Smart Cities, Smart Europe:
Putting Our Energy into Innovation and Sustainability

Setting the Scene

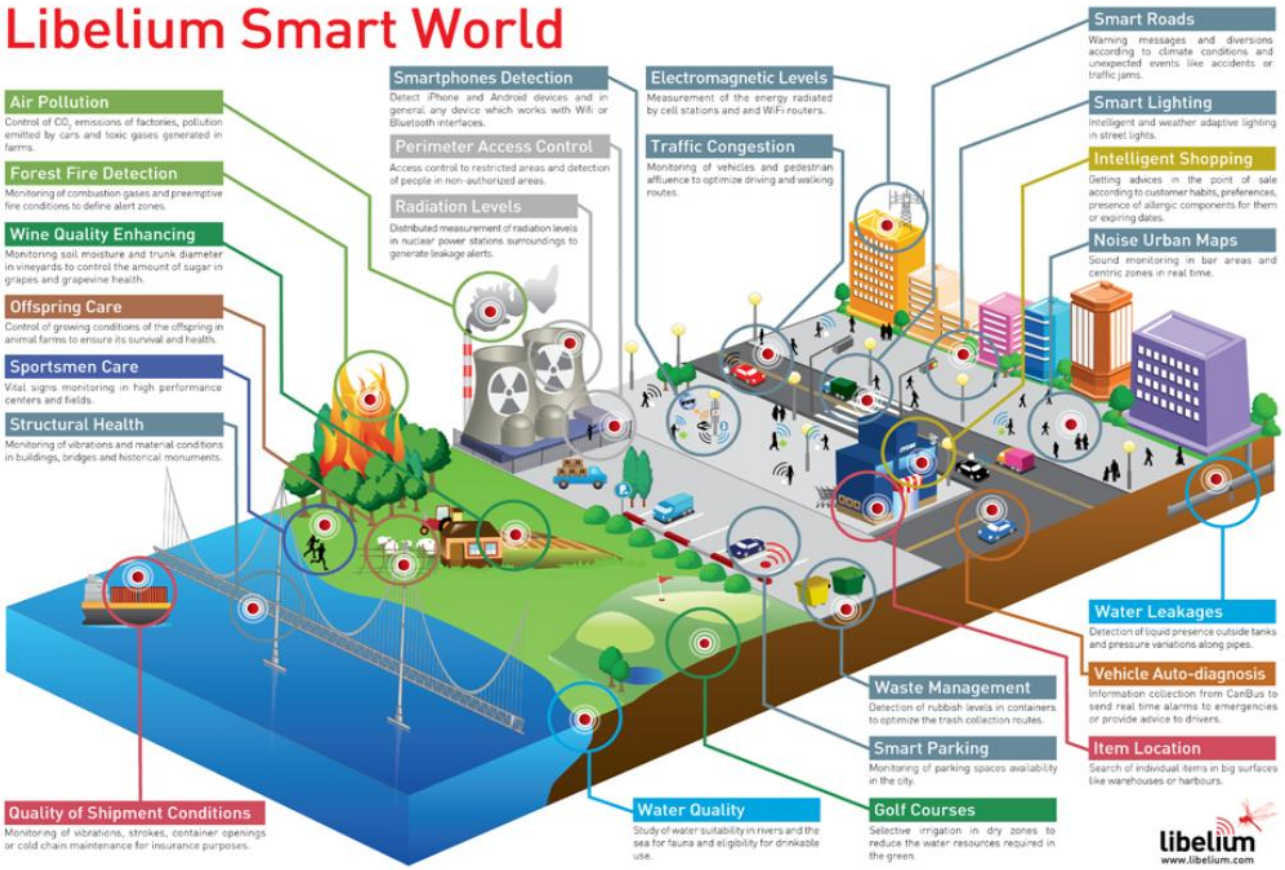
Geert Adriaens, DSP Valley

Wednesday 9th July 2014

Thon Hotel Bristol Stephanie

Brussels

Where to start?....



Dumb Cities versus Smart Cities?

AT A GLANCE: TRADITIONAL CITIES VS SMART CITIES

	The Problem	The Smart City Solution
Planning	• Ad hoc and decentralized • Cost savings aren't realized • Limited potential for scalability of investment	• Coordinated and holistic • Resources are shared • Cost savings are fully realized • Investments are scalable • Improved city planning and forecasting
Infrastructure	• Runs inefficiently • Costs more money and resources to run	• Optimized with cutting-edge technology • Saves money and resources • Improved service-level agreements
System operators	• Guess at infrastructure conditions • React to problems • Can't deploy resources efficiently to address problems	• Enjoy real-time reporting on infrastructure conditions • Predict and prevent problems • Deploy resources more efficiently • Automate maintenance • Save money
ICT investments	• Piecemeal and siloed • Deliver suboptimal benefit • Don't realize economies of scale	• Centrally planned • Deployed across city departments and projects • Deliver optimal benefit • Provide maximum value and savings
Citizen engagement	• Limited, scattered online connection to citizens • Citizens can't make optimal use of city services (or easily find them)	• Complete and singular online presence • Citizens can easily find and use services • Citizens can participate in smart city initiatives • Two-way communications between government and people • Specialized services focused on the individual citizen • Citizens can both contribute to and access real-time intelligent city data
Sharing data	• Departments and functions are siloed • Departments rarely share data and collaborate on initiatives	• Departments and functions are integrated and/or shared • Data is shared between departments and better correlated with other data services • Results are improved • Costs are cut

Figure 1.14

CHAPTER 1: INTRODUCTION TO SMART CITIES | Smart Cities Council Readiness Guide 16

SMART CITIES READINESS GUIDE

SmartCitiesCouncil

Smart Cities: A Complex Picture

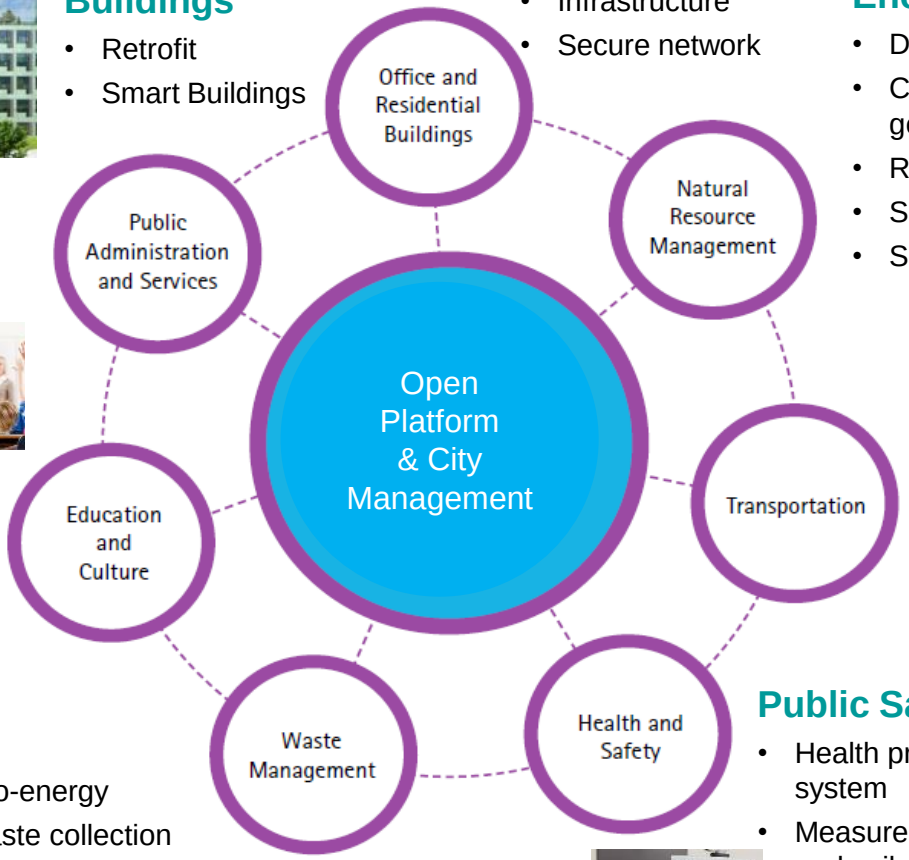
Buildings
- Retrofit
- Smart Buildings

Communication
- Infrastructure
- Secure network

Energy
- Decentralize energy systems
- Combined heat and power generation
- Renewable sources
- Smart metering
- Smart grids

Water
- Reduce leakages
- Smart metering

Education
- Quality Education
- Creativity and innovation



Mobility
- Public transport alternative
- Integrate all modes of transport
- Congestion charge
- Clean vehicles
- Telepresence

Green space
- Young people and children
- Elderly

Waste
- Waste-to-energy
- Solid waste collection systems
- Recycling

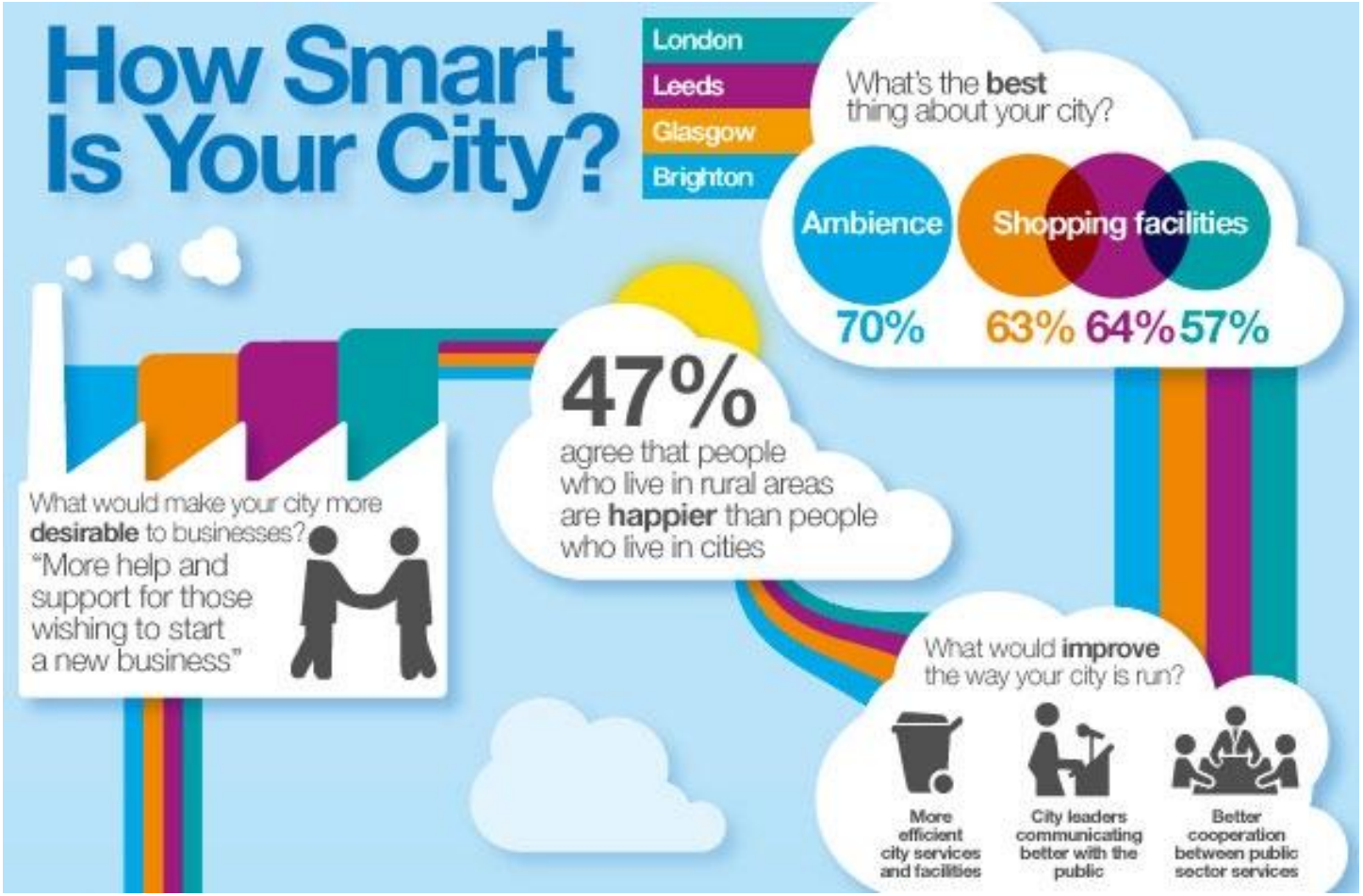
Public Safety & Health
- Health prevention and health care system
- Measure and improve air, water and soil quality

Source: Accenture

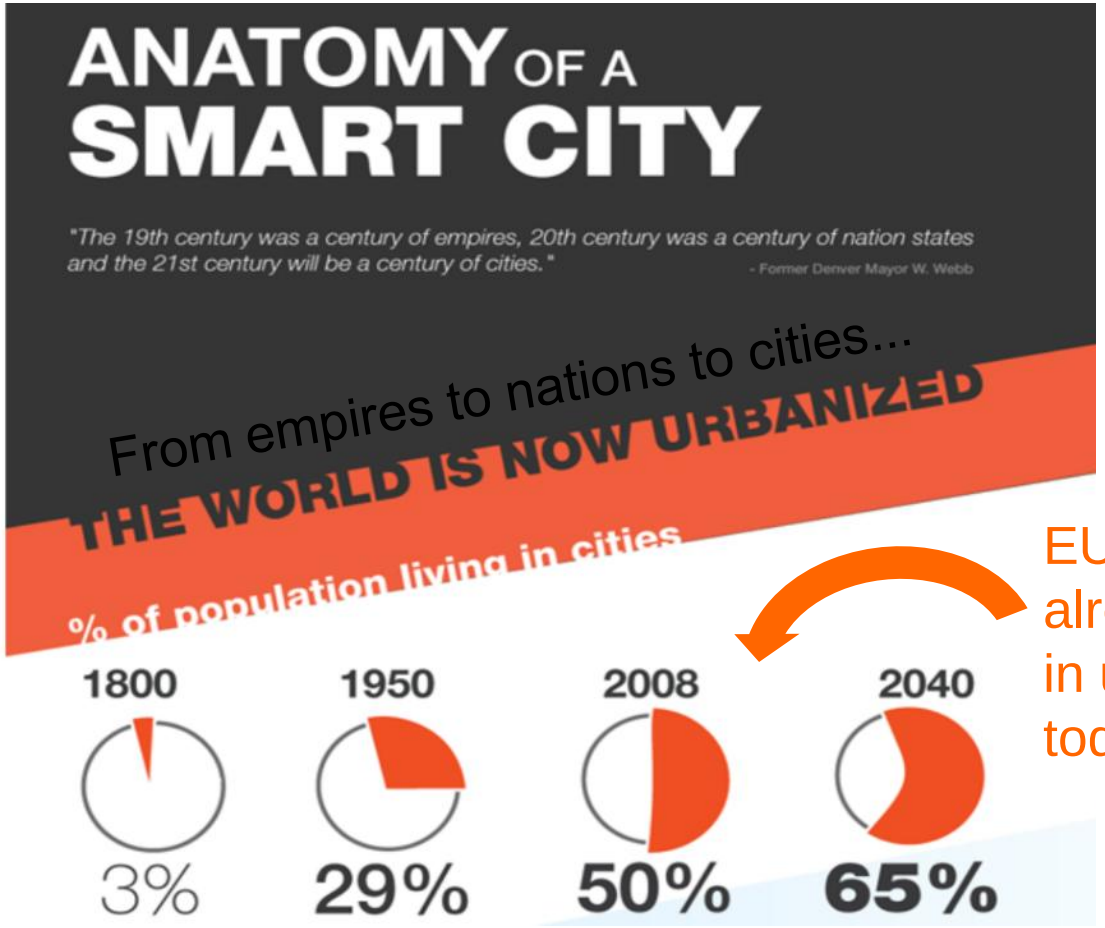
Smart Cities 6 Dimensions

SMART ECONOMY (Competitiveness)	SMART PEOPLE (Social and Human Capital)	SMART GOVERNANCE (Participation)
▪ Innovative spirit ▪ Entrepreneurship ▪ Economic image & trademarks ▪ Productivity ▪ Flexibility of labour market ▪ International embeddedness ▪ *Ability to transform*	▪ Level of qualification ▪ Affinity to life long learning ▪ Social and ethnic plurality ▪ Flexibility ▪ Creativity ▪ Cosmopolitanism/Open-mindedness ▪ Participation in public life	▪ Participation in decision-making ▪ Public and social services ▪ Transparent governance ▪ *Political strategies & perspectives*
SMART MOBILITY (Transport and ICT)	**SMART ENVIRONMENT (Natural resources)**	**SMART LIVING (Quality of life)**
▪ Local accessibility ▪ (Inter-)national accessibility ▪ Availability of ICT-infrastructure ▪ Sustainable, innovative and safe transport systems	▪ Attractivity of natural conditions ▪ Pollution ▪ Environmental protection ▪ Sustainable resource management	▪ Cultural facilities ▪ Health conditions ▪ Individual safety ▪ Housing quality ▪ Education facilities ▪ Touristic attractivity ▪ Social cohesion

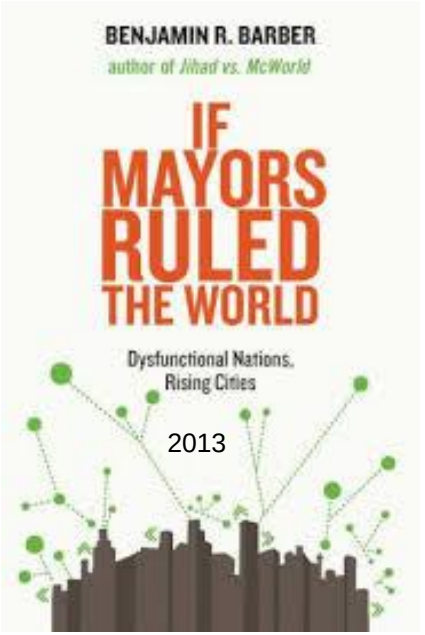
Smart Cities: lots of expectations



Cities are people magnets (1/2)



EU: **70%** already lives in urban areas today



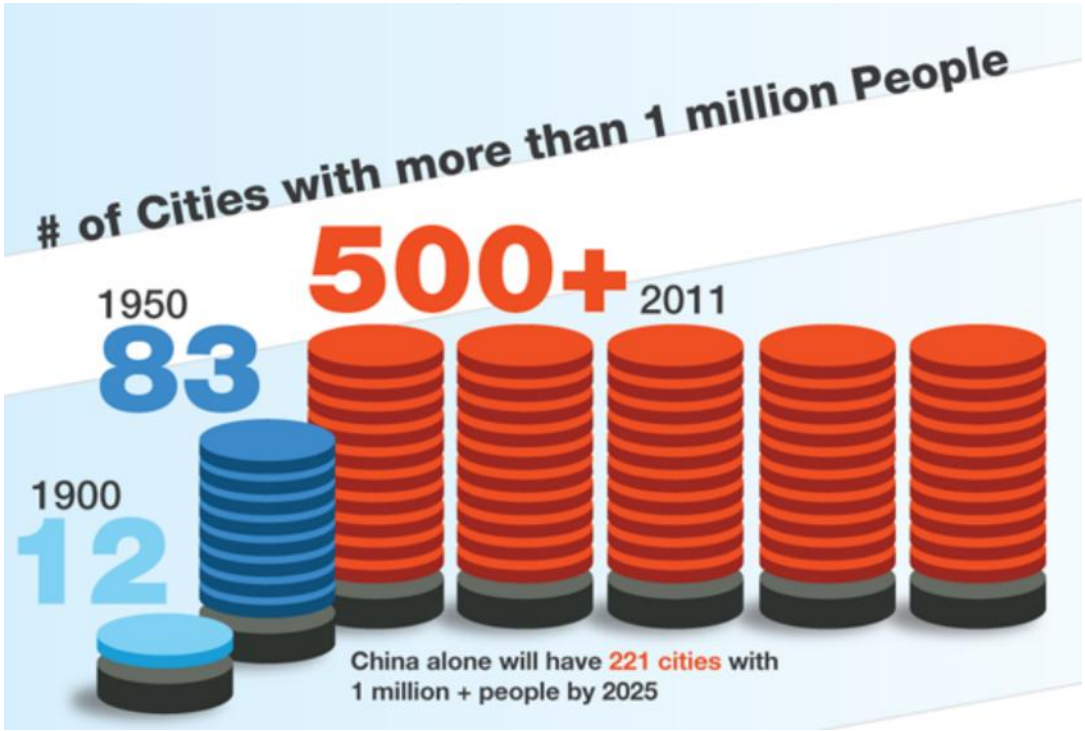
a world Parliament of Mayors?

Source: postscapes.com

Cities are people magnets (2/2)

European cities >1M

London (8M)
Berlin
Madrid
Rome
Paris
Bucharest
Vienna
Hamburg
Budapest
Warsaw
Barcelona
Munich
Milan
Prague
Sofia
Brussels
Birmingham
Cologne (1M)

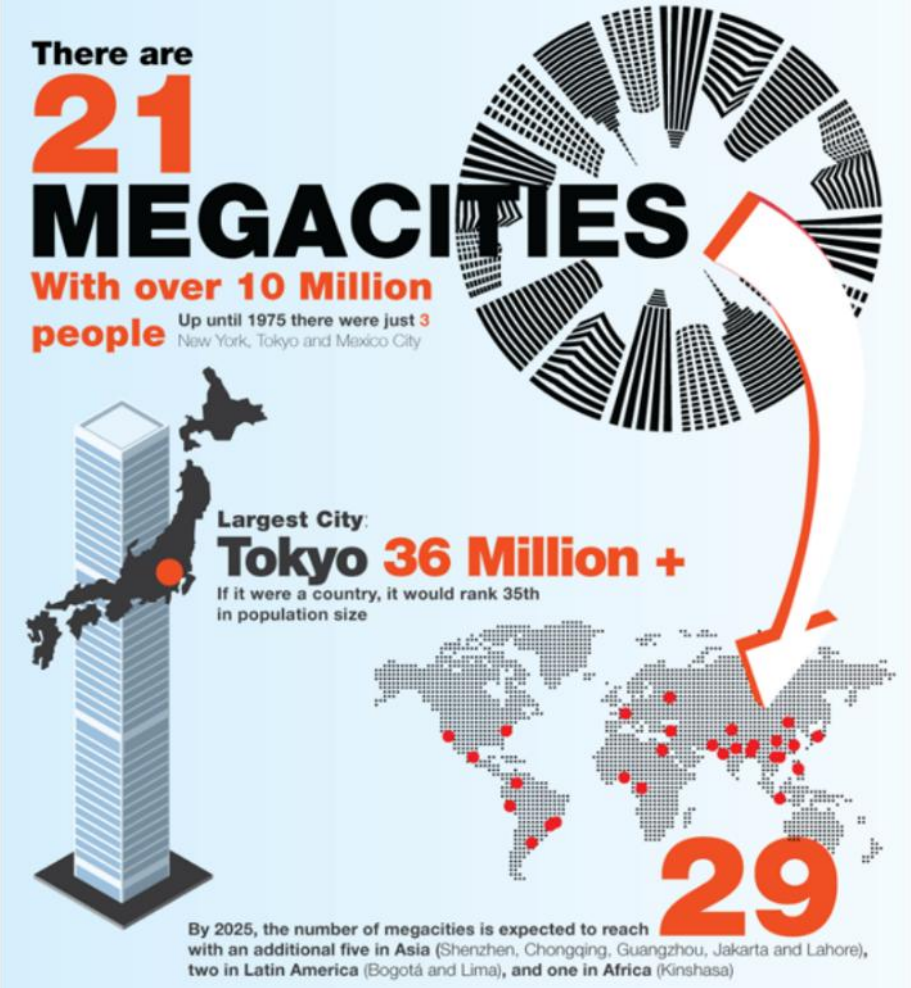


European urban areas >1M

Paris (10M)
London
Ruhr area
Madrid
Milan
Barcelona
Berlin
Rome
Naples
Athens
Lisbon
Rotterdam-The Hague
Manchester
Birmingham
Katowice
Brussels
Hamburg
Cologne-Bonn (2M)

Source: postscapes.com & wikipedia

Cities become megacities

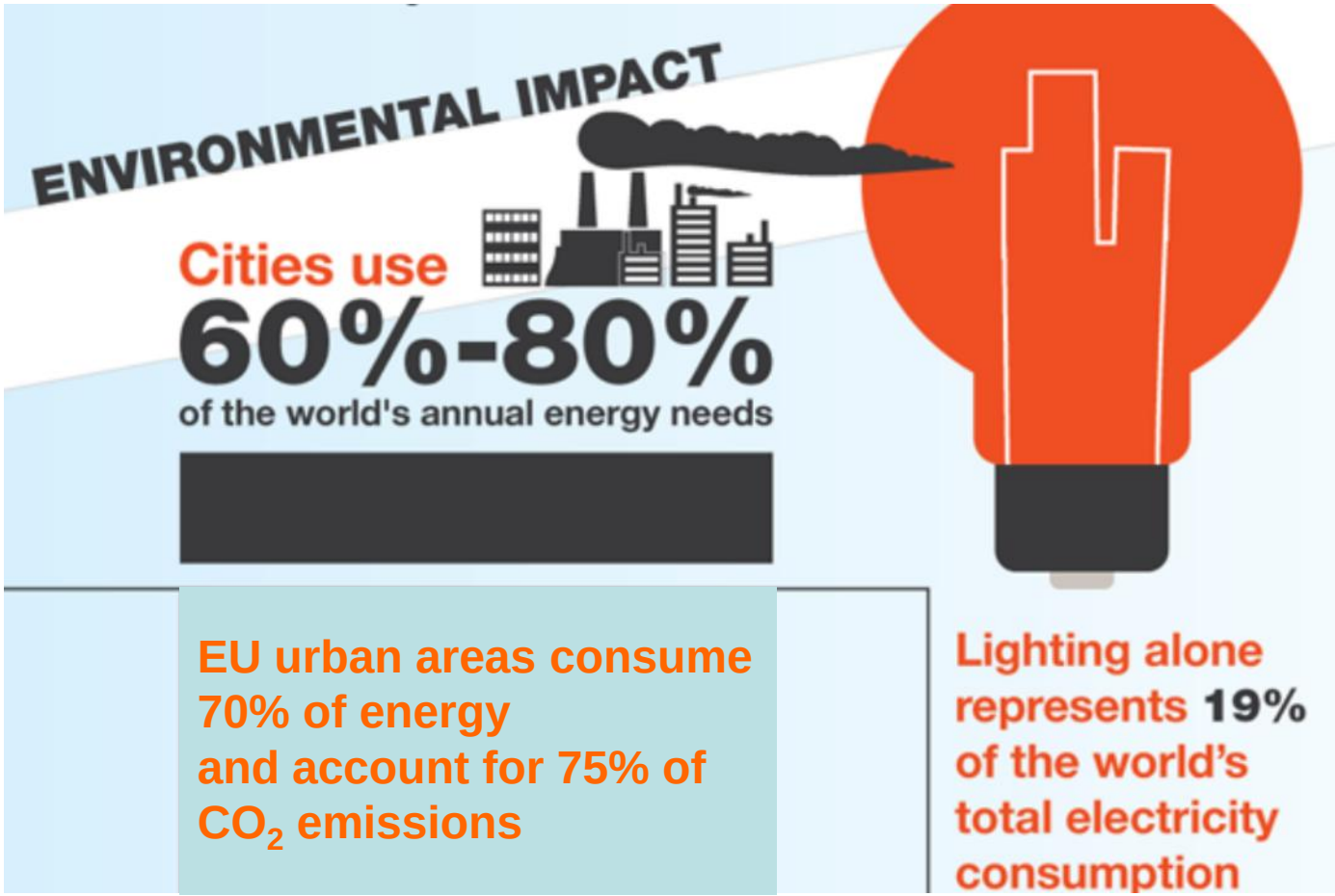


Source: postscapes.com

Top-20 from 30 in Wikipedia (Asia!):

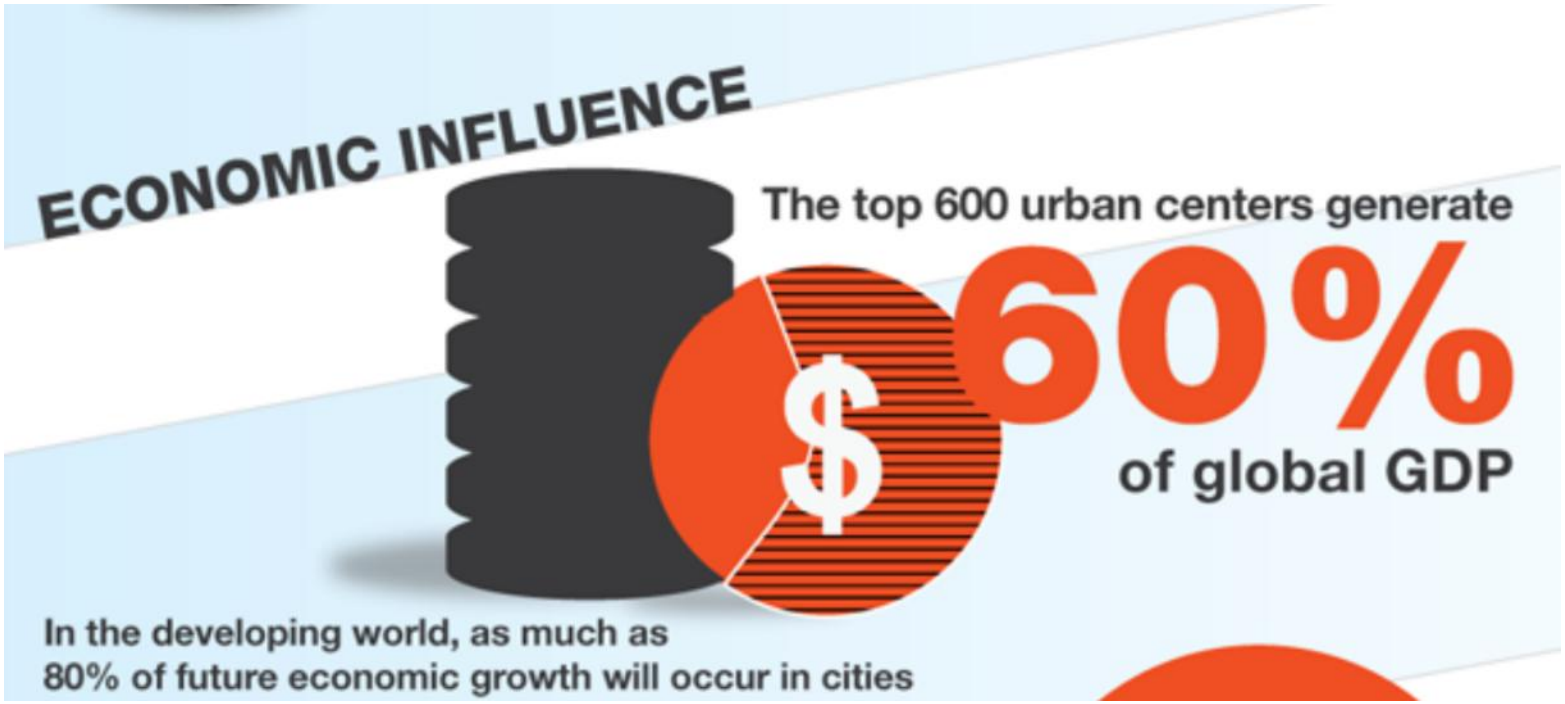
Tokyo, Japan (36M)
Guangzhou, China (32M)
Shanghai, China (29M)
Jakarta, Indonesia (26M)
Seoul, South Korea (26M)
Delhi, India (24M)
Mexico City, Mexico (24M)
New York City, USA (24M)
Karachi, Pakistan (23M)
Manilla, Philippines (22M)
São Paulo, Brazil (21M)
Mumbai, India (21M)
Bejing, China (19M)
Los Angeles, USA (18M)
Osaka, Japan 17M)
Dhaka, Bangladesh (16M)
Cairo, Egypt (16M)
Kolkata, India (16M)
London, UK (15M)
Moscow, Russia (14M)

Cities are greedy monsters



Source: postscapes.com

Cities concentrate wealth.....

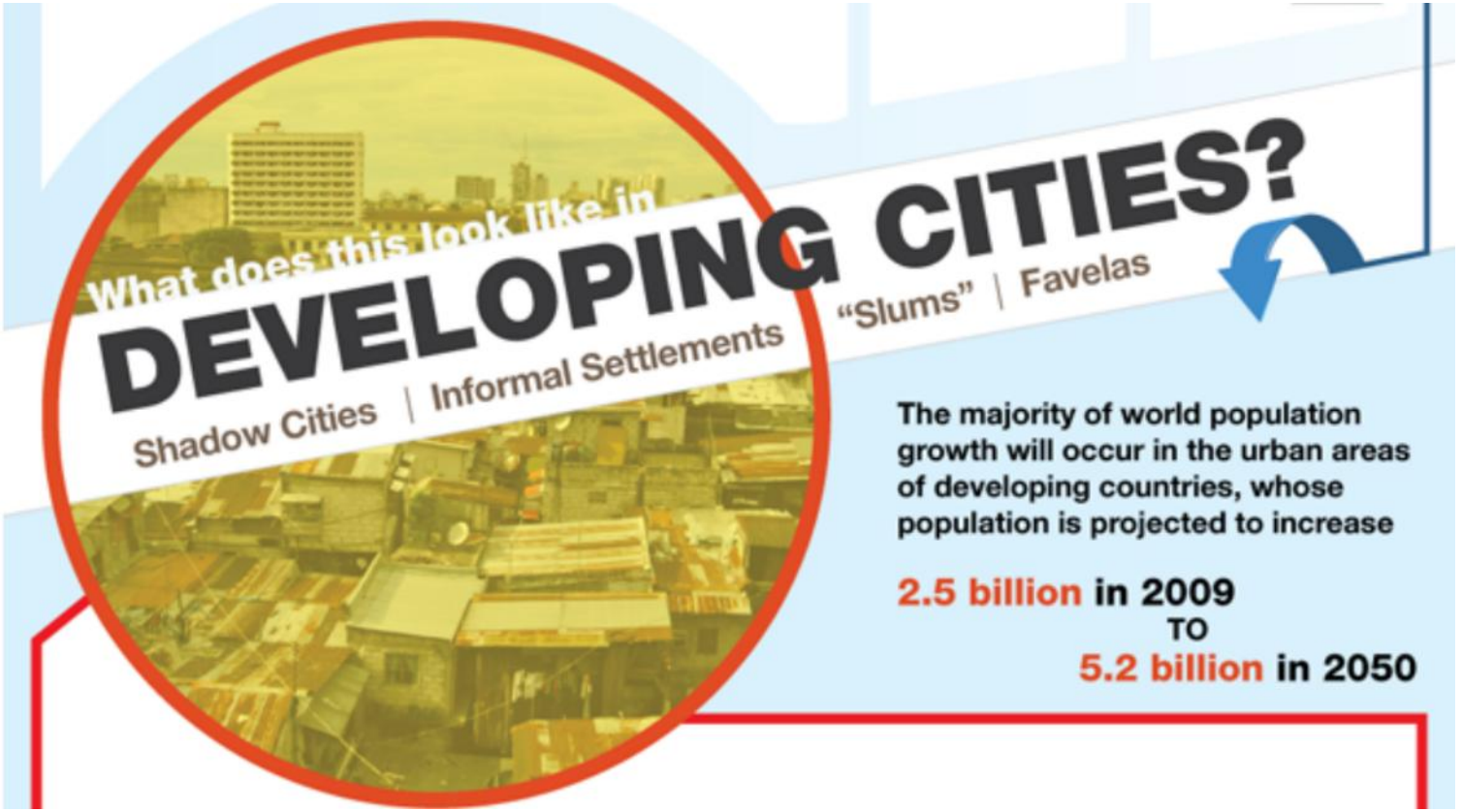


Source: postscapes.com

..... and poverty

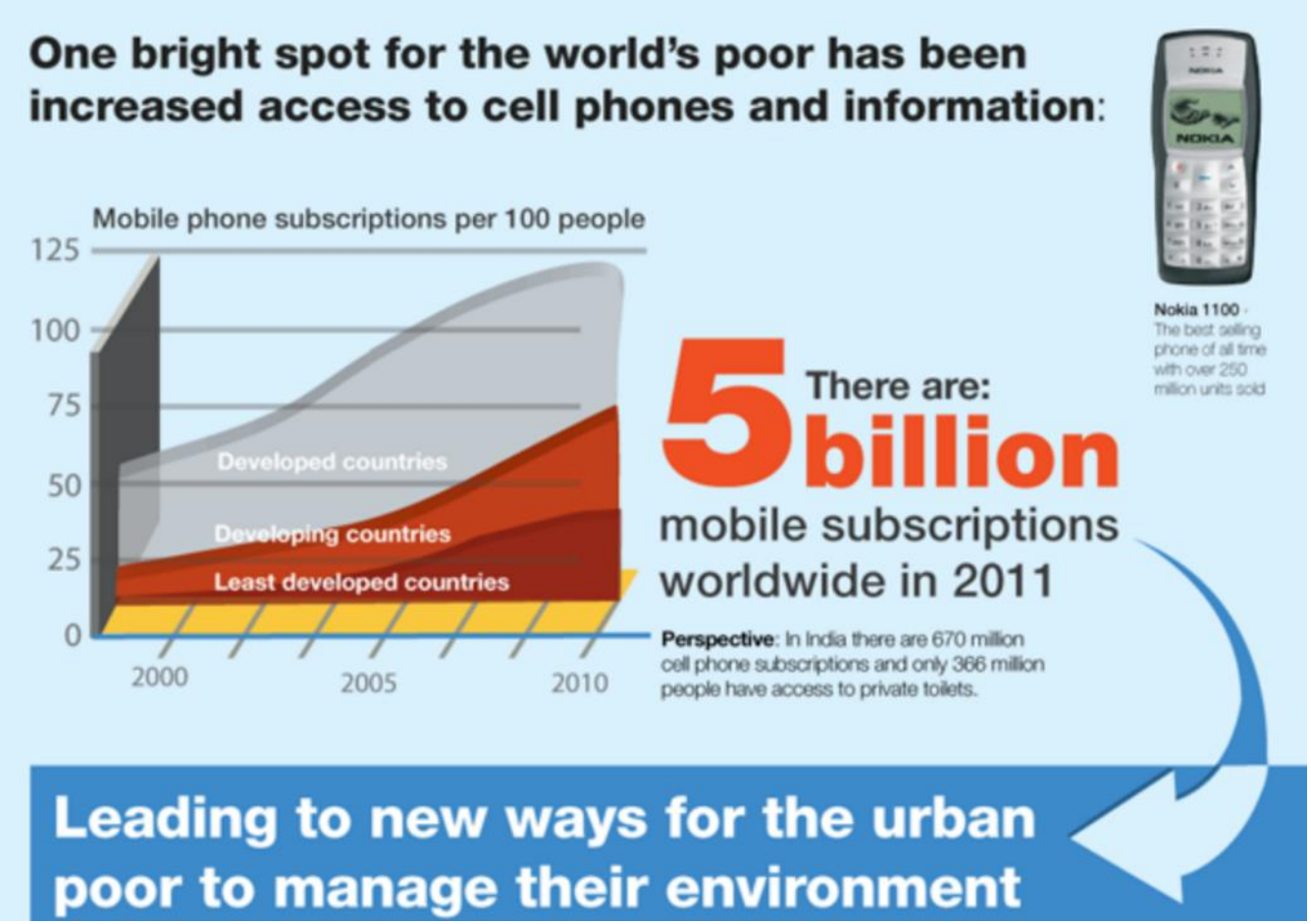
Source: postscapes.com

It’s not just about Smart Developed Cities



Source: postscapes.com

Opportunities for inclusive Smart Cities



Source: postscapes.com

Smart Cities, Big Business

The **global** smart cities market is expected to grow from $654.57 billion in 2014 to $1,266.58 billion by 2019, at an estimated Compound Annual Growth Rate (CAGR) of 14.1% (MarketsandMarkets, May 2014)

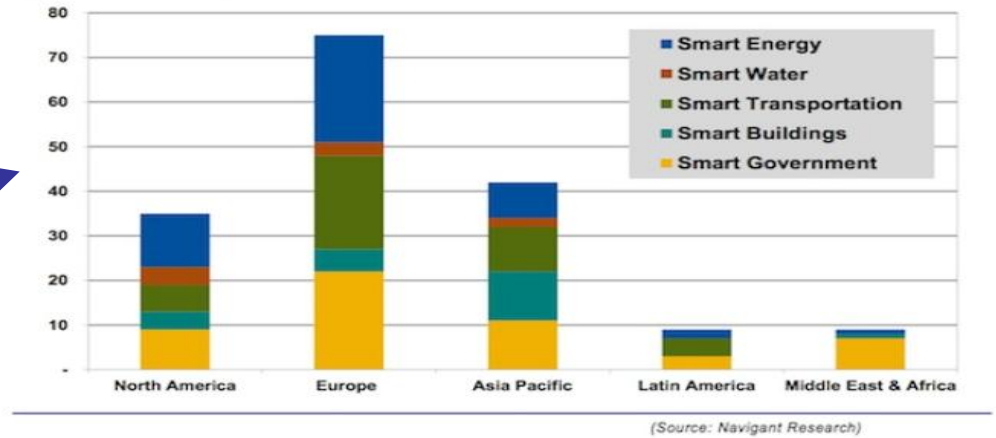
The global smart city **technology** market will grow from $6.1 billion in annual revenue in 2012 to $20.2 billion by 2020, at an estimated Compound Annual Growth Rate (CAGR) of 16.2% (Navigant Research, October 2013)

The Smarter Cities **IT market** opportunity is expected to be $34 billion annually (postscapes.com)

Smart City Market to Grow to $6.1 Billion by 2020

October 15, 2013 by Energy Manager Today Staff

Chart 1.1 Smart City Projects by Region and Primary Industry Sector, World Markets: 3Q 2013



(Source: Navigant Research)

The global smart city technology market will grow from $6.1 billion in annual revenue in 2012 to $20.2 billion by 2020, according to a study by Navigant Research.

That represents a compound annual growth rate of 16.2 percent, according to Smart City Tracker 3Q13.

Smart Cities food for thought

- No vision, no Smart City?
- Smart City: where is the power, where is the money?
- Smart Cities: compete or co-operate?
- Are Smart Cities at all manageable? 

?
- Smart Cities challenges are all about smart resource(s) management: space (housing! mobility! free space!), water, energy, waste, data (IT to the rescue!),...