

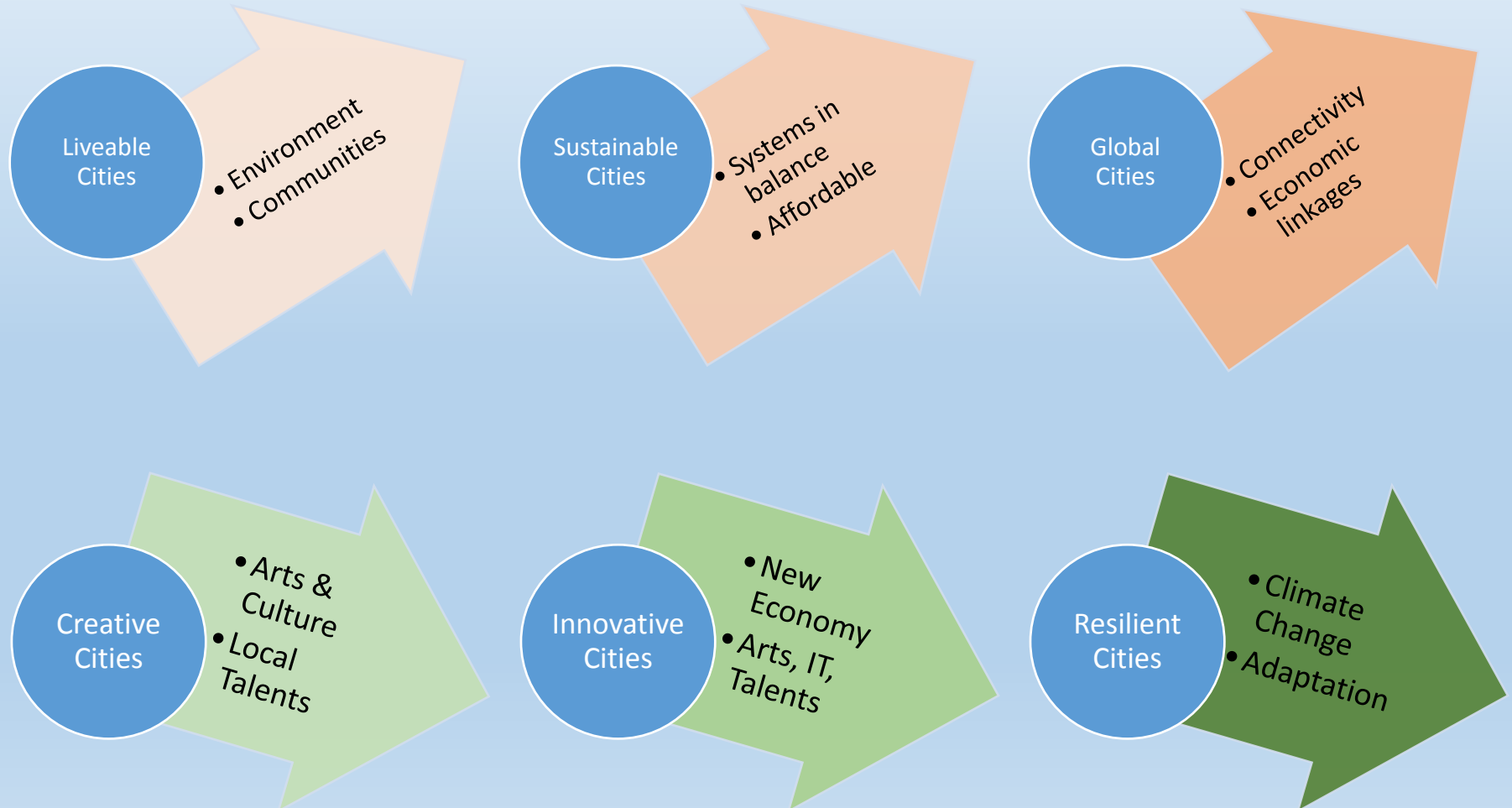
Smart Cities

Definitions, Models and Experiences

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Long line of city themes



Smart Cities....

If cities get “smarter” they may become more livable, productive, sustainable, inclusive and attractive

Narrow Focus

- Technology platforms can solve most urban development challenges
- Getting the right technology is the key

Broad Focus

- Good city/metro governance & investment can use technology better in order to address urban challenges in Health, Education, Housing, Transportation, Waste, Energy, Water, Crime & Security, and Business Support
- Technology platforms need to be coupled with empowered city leaders and governance, good design and engineering and willing citizens

Definitions depend on focus

European Commission

Energy Efficiency, Renewable Energy and Green Mobility

Scottish Government

Integration of data and digital technologies into a strategic approach to sustainability, citizen well-being and economic development

Inter American Development Bank *adopted International*

Telecommunication Union's definition :

An innovative city that uses ICT and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social, and environmental aspects

Definitions depend on focus

China:

Smart cities utilize state-of-art information technology, such as, internet of things, cloud computing, big data, and GIS systems to improve urban planning, construction, management and service delivery.

India:

Promote cities that provide core infrastructure and a decent quality of life to citizens, a clean and sustainable environment and application of 'Smart' Solutions.

Korea's U-City:

Is a future city where ubiquitous infrastructure is built by integrating cutting-edge ICT into urban infrastructure to provide ubiquitous services such as transportation, environment, and welfare at anytime and anywhere.

Definitions depend on focus

World Bank (World Development Report 2016):

a city that leverages the latest in technology and connectivity to make better decisions and achieve the urban aspirations of its residents

Thailand:

- ❖ Development of cities for the future taking into account culture, environment, quality of life, economy and society;
- ❖ Relying on digital technology to ensure efficiency of living for residents;
- ❖ Create a good quality of life with safety, no crime, and be a developing learning society based on participation of all stakeholders in the society.

Models

City Program

- Dynamic local leadership
- University + local business initiative

Sector Program

- A Ministry (IT / S&T) driven program – policy & parameters
- May or may not include funding

Country Program

- National Policy / Scheme with or without funding
- Selective / Competitive participation

Industry Initiative

- Promoted by one or a consortium of firms
- Organic – building on one success after another

India: Smart City Mission (2015 to 2020)

Concept:

A City that has basic infrastructure, uses smart solutions to make infrastructure and services better

Two Pillars of the Mission:

- Area Based Development (85%): Retrofitting / Redevelopment / Greenfield projects with infrastructure; and
- Pan-city Smart Solutions (15%): Application of ICT to municipal services and infrastructure that benefits all of city residents

Progress:

Launched in June 2015 through a City Challenge Competition. 100 selected cities will receive \$21m each year for five years. Cities have to raise additional funding from other sources (i.e. WB ~USD500m)



U-City: Korea Smart City Program

Concept:

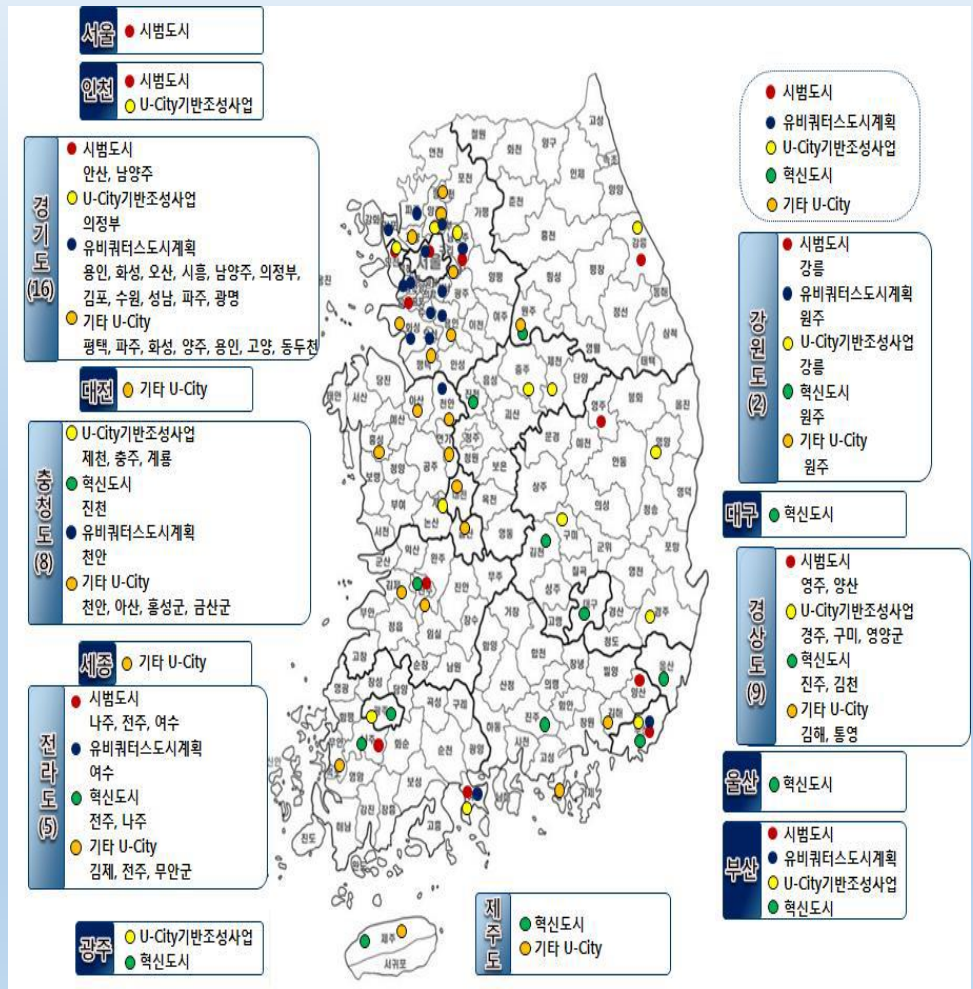
Ubiquitous infrastructure” using cutting-edge ICT to provide “ubiquitous services” at anytime and anywhere

Elements:

- **Collecting information** from sensors in/along infrastructure
- **Processing information** in U-City Operations Centers using intelligent facilities and IT infra
- **Using information** to provide Ubiquitous City Services anytime and anywhere (admin, transport, health & welfare, environment, crime & disaster prevention, facilities management, education, logistics, employment and sports)

Progress:

- Around 50 cities have started constructing Ubiquitous City (**total cities in Korea: 163**)
- 19 cities within Seoul Metropolitan Area (total 33 cities) have been constructing U-City elements



Seoul Metropolitan Government

Data-driven technological advances

Open data movement encourages innovation and government transparency

Smart Seoul 2015

- Built up infrastructure and advanced smart services
- 120 Dasan call center
- Smart Work Centers

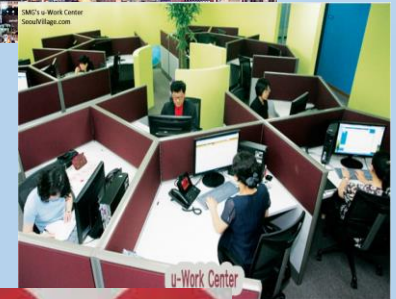
Automated Smart water meters, energy saving app

Internet connectivity:

- 97.5% households with broadband access
- eSeoul, uSeoul, mSeoul
- Free WiFi hotspots in parks and on public transport
- Smart devices for all initiative: 78% of residents have access

Smart urban mobility:

- Tmoney (electronic currency)
- Upass (contactless public transport card)
- Digital view terminals for real-time updates



Porto Alegre, Brazil

#POAdigital Initiative

- **DataPoA**: Open Data on mobility, health, education, environment, tourism, garbage disposal, etc.
- Multiple partnerships with start ups
- “Signature of co-operation” agreements based on “win-win” logic
- >30 applications developed by startups based on 60 public datasets, e.g.:
 - Customer service: 40% reduction in complaint registration and response time
 - Real time bus info: 230K users
 - Emergency notifications
 - Chat with Mayor
- Public data enabled growth of local start up economy

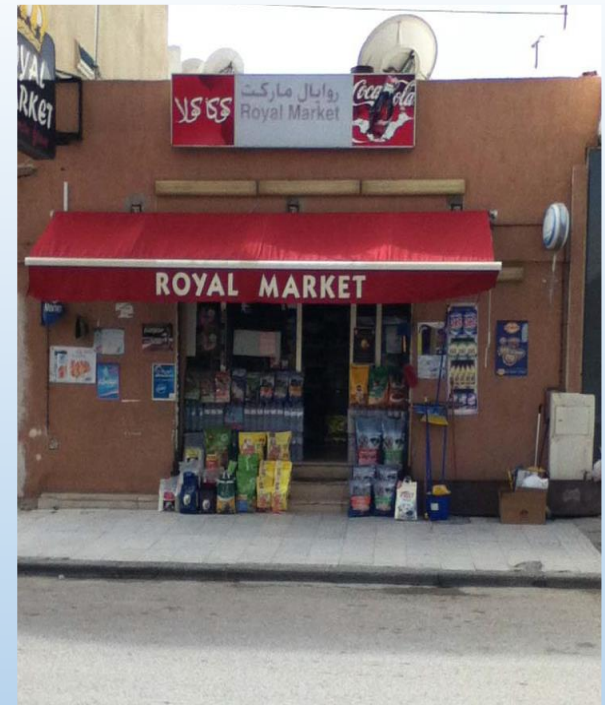


Valencia Smart City Platform, Spain

- First Spanish city to centralize municipal information on cloud service
- Aim to increase efficiency in service delivery: Traffic, street lighting, gardens, local police, pollution, street cleaning, waste collection, weather
- Include SMART clauses in municipal contracts: bidders have to include innovative elements in their bids
- Public tender for platform development and revenue sharing with municipality



Sousse, Tunisia



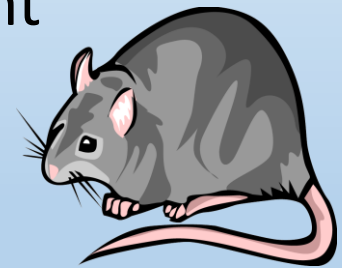
Aim: Improve municipality fiscal revenue

- Partnership with local startup to develop series of IT products to improve tax / user fee collection
 - Creation of digital map
 - Geo-location of all businesses
 - Software to collect monthly charges via smart phones
 - Follow-up for collection and complaints
- Before city had 700 payers; After platform >2150

Chicago, USA

Predictive Analysis for Rodent Control

- less data on rodents: no official rodent population count or geographical data for location of rodent colonies
- Identifying leading indicators in Chicago's 311 data: (a) calls / online complaints on garbage – 7 day window in rodent calls in same area; (b) water main bursts – increase in rodents
- Rates of garbage-categorized 311 calls and water main bursts serve as a measurable indicator to signal changes in rodent trends



Lessons

No shortage of new technologies and smart city solutions

Cities face two big challenges

- Lack of internal capacity to plan, finance and implement smart city initiatives and projects
- Weak governance and leadership to build broader public-private-people partnerships (4Ps)

Smart Cities thrive where

- Government promotes open, collaborative, and cohesive collaboration with multiple players in cities (4Ps)
- Top-down planning and infrastructure investment is combined with bottom-up, local initiatives

Lessons

Identify and create consensus on “focus”

Why? And Who?

- Don't start with technology
- Start with asking “why”
- Agree on “who” will do what

What will be achieved?

- Agree on clear, simple goals
- How will you know you are succeeding?
- What will be measured?

Thank you