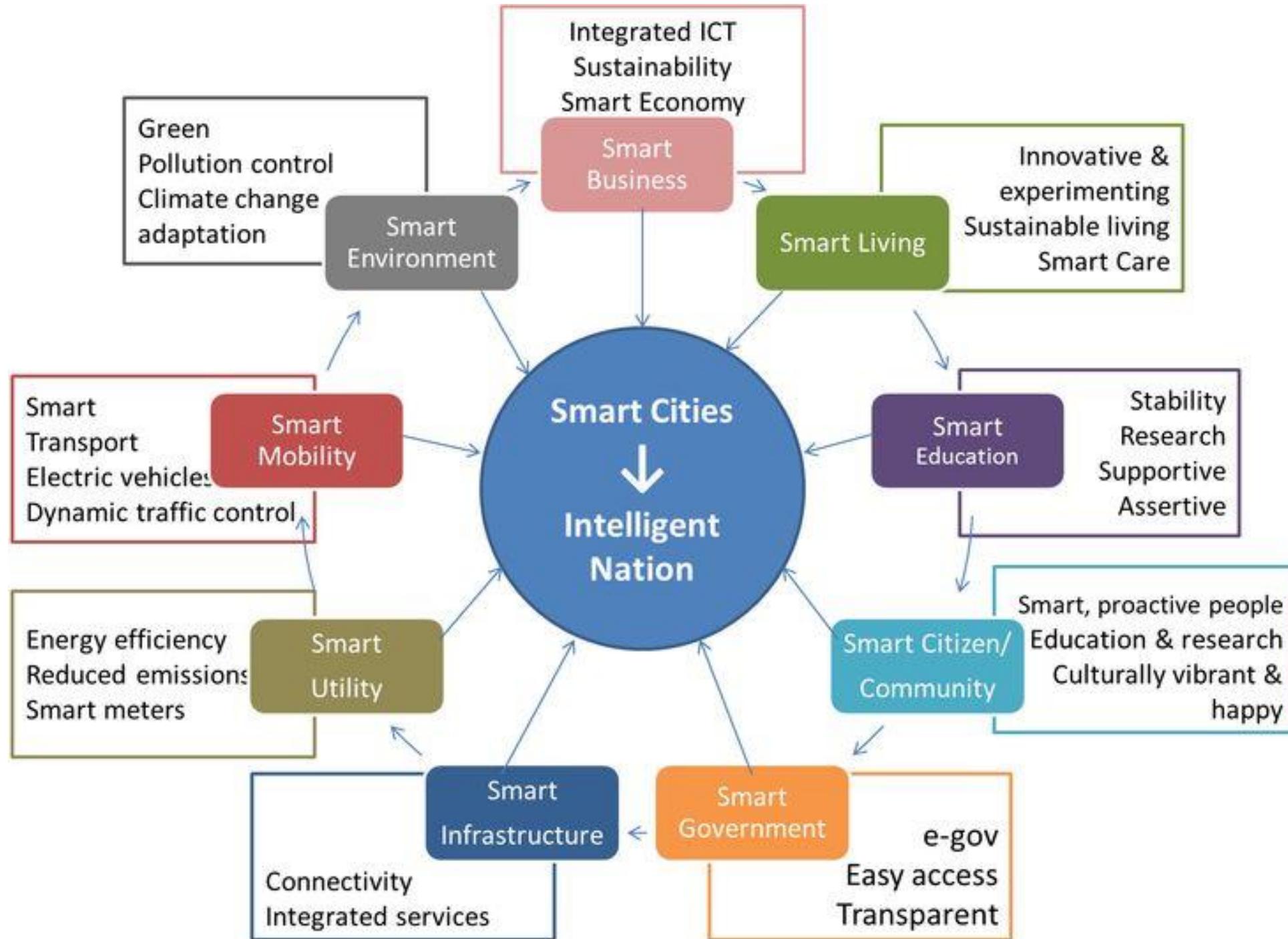




“When you get to a critical mass, the data on the benefits [of a Smart City] is so compelling: a 50 percent reduction over a decade in energy consumption, a 20 percent decrease in traffic, an 80 percent improvement in water usage, a 20 percent reduction in crime rates.”

— The smart-city solution, McKinsey & Company, October 2012





Smart cities data

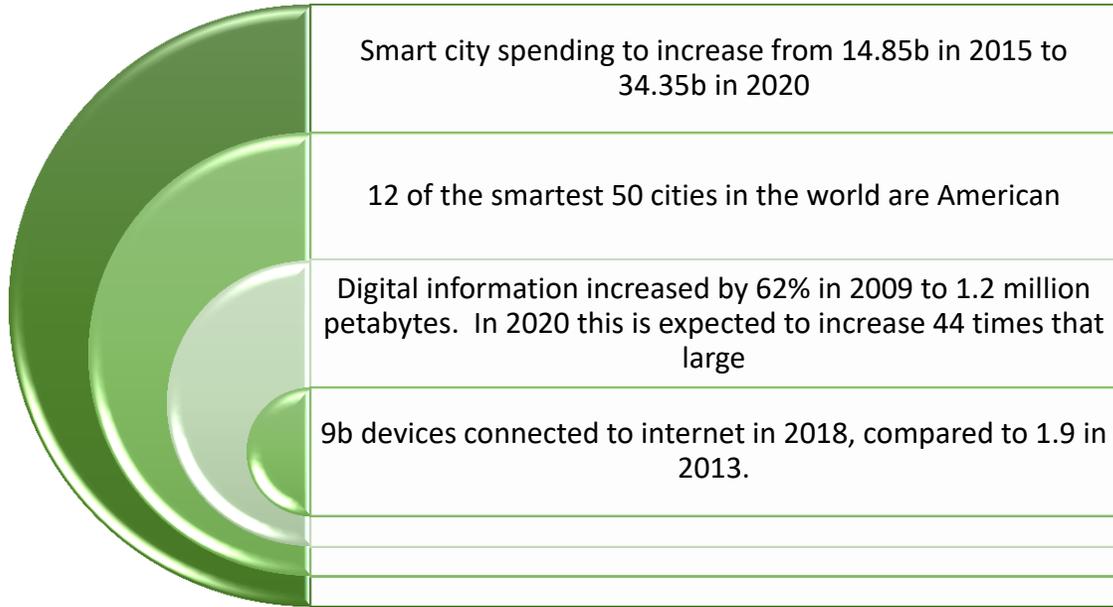
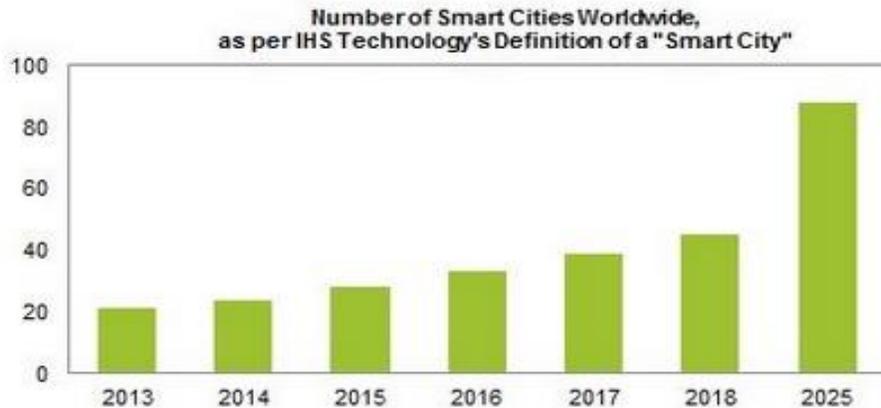


Figure 1



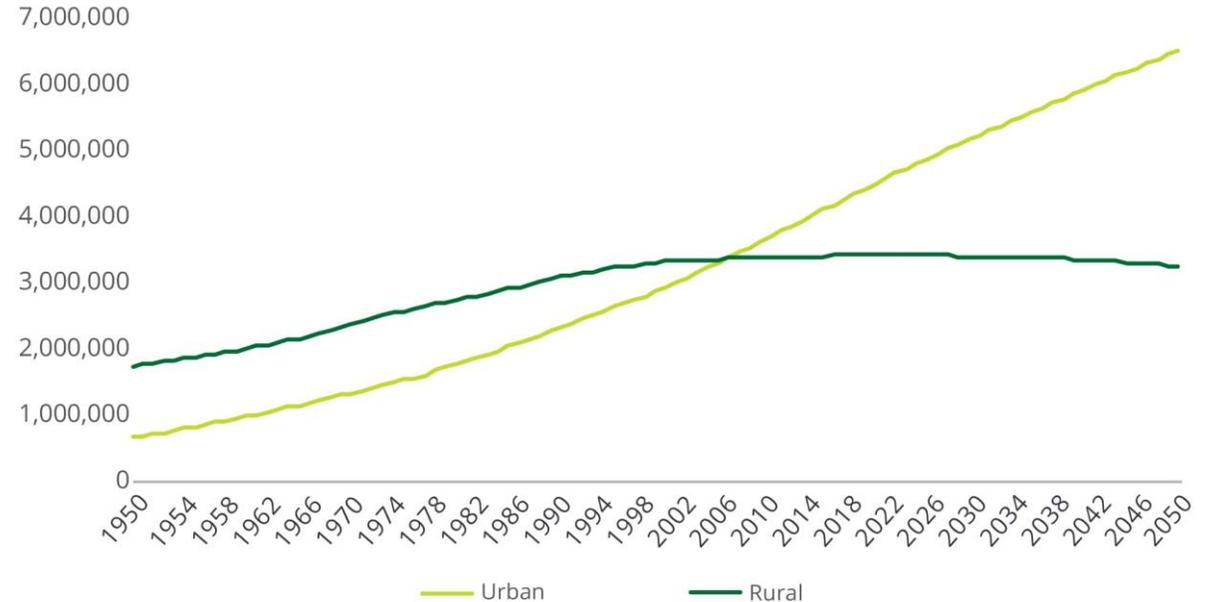
<https://electronics360.globalspec.com/article/4666/the-rise-of-smart-cities>

6 smart city trends in 2018

- Equitable innovation
- Electric vehicle infrastructure expansion
- 5G technology
- Cybersecurity
- Blockchain
- Microtransit

<https://www.smartcitiesdive.com/news/6-trends-that-will-define-smart-cities-in-2018/513889/>

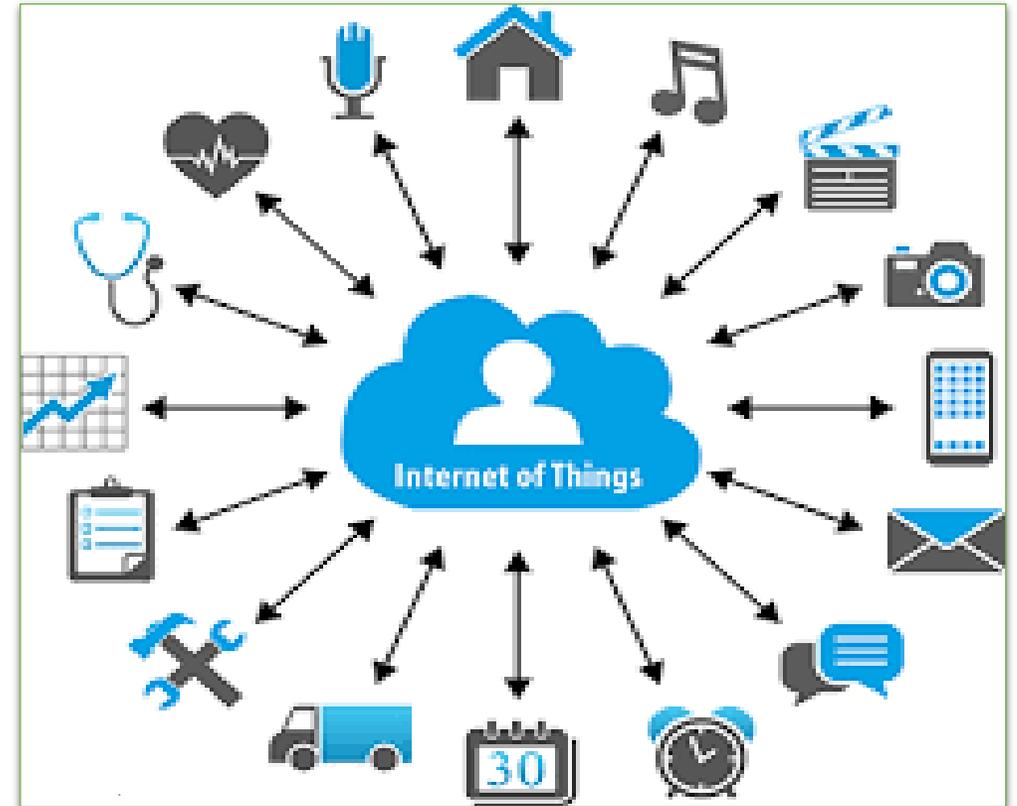
Figure 2. Urban and rural populations of the world, 1950–2050 (in thousands)¹⁰



Source: United Nations Department of Economic and Social Affairs, Population Division, World Urbanization Prospects (2014 revision).

What is a smart city?

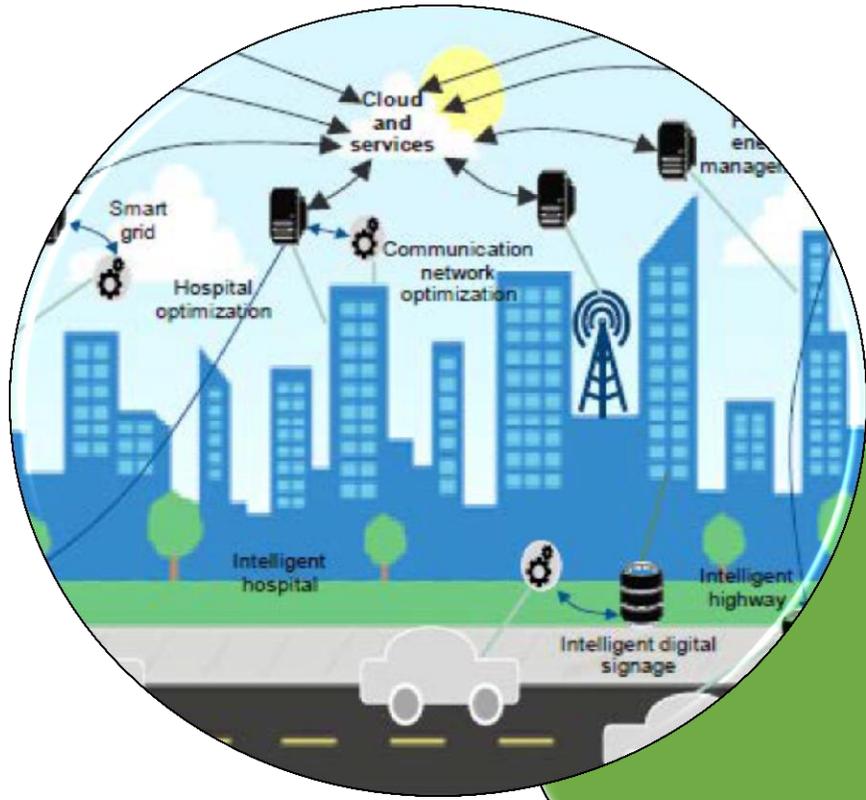
- Connected
- Participatory
- Organic



A city is characterized as smart city "when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic development and a high quality of life, with a wise management of natural resources, through participatory action



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Connected

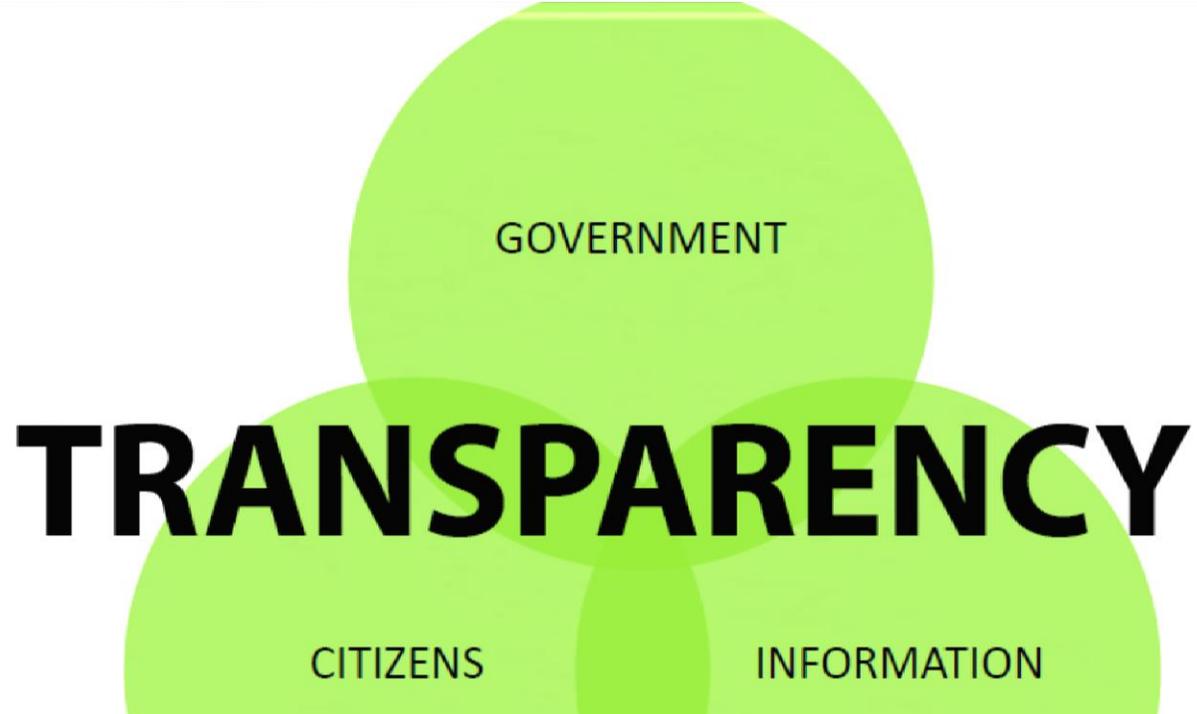
Networked

Vertically and Horizontally

Multidirectional



Urban Smart



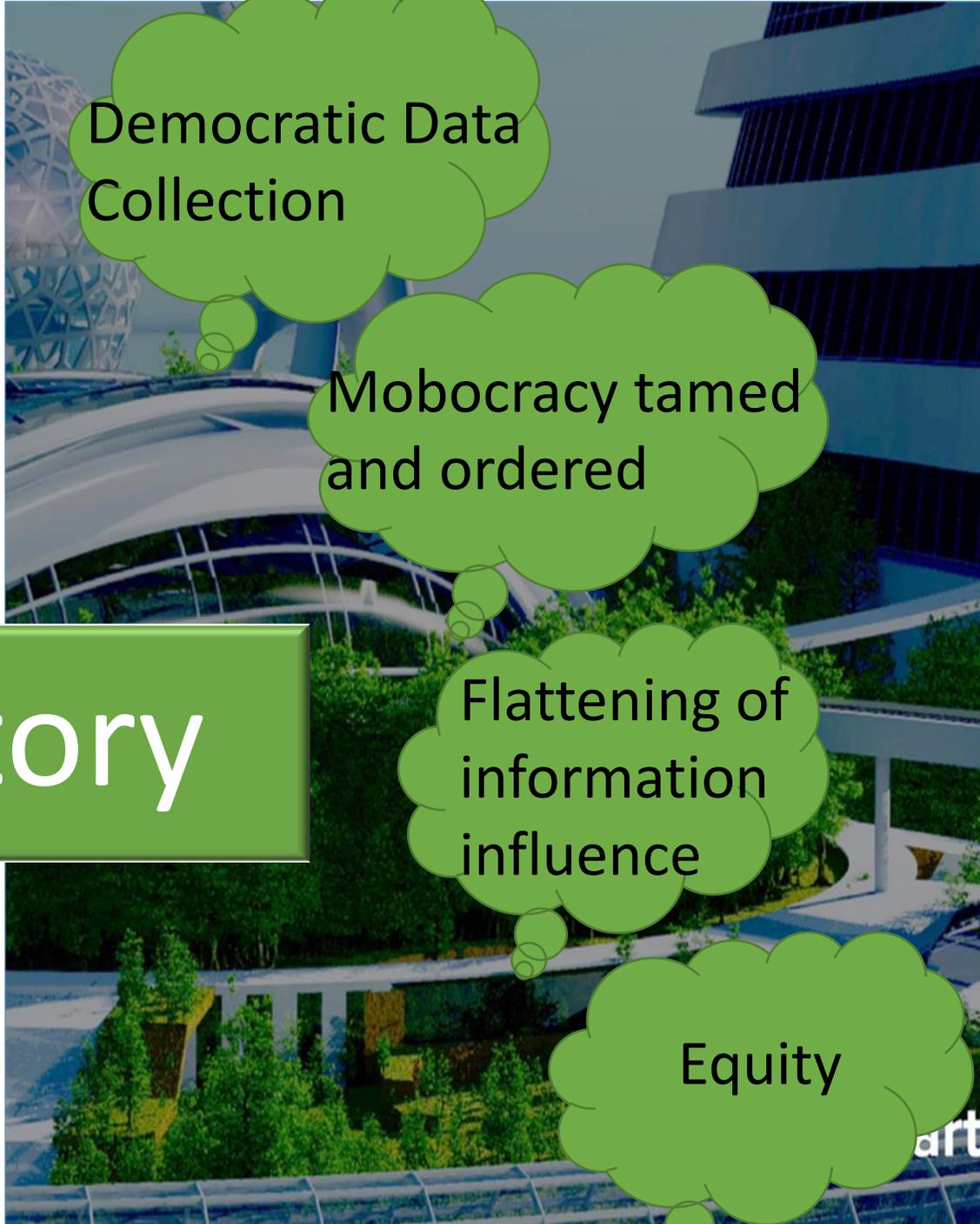
TRANSPARENCY

GOVERNMENT

CITIZENS

INFORMATION

Participatory



Democratic Data
Collection

Mobocracy tamed
and ordered

Flattening of
information
influence

Equity

Smart Government Balanced Scorecard

Focus	"Smart" Concept	Scorecard Concepts				
CITIZEN	Smart Citizen	Citizen Engagement	Service Delivery	Well-Being	Inclusive Growth	Environmental Sustainability
FINANCE	Smart Finance	Policy & Planning	Public Investment Management	Value for Money	Long-Term Analytics	Financial Sustainability
INTERNAL PROCESSES	Performance Management	Design Thinking	Agile	Open Data	Open Government	Transparency & Accountability
LEARNING & GROWTH	Smart Public Service	Capacity Building	Continuous Learning	Talent Management	Succession Management	Public Service Reform

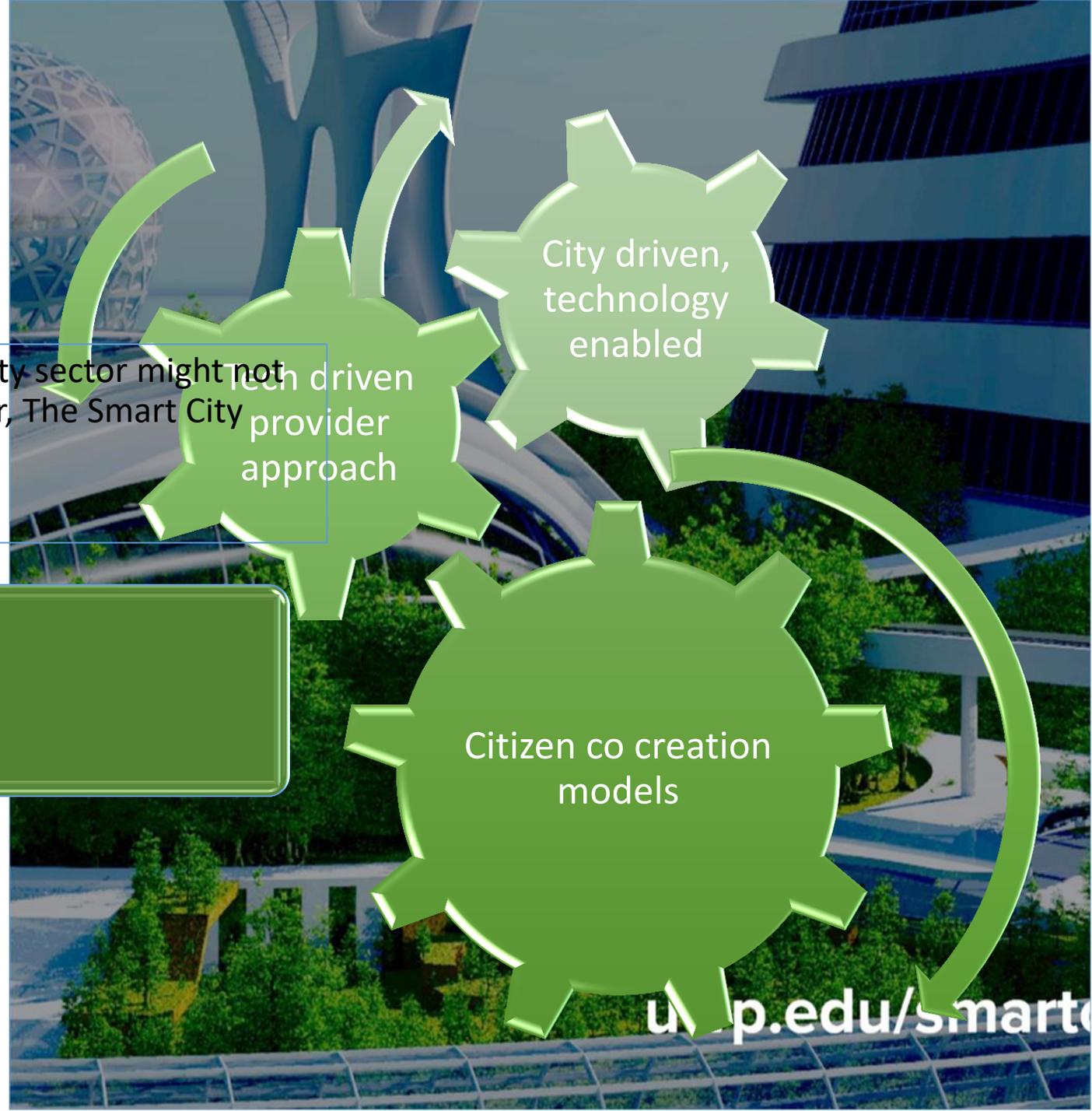


- Co-design and co-production by stakeholders
- social innovation processes related to public value generation.
- citizen centricity of smart city decision making

• The more I dig into it, the more I realise the Smart City sector might not be a sector, it's more of a way of thinking." Batchelor, The Smart City podcast 9/3/2018

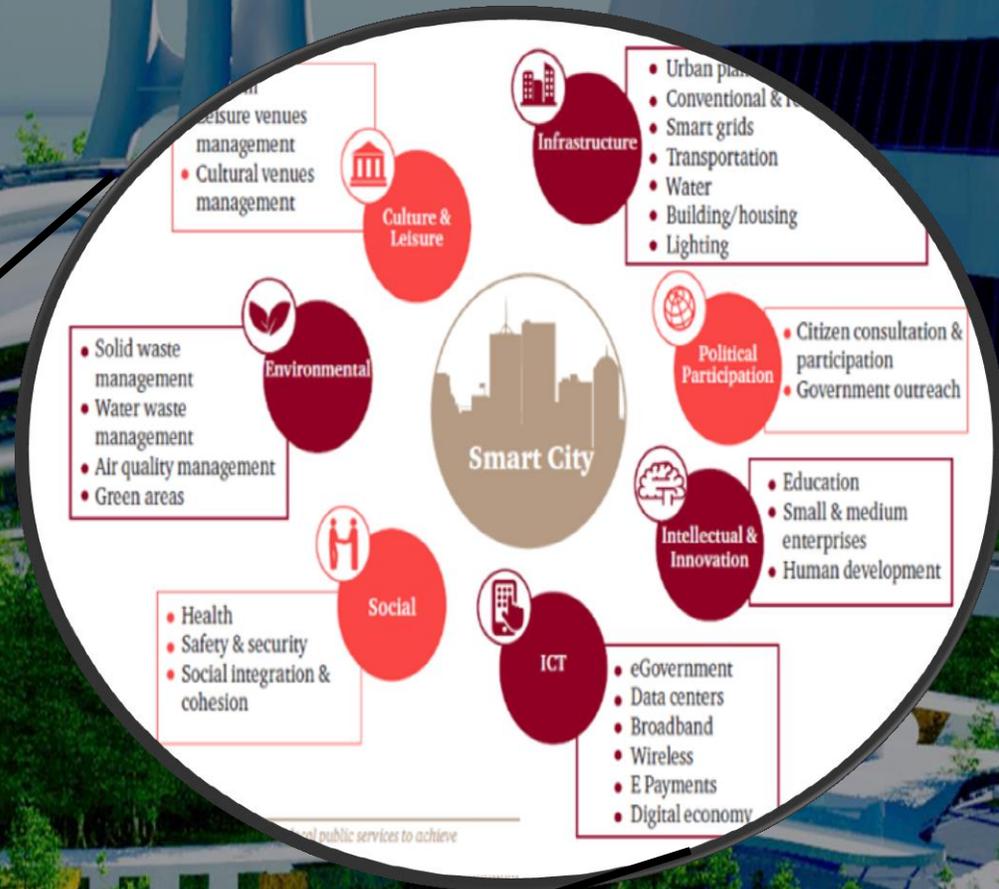
- Organic

- “blended” value services— simultaneously socially inclusive, environmentally friendly, and economically sustainable.



1. Creation of Technology Relationships
2. Contextualize lots of data
3. Dynamic decision making at point collection and the tech infrastructure
4. Long term adaptations create resiliency
5. Short term adaptations create efficiency
6. The city environment is continuously responsive

Concepts
Schmoncepts—
how does it work?



RESILIENT

SUSTAINABLE

HEALTHY

PRODUCTIVE

CREATIVE

INCLUSIVE AND EQUITABLE

P4 FOR THE INDIVIDUAL AND THE COMMUNITY

Predictive



Preventive

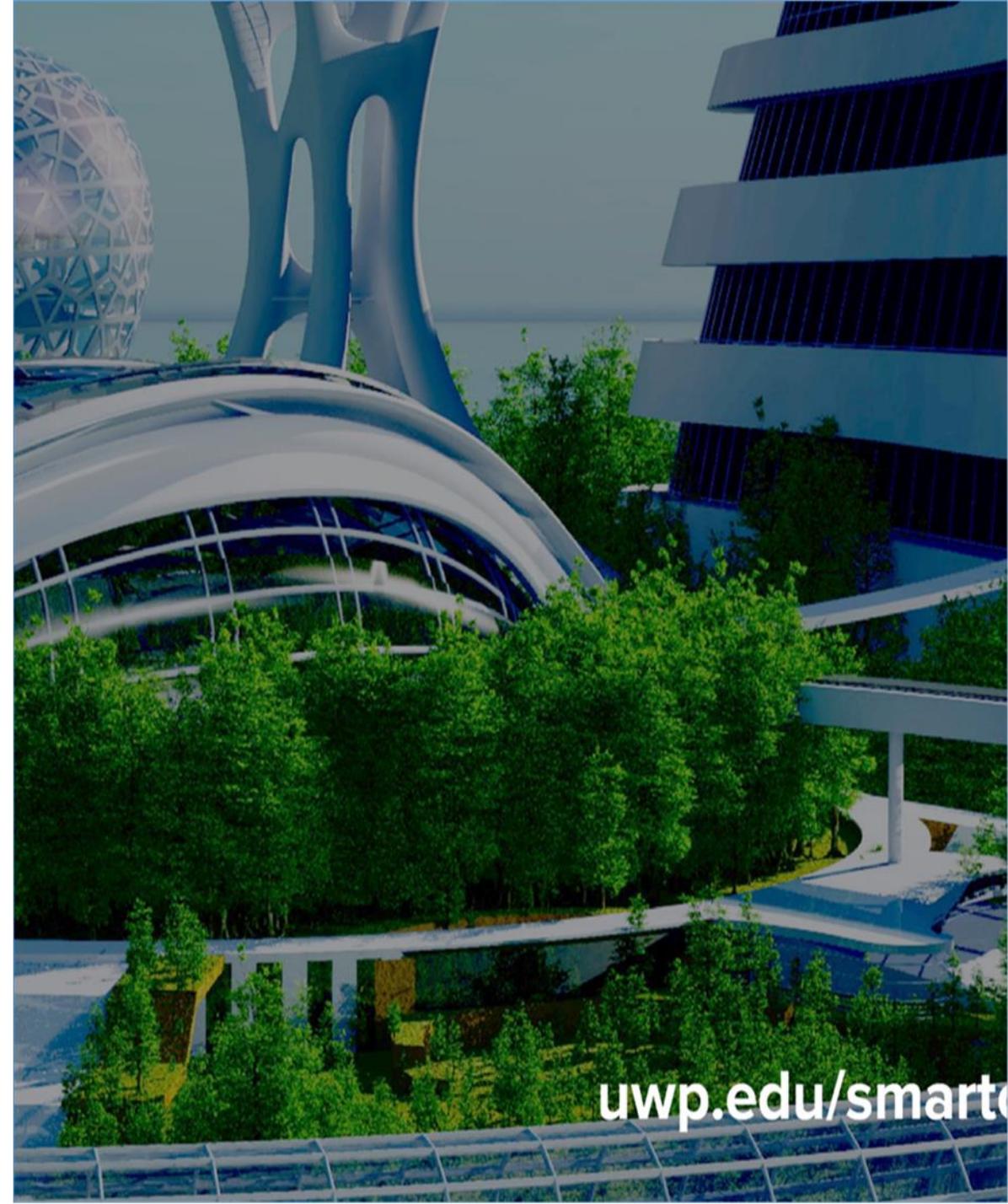


P4

Personalized



Participatory



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PRODUCTIVE AND CREATIVE



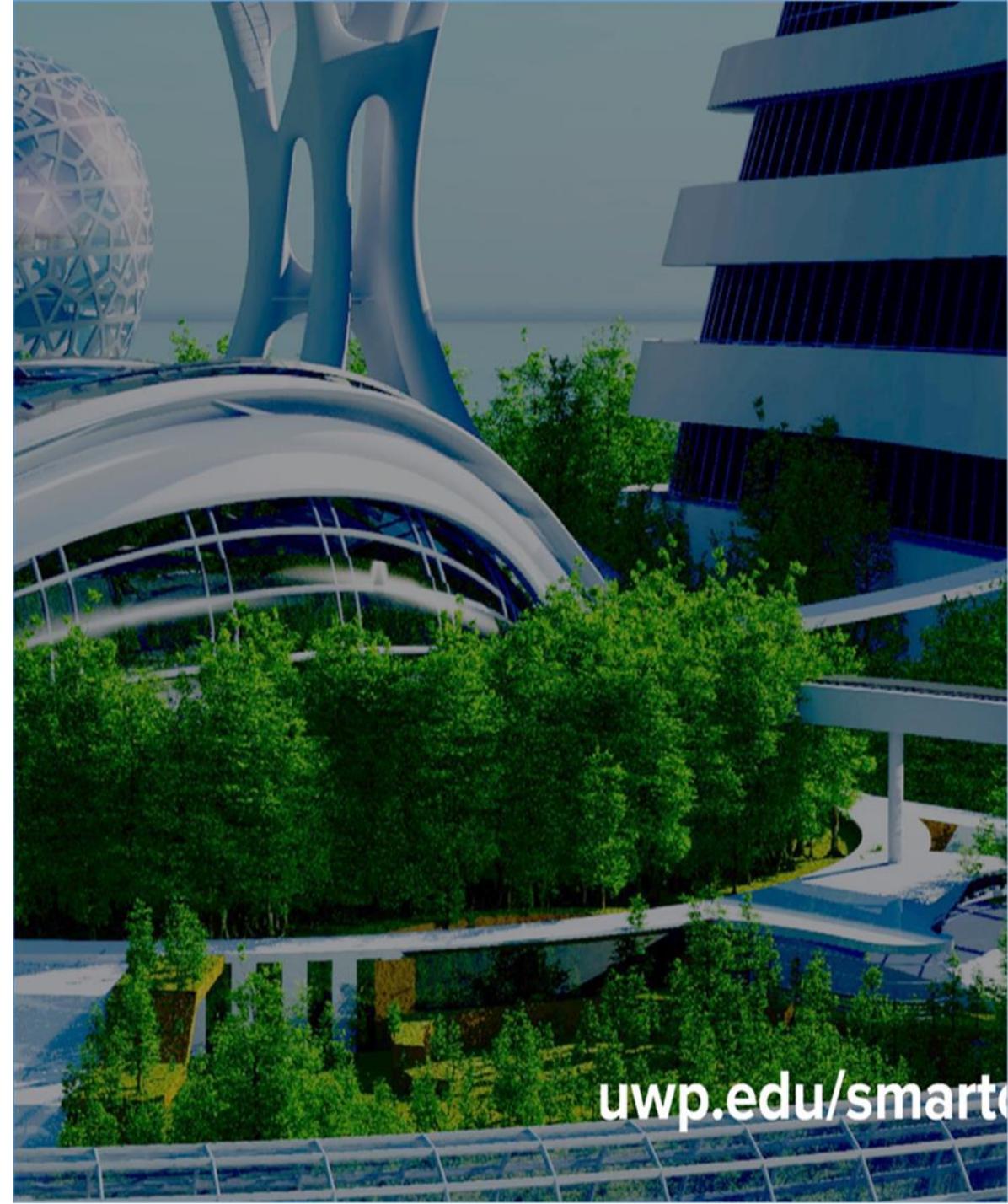
Incubating and accelerating disruptive business ideas and startup ventures



Aesthetics create familiarity

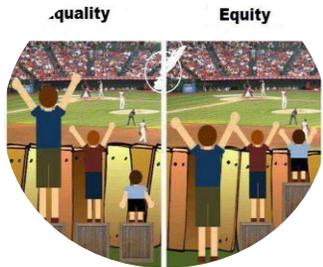


Creation of knowledge exchange economic system

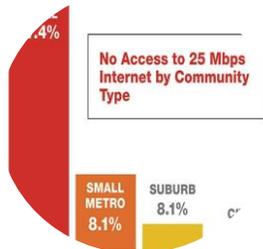


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INCLUSIVE AND EQUITABLE



Access AND Outcomes



Geographical, Physical, Digital



Equity Indicators



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Amsterdam

AMSTERDAM ENERGY ARENA

Peak shaving to even energy consumption

Grid services for stable power supply

3 MW power and **2.8 MWh** capacity

- Batteries from 148 Nissan Leaf electric vehicles
- Storing enough energy to charge 500,000 iPhones or supply 7,000 Amsterdam households for one hour
- Saving 116,683 tons of CO²
- System lifetime: 10+ years

ZIGGO DOME

Further energy services to the neighbours

AFAS Live

Increase self-consumption of solar power produced on the roof

Back-up power supply for Johan Crujff Arena during events

Load Management of car charging in the car park and V2G extension

supported by:
City of Amsterdam
Amsterdams Klimaat & Energiefonds
ininterreg

JOHAN CRUIJFF ARENA
Powering Business Worldwide

FAT·N

NISSAN

bam

THE MOBILITY HOUSE



• **Pittsburgh** - deploy smart traffic signal technology – proven to reduce congestion by up to forty percent

• **San Francisco** - connected vehicle technologies to allow the signal system to detect red light-violating vehicles and adjust timing, and personal wireless devices to prioritize pedestrian travel and safety at intersections.

• **Denver** –build a connected vehicle network, and install automated pedestrian detection at difficult crosswalks.

• **Portland** –integrate shared- use mobility options into its existing trip planning app, allowing users to plan efficient trips even without nearby transit access.

SMARTCOLUMBUS VISION

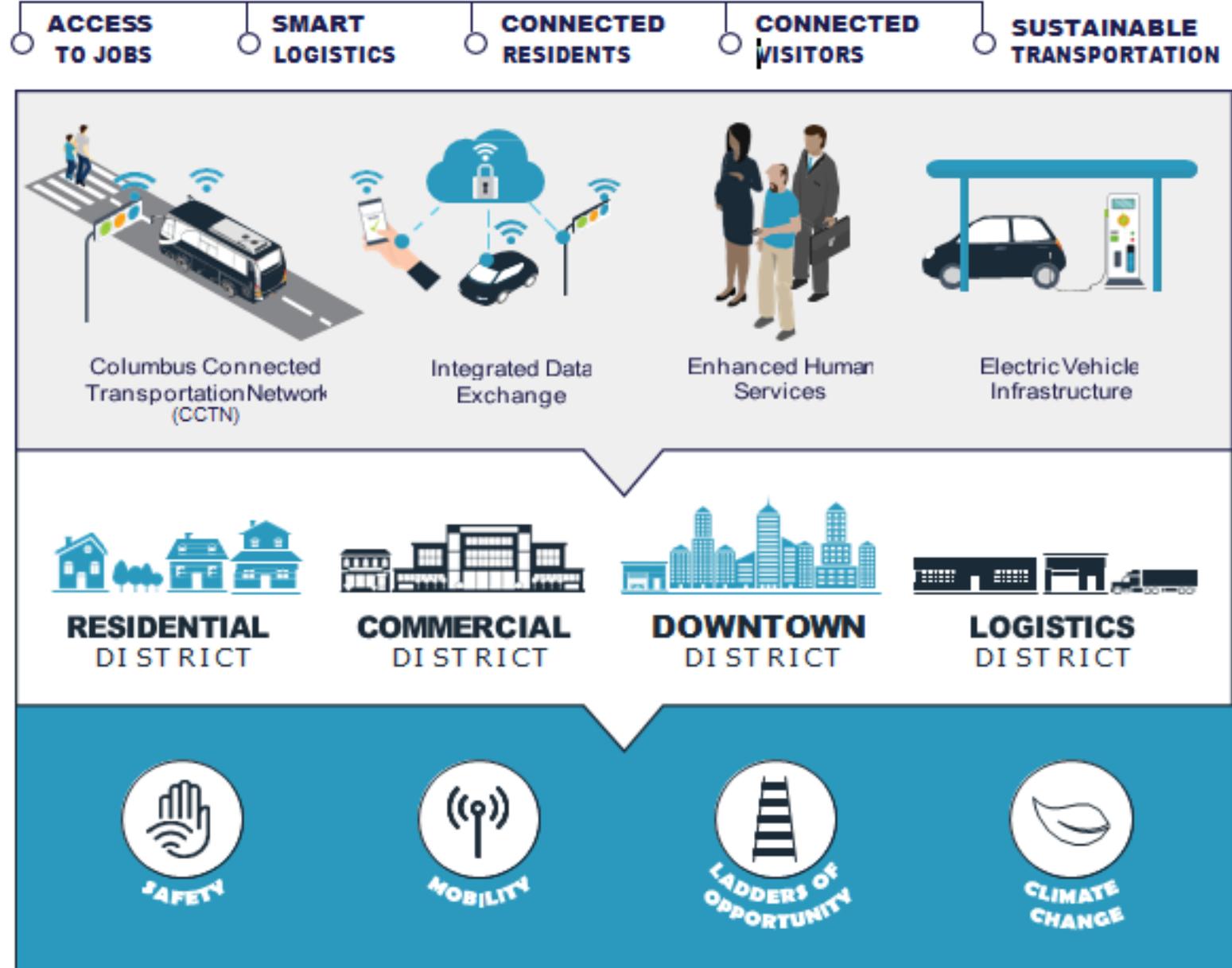
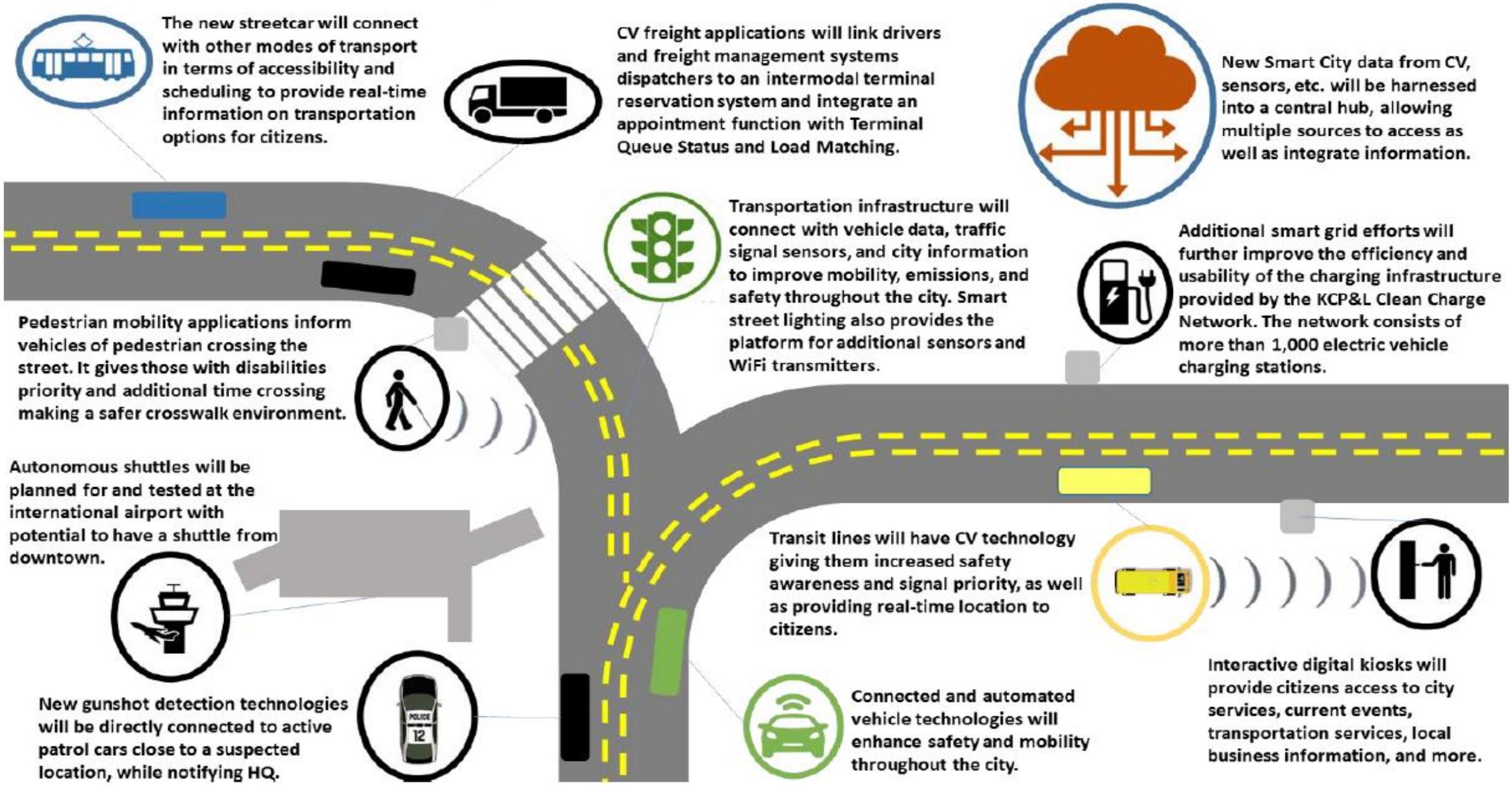
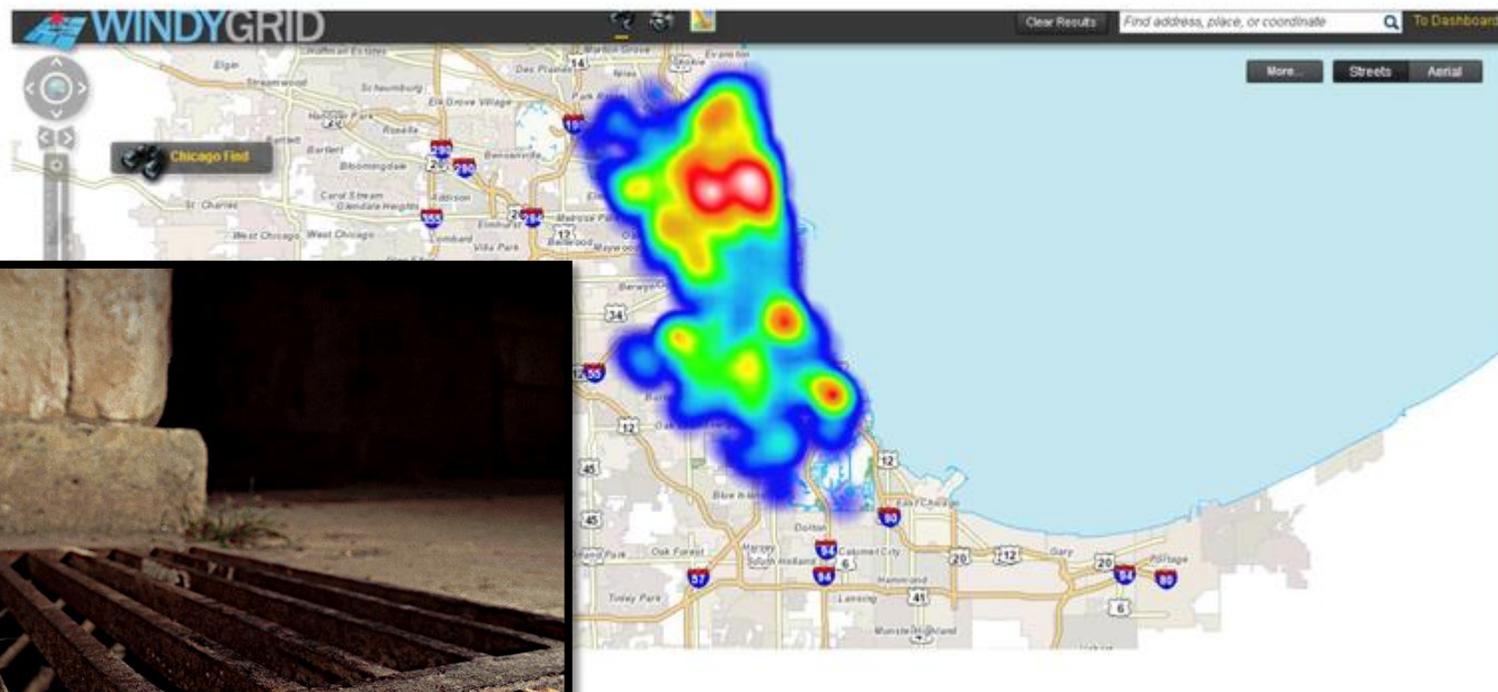


Figure 1-1: Kansas City Smart City Vision



AoT in Chicago

Heat map of rodent complaints in Chicago



ONE

- THE ARRAY OF THINGS

TWO

- DEEP LEARNING

THREE

- EDGE
COMPUTING

a “fitness tracker” for the city, measuring factors that impact livability in Chicago such as climate, air quality and noise.



SMART CITY MANAGEMENT AND DECISION MAKING



THE
PUBLIC
GOOD