

# SMART CITIES AND CONNECTED COMMUNITIES

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# Overview: Opportunity and Challenge

Design, development, and deployment of an emerging class of cross-platform, service-integrated, technology products to enhance performance and/or create a platform for economic development in CITIES and COMMUNITIES

# What's Actually Happening

## The Making of a Smart Cities Market

- **Products:** Service-embedded infrastructure and public service applications (aimed at institutional and citizen users)
- **Actors:** public, private, philanthropic, “civic” intermediaries/firms/partnerships/networks
- **Process:** Technology diffusion for public sector commercialization (“upgrading,” efficiency, access)
- **Approach:** Test-beds (selected places and technologies)

# Deployment Strategies : 2 Paths

## **Bottom UP:** Social and Civic Entrepreneurship

- Civic Innovation: Hack-a-thons, crowd sourcing
- Civic IoT sets use cases: localized partnerships
- Prioritizes user connectivity, mobility, accessibility
- Prioritizes open platforms and interoperability for persistent innovation
- Grafts onto urban form/existing infrastructure

## **Top DOWN:** Industry-led and Market-driven

- Large scale implementation and proprietary systems
  - Prioritizes systems optimization: power, ICT, urban infrastructure
- Redeploys urban form/new infrastructure

# Selecting Technologies: 2 Paths

## Smart Cities Objects vs. Smart Cities Systems

### Process or Mechanism: Civic IoT (User Need Driven)

- **Actors:** Social Entrepreneurs
- **Products:** software --- apps --- small scale hardware (service embedded objects)
- **Requirements:** Light Connectivity; Distributed Power; Open Data and Open Platforms

### Process or Mechanism: Integrated Urban Systems (large scale, development projects driven)

- **Actors:** TNCs and Nat'l Governments implementing at the City-scale
- **Products:** Technology Systems upgrading established products/services/infrastructures
- **Requirements:** Market demand for large scale systems and services; Heavy Connectivity; Large scale power; Proprietary Platforms

# Smart Cities Objects: Connected Living



Multimodal Connectivity



Smart Trash Cans: Wireless Hotspots, Solar Powered, Embedded Sensors

# Integrated Smart Cities Systems: Large-Scale Demonstration Projects



Songdo's U-Life Center, a wall of screens streams real-time footage from the CCTV cameras



Requires Large  
National Infrastructure  
Investments  
at the City Scale

Example:  
Songdo, South Korea

# Selecting Cities: Privileging Places

## Process or Mechanisms:

- Competitions and Challenges at City-scale

## Actors:

- **Defined by Resources:** public, private, philanthropic, “civic” intermediaries/firms/partnerships/networks

## Priority:

- **Technology diffusion:** for public sector commercialization (“upgrading,” efficiency, access)

## Criteria:

- **Capacity and Scalability:** Design, development, and deployment of an emerging class of cross-platform, service-integrated, technology products to enhance performance or create a platform for development



# Grand Challenge: Uneven Development

Confronting the patterns and implications of uneven investments in urban innovation

- Uneven capacities across cities to **design** and **absorb** new technologies relevant to both performance management and optimization and
- Uneven distribution of technologically-advanced infrastructure and its impact on the **economic competitiveness of cities inside/outside the core**
- Peripheral cities are adopting designs and models developed and tailored for core cities --- causing a **convergence towards core cities needs/priorities/circumstances** embedded in the design of "smart city solutions"

# Implementation Grand Challenges

## **Navigating and Managing...**

Multi-scalar and varied governance regimes

Distributed decision-making

Regional variation and locally tailored solutions (technology and process)

Complex funding mechanisms

Contested priorities

Dynamic implementation

Lack of generalizable models

**The Local isn't the Enemy.**

**The Local is the Reality.**