sectors
- Innovation embedded in all aspects of the city
- Public services and utilities that allow city firms to be competitive
- Environment that allows citizens to prosper and have a good quality of life
Types of Cities which will benefit from becoming a Smarter City?

1) Green Field City.
   Design the infrastructure from the outset which will facilitate a smarter city model. Getting things right first time.

2) Evolving City.
   Cities that once prospered from a core industry but with the decline in this core industry the city needs to focus on rejuvenation.
   *Detroit (cars), Sheffield (steel)*
   *Barcelona*

3) Single Pain Point City
   A city has a single pain that effects the whole city
   *Smog, LA in 80s*
   *Traffic Congestion, Dublin*

4) Stimulus Package City
   Adopting the smarter city model could help the application for federal stimulus funding.

5) Predicted / Pending Event City
   A city that is facing a major event which is planned or predicted
   *Olympics (London)*
   *Earthquake (San Francisco)*
IBM Smarter Cities Challenge
IBM Opens Smarter Cities Technology Centre in Ireland

Dublin City Collaborates on Smarter Cities Projects with IBM

DUBLIN, - 24 Mar 2010: IBM (NYSE: IBM) and IDA Ireland today announced IBM's first Smarter Cities Technology Centre. The centre will be located in Dublin, where IBM will build a highly skilled and cross-disciplinary team to help cities around the world better understand, interconnect and manage their core operational systems such as transport, communication, water and energy.

The new Smarter Cities Technology Centre aims to create as many as 200 new roles in an IDA Ireland-supported investment of up to EUR 66 million over the next three years. The team of subject matter experts will work with city authorities, universities, small and large businesses as well as experts from IBM Research and the company's Software Development Lab in Ireland to research, develop and commercialise new ways of making city systems more connected, sustainable and intelligent.

Due in large part to the enormous modeling complexity and intensive computing resources required to build truly integrated systems, urban planners and local governments have traditionally evolved separate solutions for areas such as water, traffic and emergency response. By being able to integrate their core systems and use advanced analytic capabilities offered by IBM's new centre, cities can now enhance decision-making, improve urban planning, and provide better and more cost-effective services to citizens.

"Researchers at the new Centre will investigate how advanced analytics and visualisation techniques coupled with solutions such as Cloud, stream, and high performance computing, can help city authorities make optimal use of resources and so meet the challenges of our increasingly urbanised world," said Dr. Katherine Frase, Vice President, Industry Solutions and Emerging Business at IBM Research.
We have learned from over 2,000 engagements
Smart metering in **Malta** helps citizens pay only for the energy they use.

Predictive analytics helped slash **Richmond’s** crime rate by 40% in one year.

Data analytics helped cut crime 35% in **NYC**.

In **Delft**, developing enhanced flood prediction and protection systems for coastal areas and river deltas.

In **Taiwan**, 99% of smarter trains run on time.

**Miami-Dade County Public Schools** have increased academic achievement across the board.

In downtown **Stockholm**, smart traffic systems helped reduce gridlock by 20%.

Peak energy loads fell by 15% when IBM helped homes in the Pacific Northwest talk straight to the grid.

**IBM helps Amsterdam Airport Schiphol** move 20 million more bags every year with a smarter baggage system.

*Patterns for Leveraging Information, Anticipating Problems, Coordinating Resources*
Smarter cities are cities that drive sustainable economic growth by…

- Leveraging information to make better decisions
- Anticipating problems to resolve them proactively
- Coordinating resources to operate effectively
Innovative leadership in Rio de Janeiro transformed city operations

- Initial focus - prevent deaths from annual flooding
- Expanded to manage all emergency response situations
- Analyzes weather, energy, building, transportation, & water data in real-time
- Nationwide adoption in advance of Olympics and world cup

Increasing efficiency in resource deployment, Expanding early warnings to 48 hours, coordinating all agencies in response
Engagement and visualization

- Coventry – online “Jam”
  - Engage in deeper, more dynamic conversations with all stakeholders
  - A three-day IBM Jam, enabling more than 800 different stakeholders to engage in debate in an interactive online forum.

- Peterborough – largest “eco-cluster” in the UK (>380 businesses)
  - IBM helped with engagement and visualization
We have invested to help you benefit from over 2,000 projects

- How to identify your priorities and maximize value
- How to leverage global best practices in your city
- How to deploy technology regardless of your size
With increasing experience, best practice patterns become visible

EXAMPLE: Emergency Management Experience

Identified Repeatable Patterns
- What data is most important?
- What analytics provide value?
- Which groups to coordinate?

Foundation for Reuse and Integration
- Government Industry Framework
- Integrates IBM and partner solutions
We have integrated those capabilities into an extendable city solution.

IBM Intelligent Operations Center

- Unified view across all city agencies
- Anticipate and respond to events
- Intelligence to optimize resources

Provides core capabilities to help cities
Leverage Information, Anticipate Problems, Coordinate Resources
The smartest cities think beyond the core

Communicating and integrating across stakeholders helps to drive Economic Development and Sustainable Growth
We’ve only just begun to uncover what is possible on a smarter planet.

The world will continue to become smaller, flatter and smarter. We are moving into the age of the globally integrated and intelligent economy, society and planet.

The question is, what will you do with it?