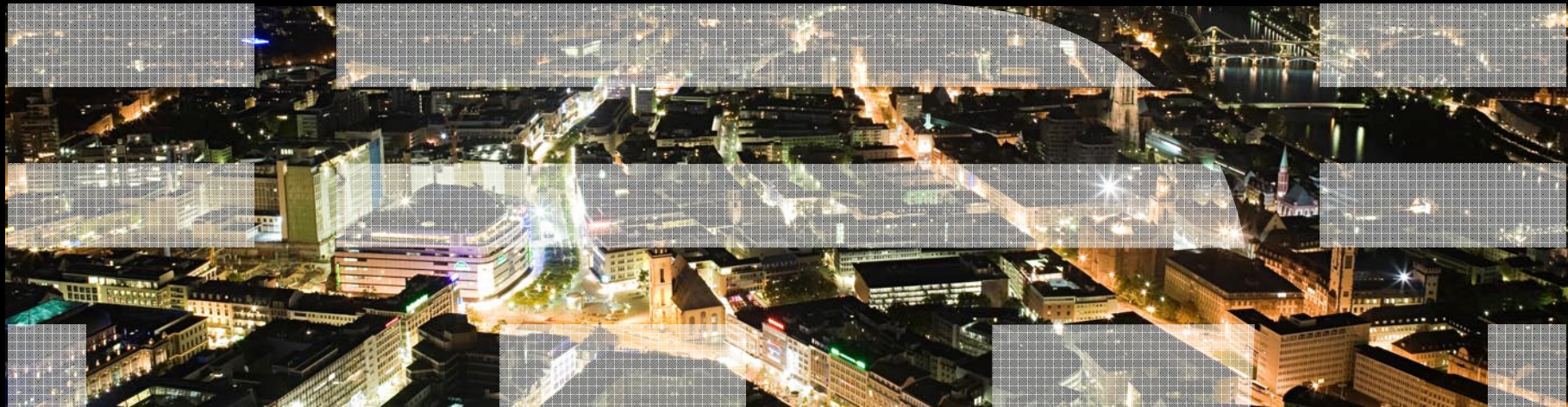IBM

Making our cities smarter
Lessons we can learn from international cities

Chris Pavlovski
IBM Chief Architect, Technology and Innovation

All over the world, public leaders are looking to make their cities Smarter

SHANGHAI, JUNE 2-3 2010
800+ senior public leaders and select influencers from around the world focused on cities in Asia Pacific, in conjunction with the Shanghai World Expo.

NEW YORK, OCTOBER 1-2 2009
500+ senior public leaders and select influencers from around the world focused on cities in North America.

BERLIN, JUNE 23-24 2009
300+ senior public leaders and select influencers from around the world to explore and discuss ways to rethink their approaches to urban issues.

City priorities around the region

BRISBANE

Priorities:
- Addressing Traffic Congestion
- Leading in sustainability and waste management
- Natural Habitat conservation and reclamation
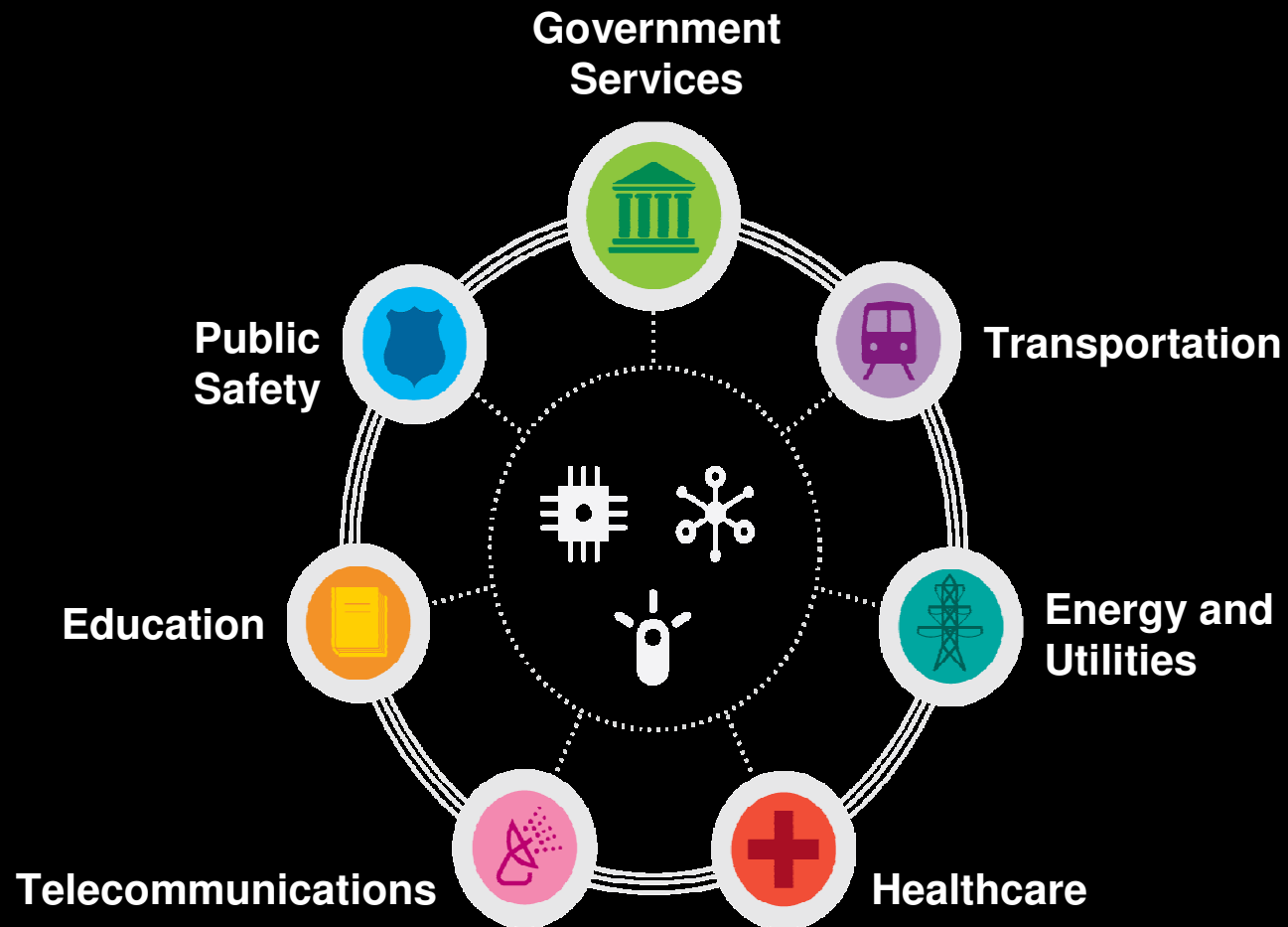- Creating and sustaining jobs

SINGAPORE

Priorities:
- Creating jobs & supporting families
- Stimulating bank lending
- Enhancing business cash flow and competitiveness
- Infrastructure projects: public housing, sustainable development programs, education & health infrastructure

A city is a system of systems

- Government Services
- Transportation
- Energy and Utilities
- Healthcare
- Telecommunications
- Education
- Public Safety

Smarter public safety

http://www.bom.gov.au/tsunami/about/atws.shtml

Tsunami Early Warning System

- **In 2004 the 4th largest recorded Tsunami**

Fire Preventions

- **Communication Systems Failures**
- **Early Warning Systems announced**
- **Automated Text/Phone Calls**

Madrid Emergency Response Centre
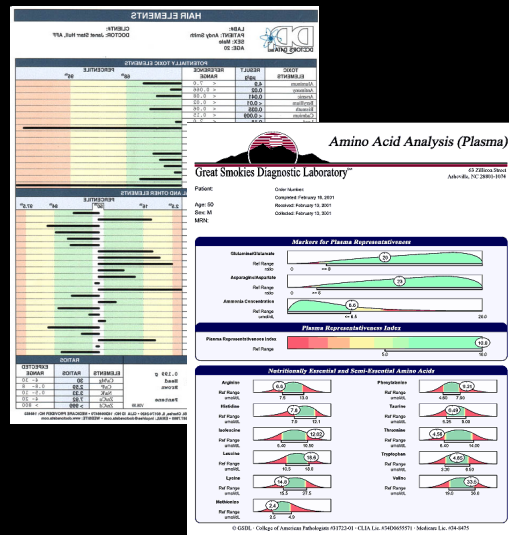
- **25% reduction in response times**
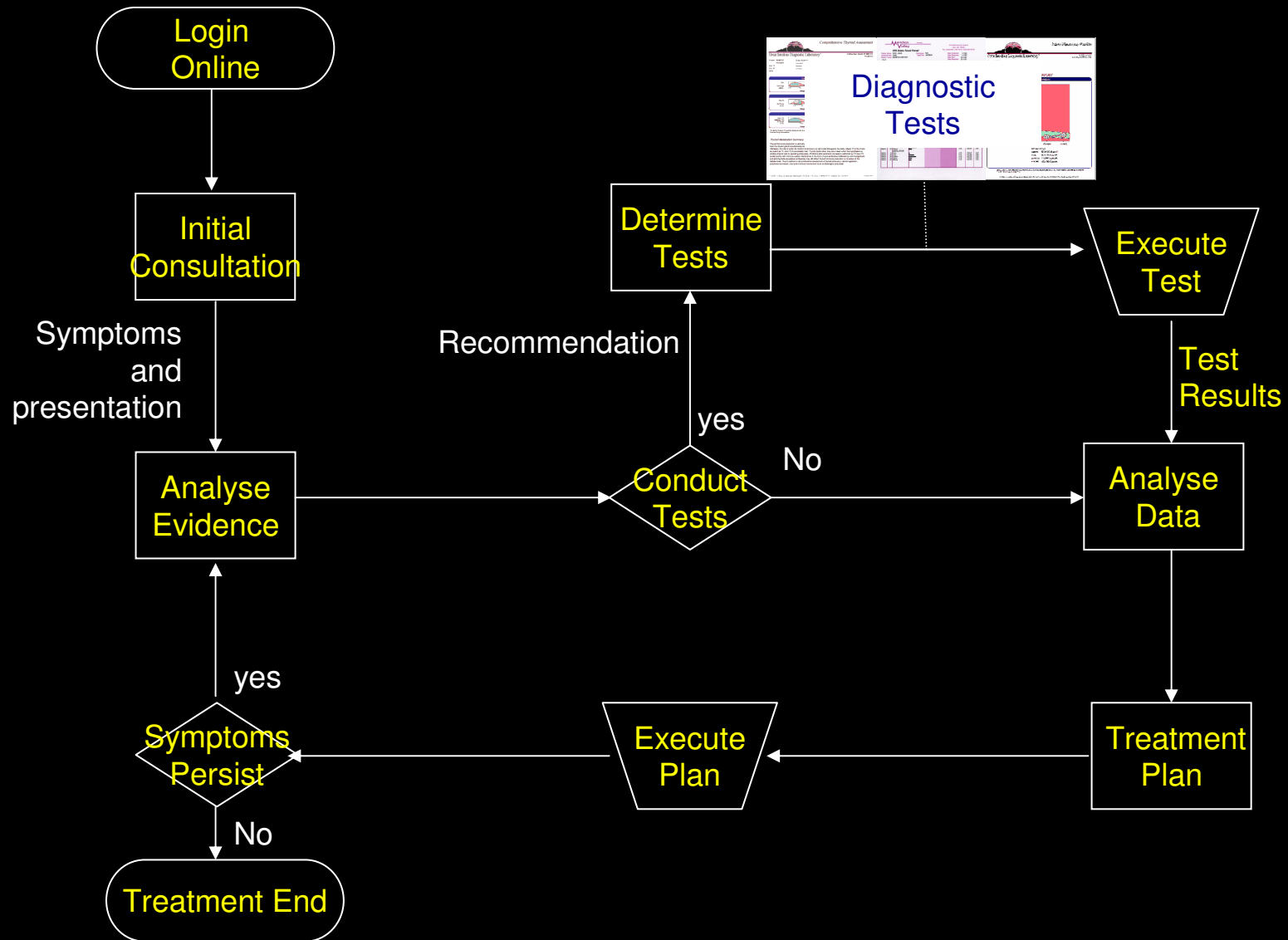
Smarter healthcare

Denmark

• **eHealth portal – cutting administrative costs and increasing patient satisfaction**

• **Remote monitoring – improving preventative medicine and diverting patients from hospitals**

On-line diagnostic support systems

• **Users log in to waiting room.**

• **Connect with available doctor.**

• **Patient Quote and Evidence Based.**

Expert System: Base on clear data, in addition to presenting symptoms.

Login Online

Initial Consultation

Symptoms and presentation

Analyse Evidence

Diagnostic Tests

Determine Tests

Execute Test

Recommendation

Test Results

yes

Conduct Tests

No

Analyse Data

yes

Symptoms Persist

Execute Plan

Treatment Plan

No

Treatment End

Smarter transportation

Stockholm

- 20% less traffic, 40% lower emissions
- 40,000 more public transport users

Brisbane

- 80% fewer traffic accidents

Singapore

- One smartcard pays for buses, trains, taxies, road-use and parking

Smarter energy

Malta's smart grid

- Integrates water and power systems

- Identifies water leaks and electricity losses

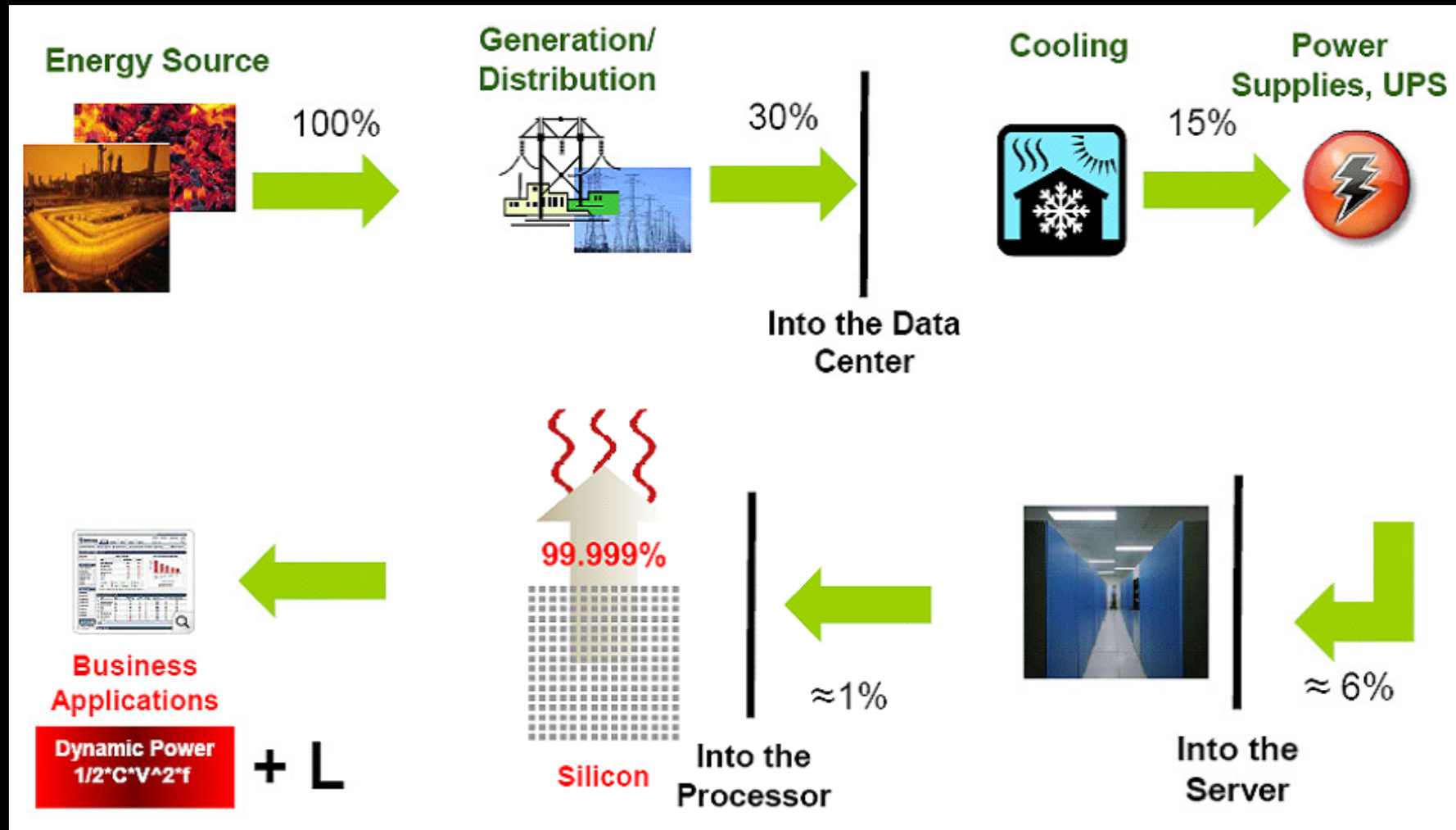- Rewards customers who consume less energy and water

Australia

- Several Smart Grid projects
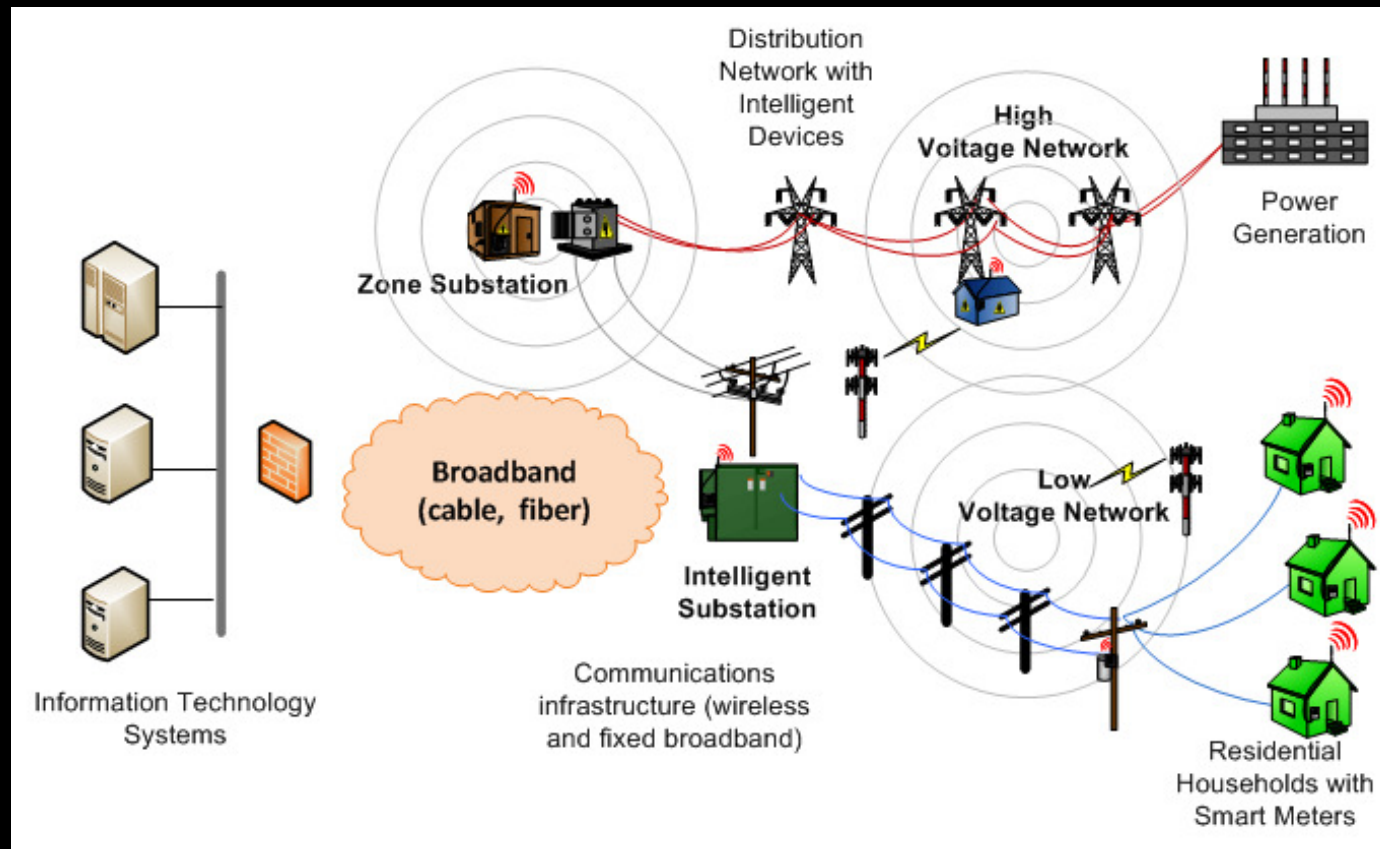- One of largest smart grid projects globally

Amsterdam

- Smart meter pilot to reduce CO2 emissions by 14%
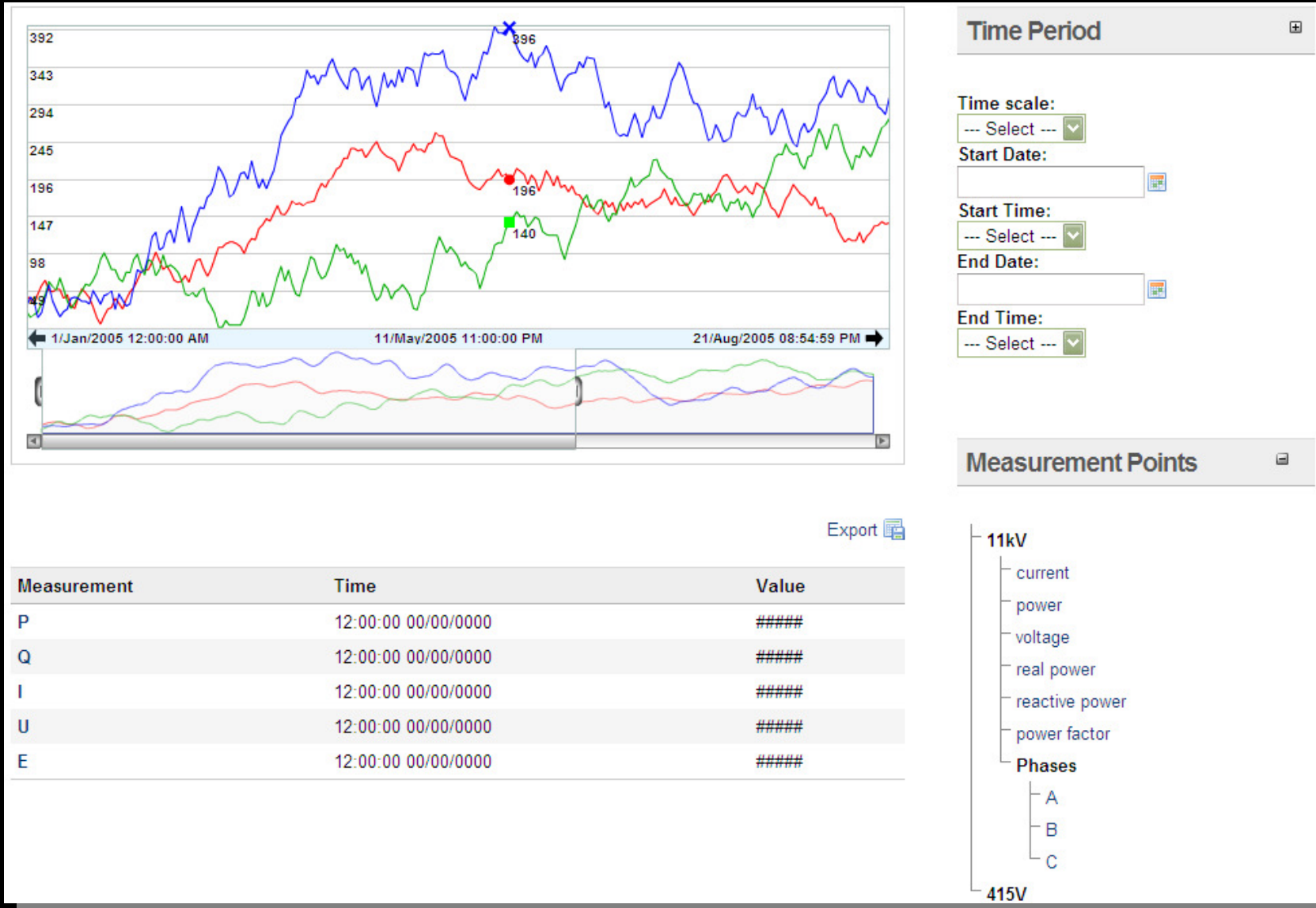
Why Implement a Smart Grid?

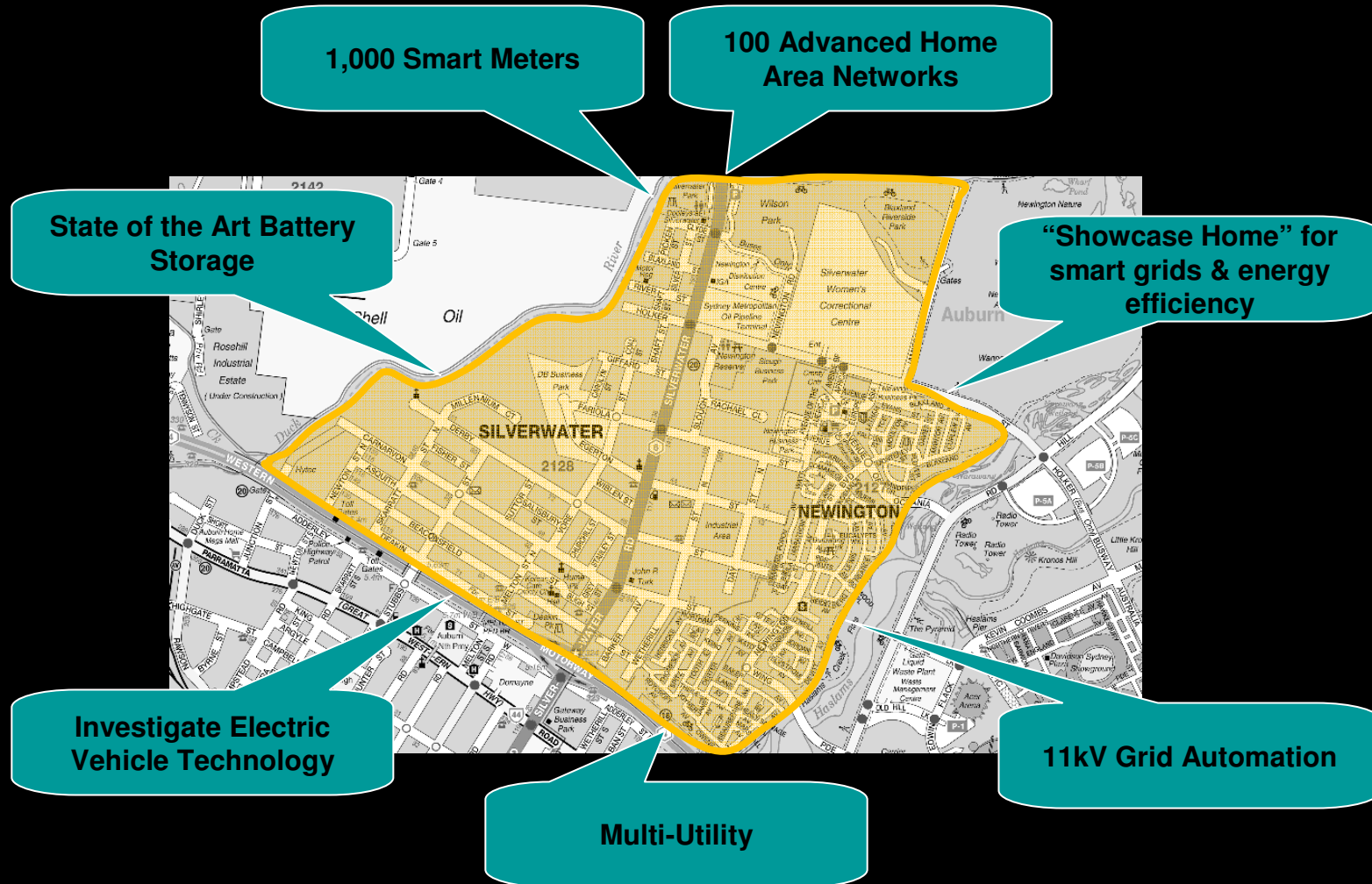*Simon Mingay, Green IT: A New Industry Shock Wave, Gartner.*
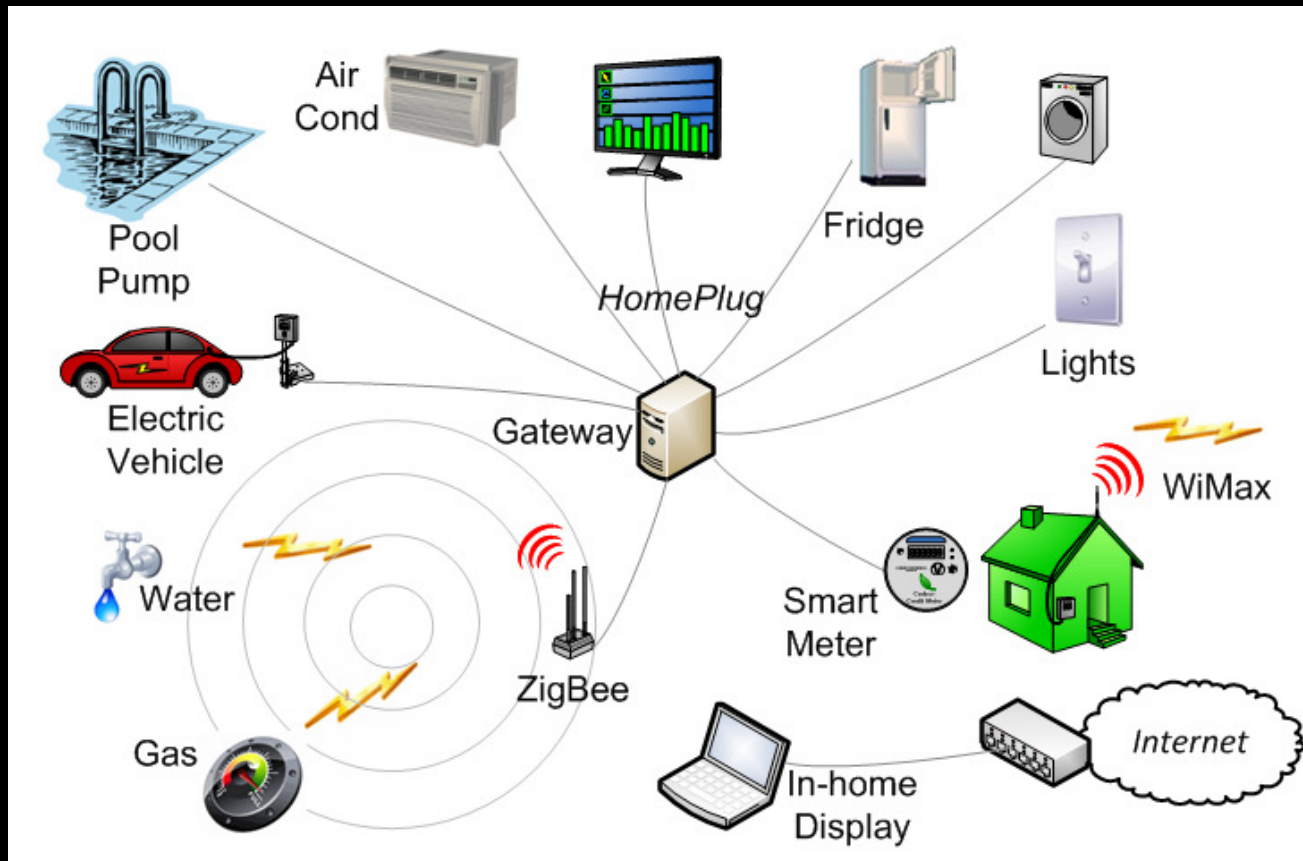
Smart Grid Case Study: Smart City

Smart Grid Case Study: Advanced Analytics (video)

Smart City Trial: Newington Suburb

1,000 Smart Meters

100 Advanced Home Area Networks

State of the Art Battery Storage

"Showcase Home" for smart grids & energy efficiency

Investigate Electric Vehicle Technology

Multi-Utility
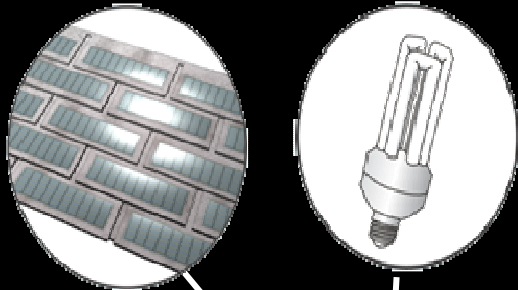
11kV Grid Automation

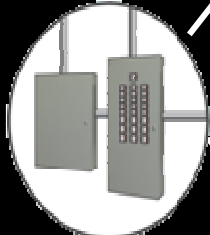# Smart City Trial: Solution Overview

Smart Home

Existing Solar Panels on Rooftops at Newington to be complemented with battery storage.

In-home portal providing visibility to electrical usage and carbon footprint.
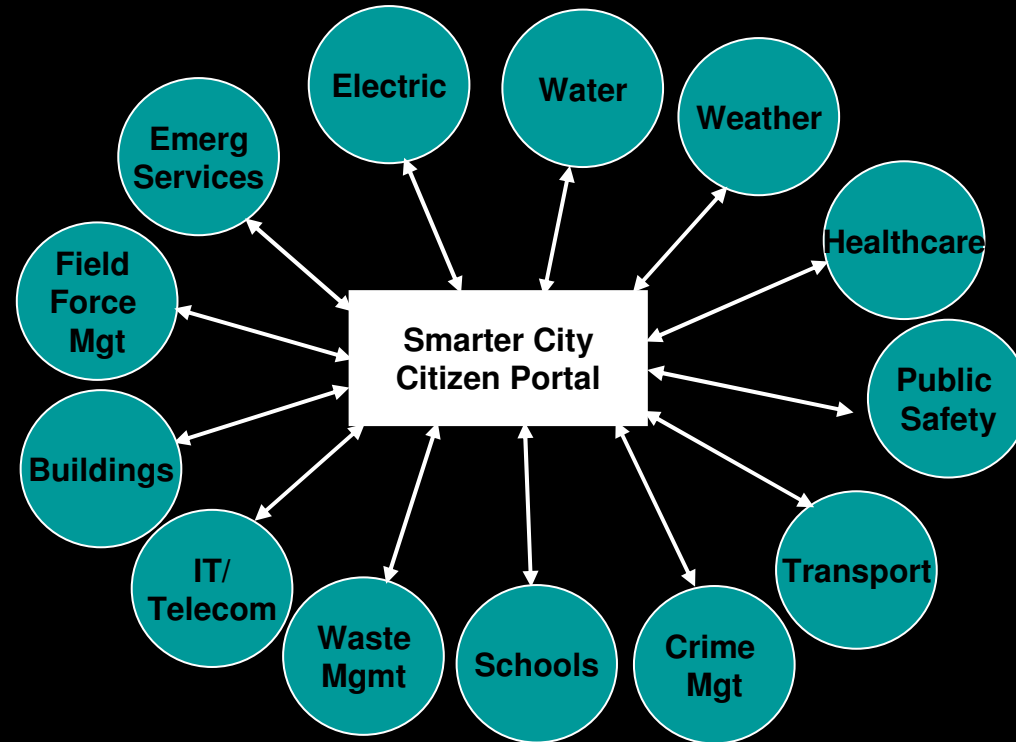
Currently undertaking an Electric Vehicle Study and its application in Australia.

Smart Meter

Gas Meter

Water Meter

Smarter government services

Electric Water Weather

Emerg Services

Field Force Mgt

Healthcare

Smarter City Citizen Portal

Public Safety

Buildings

Transport

IT/ Telecom

Waste Mgmt Schools Crime Mgt
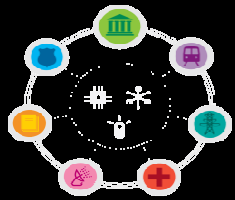
City of Albuquerque

- Productivity improvement of almost 2,000%

Los Olivos, Lima Peru

- Metropolitan network integrates education, health and safety services

Kitakyushu, Japan

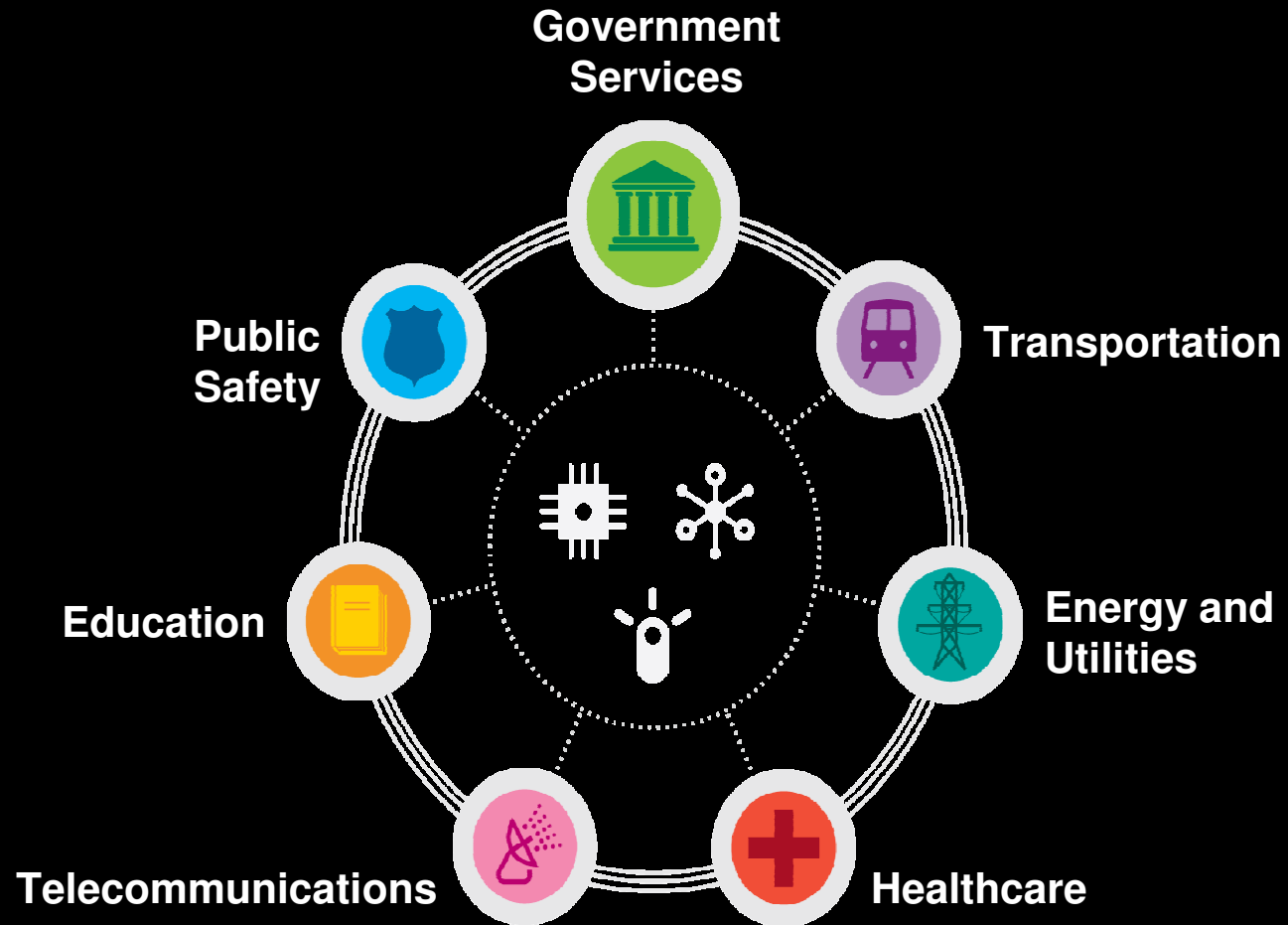- 40% reduction in CO_2 emissions by 2030 and 70% by 2050

Smart city

Masdar City is being built from scratch near Abu Dhabi. Planners are working with top scientists, engineers and innovators to create interconnected systems and manage them through an integrated city dashboard.

Putting it all together

Government
Services

Public
Safety

Transportation

Education

Energy and
Utilities

Telecommunications

Healthcare

Smarter planet solutions are receiving significant attention.

These solutions are now possible, due to low cost communications systems, telemetry devices, and availability of on-line based technologies.

Possible now to address a greater range of problems facing humanity.