



# INTEGRATION OF INTELLIGENCE WITH DESIGN



**Graeme Scott**  
ITU Smart Sustainable Cities Forum  
March 2015



# TREND ANALYSIS



a global architecture, planning, engineering and technology firm



currently operating in five continents

69  
global offices



working in 69 offices worldwide

40+  
year history



over 40 years in operation

2,400+  
dedicated people



a staff base of over 2,400 people around the world

100+  
service lines



working across more than 100 service lines

US\$288m  
2013 revenue



2013 revenue = US\$288m



servicing all global markets

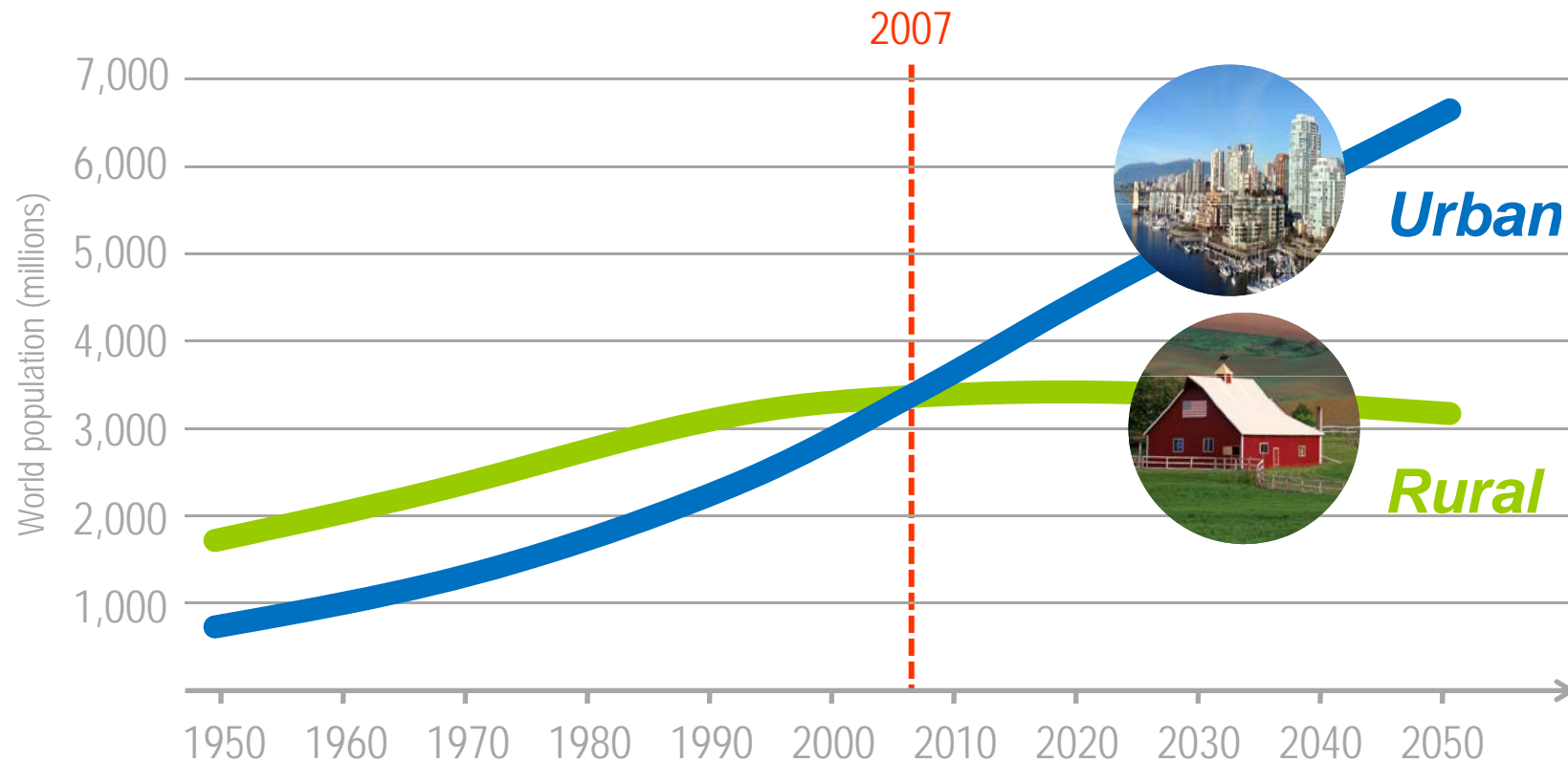
# GLOBAL AND URBAN DEVELOPMENT TRENDS

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## TREND ANALYSIS

**Trend 1:** A majority of the world's population now lives in cities; by 2050, 2/3 of the world population will be urban dwellers:



Source: United Nations World Urbanization Prospects (2014)

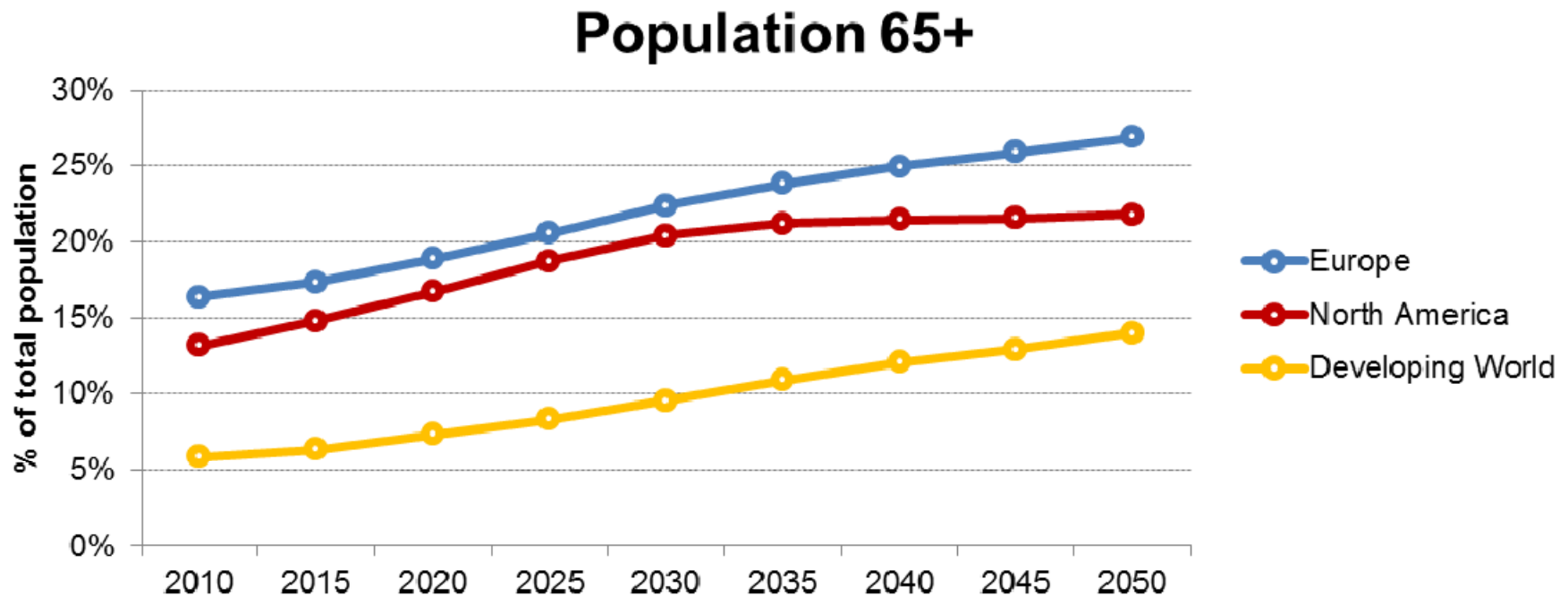
**Takeaway:** The future is in cities, not rural areas.



IBI Group

Integration of Intelligence with Design

**Trend 6:** The population in developed countries will be ageing, bolstering the need for social infrastructure investment.



Source: UN Population Estimates (2014)

**Takeaway:** ‘Ageing in place’ will be highly desirable; plan for places with mixed-use, walkable, and safe environments.

## TREND ANALYSIS

**Trend 9:** 53% of Millennials live in suburbs, but if they could, many would move to urban city / small town neighborhoods.



**Takeaway:** There is latent demand for affordable urban living in mixed-use, walkable downtown and village settings.

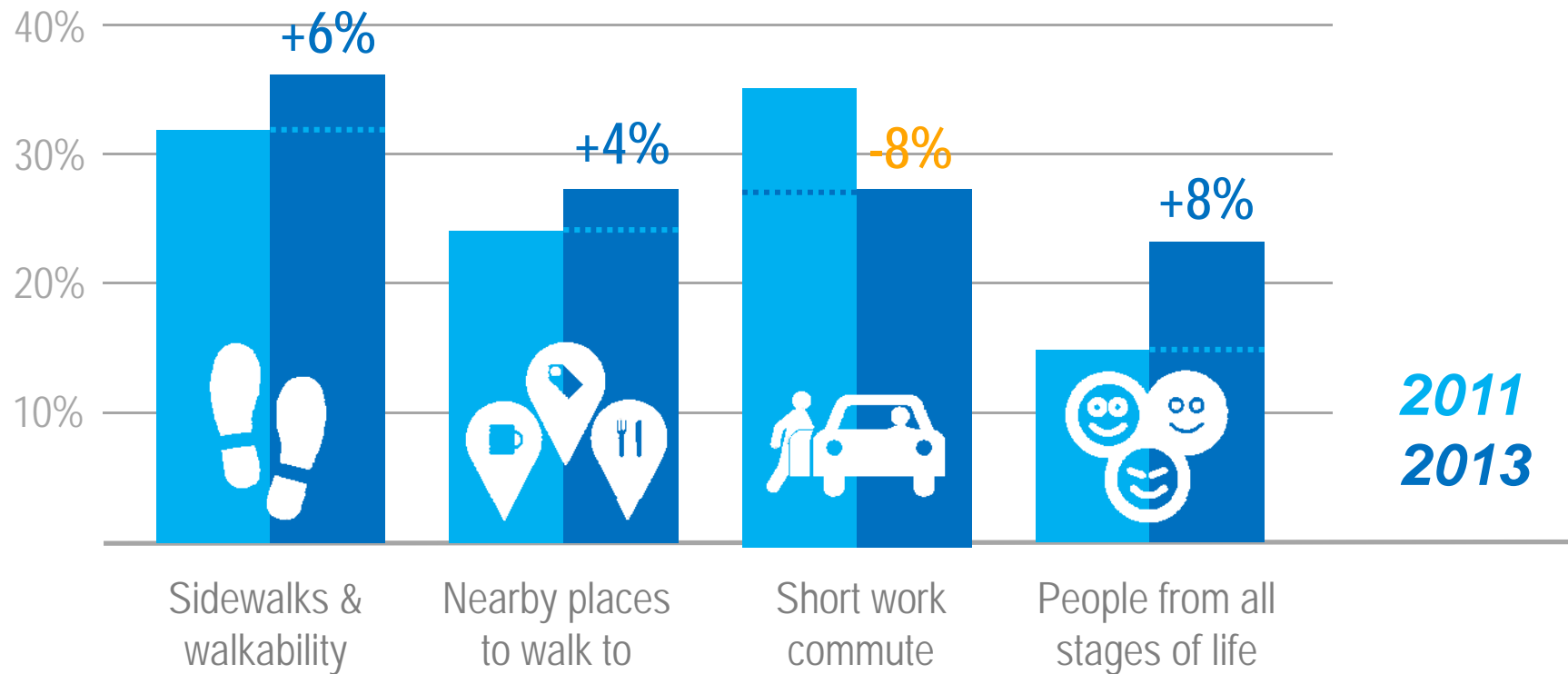
**Trend 12:** Experiential bricks-and-mortar retail is thriving while standard retail is losing to low-cost and online retail:



**Takeaway:** Focus on high-quality retail of products/services that cannot be experienced online *and* that favour walkable, urban places.

## TREND ANALYSIS

**Trend 13:** Walkability and age diversity as a decision criteria of where to live are gaining in importance; commuting is less so:

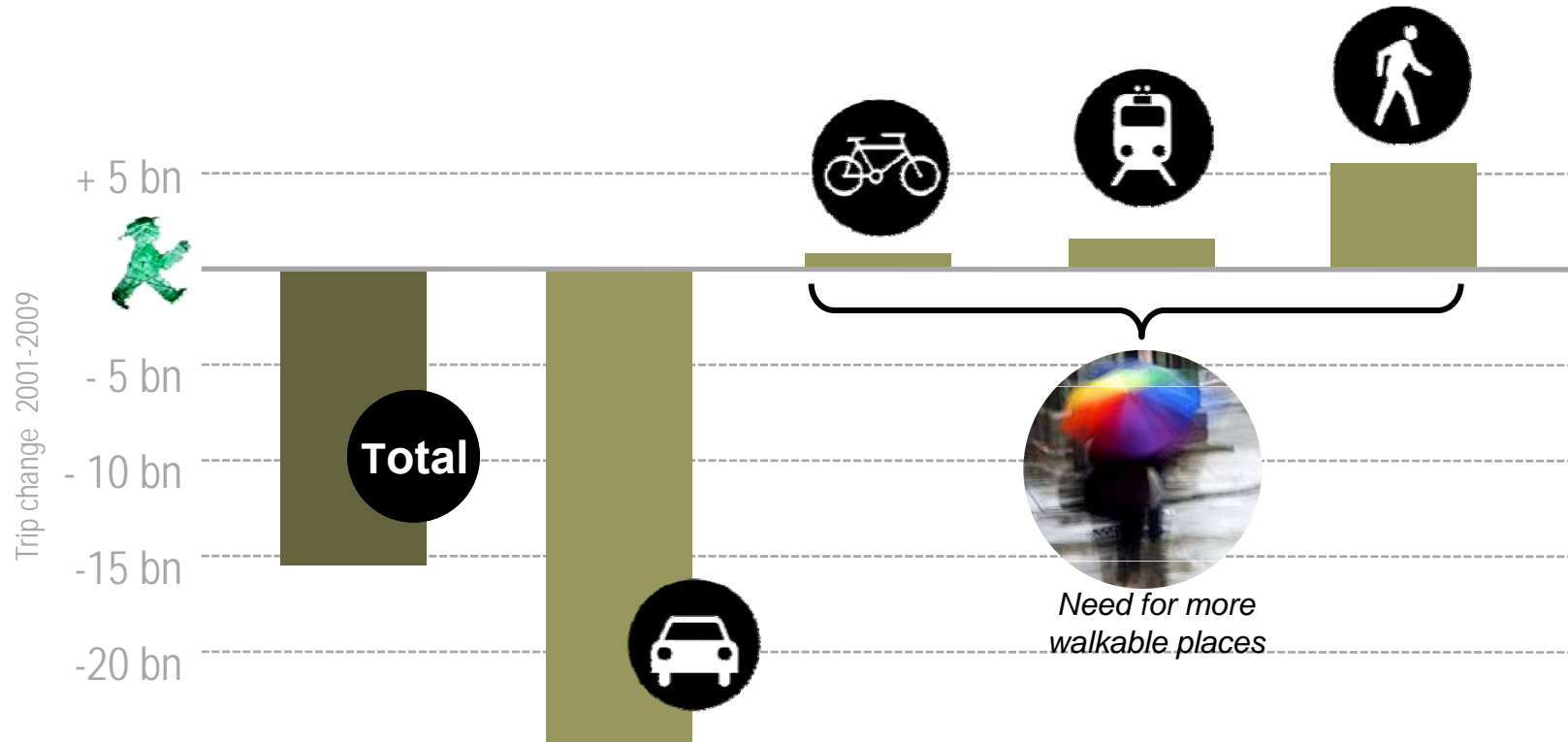


Source: National Association of Realtors (2013)

**Takeaway:** A high-quality pedestrian environment with a vibrant mix of users is a must to attract residents.



**Trend 16:** While car trips have been decreasing in the last decade, non-car trips have been going up:

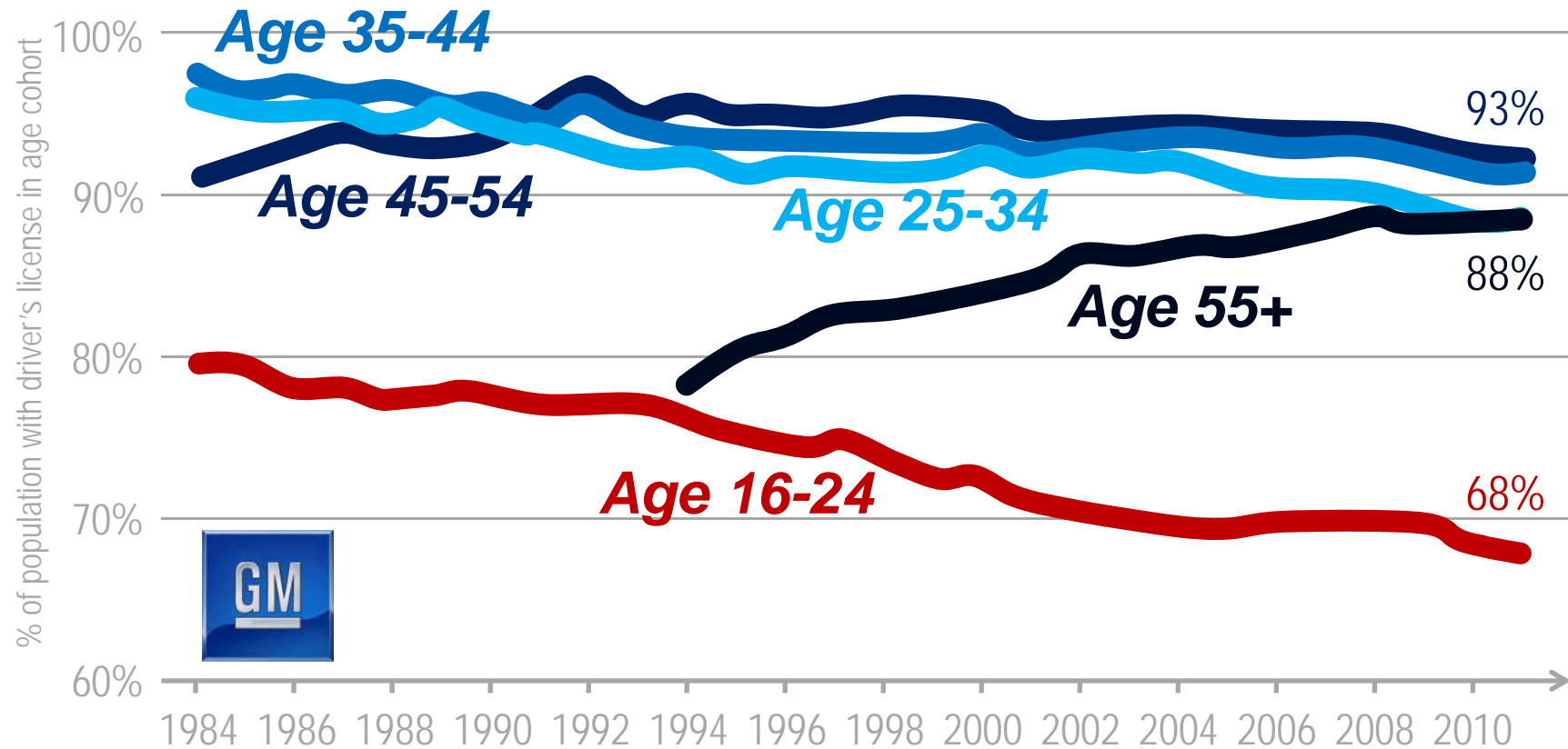


Source: US Census Bureau, National Household Travel Surveys (2001 and 2009)

**Takeaway:** Other modes need to begin sharing the street, too.

## TREND ANALYSIS

### Trend 17: Millennials are not keen on getting a driver's license:

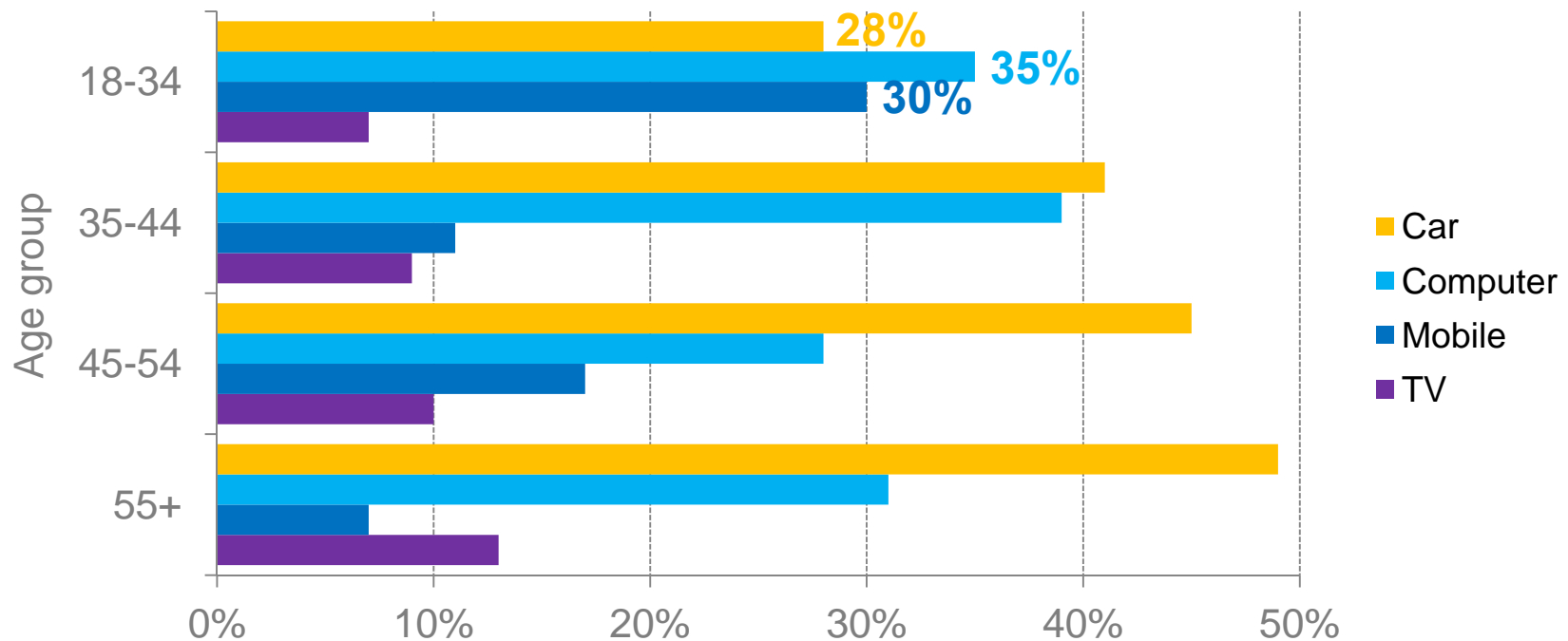


Source: GM (2013)

**Takeaway:** Young people will push the demand for non-car mobility.

**Trend 18:** Being (virtually) connected in real time is becoming more and more important, especially for the young generation:

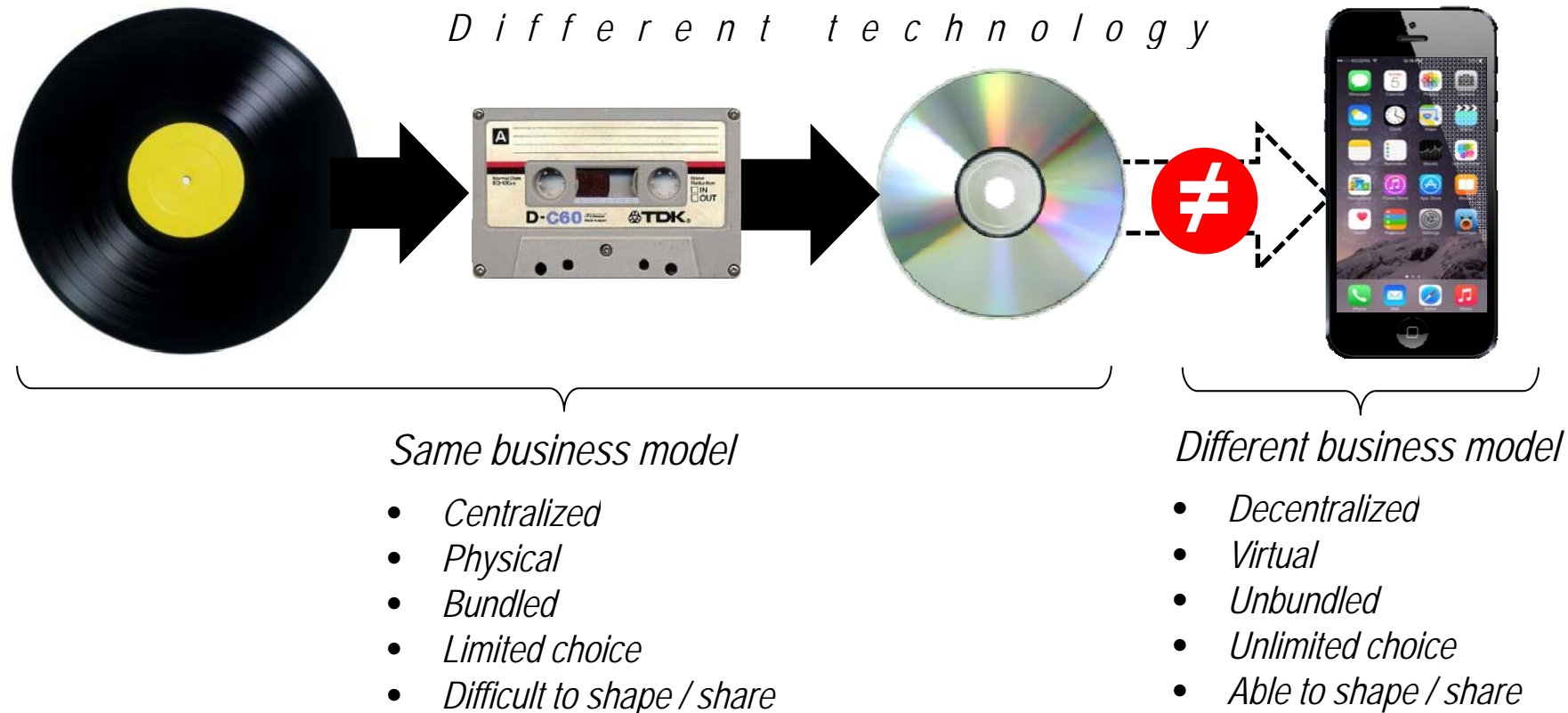
**In your daily routine, losing which piece of technology would have the greatest impact on you?**



Source: Zipcar (2010)

**Takeaway:** Mobile devices will be the driving technology in the future.

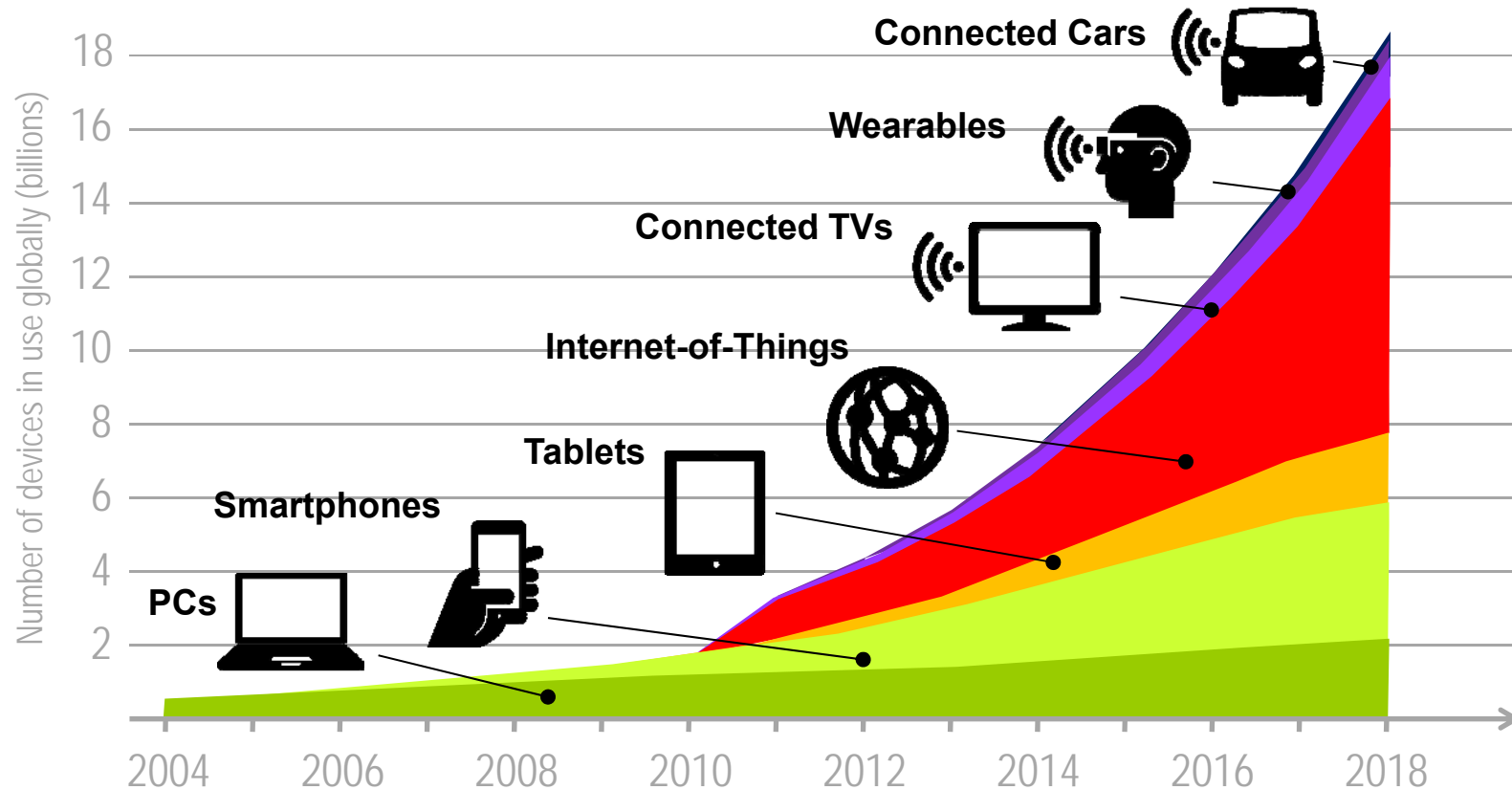
**Trend 20:** New business models are evolving – decentralized, virtual, unbundled, and offering choice and shareability:



**Takeaway:** New business models that offer *convenience* to the user will also disrupt the mobility market.

## TREND ANALYSIS

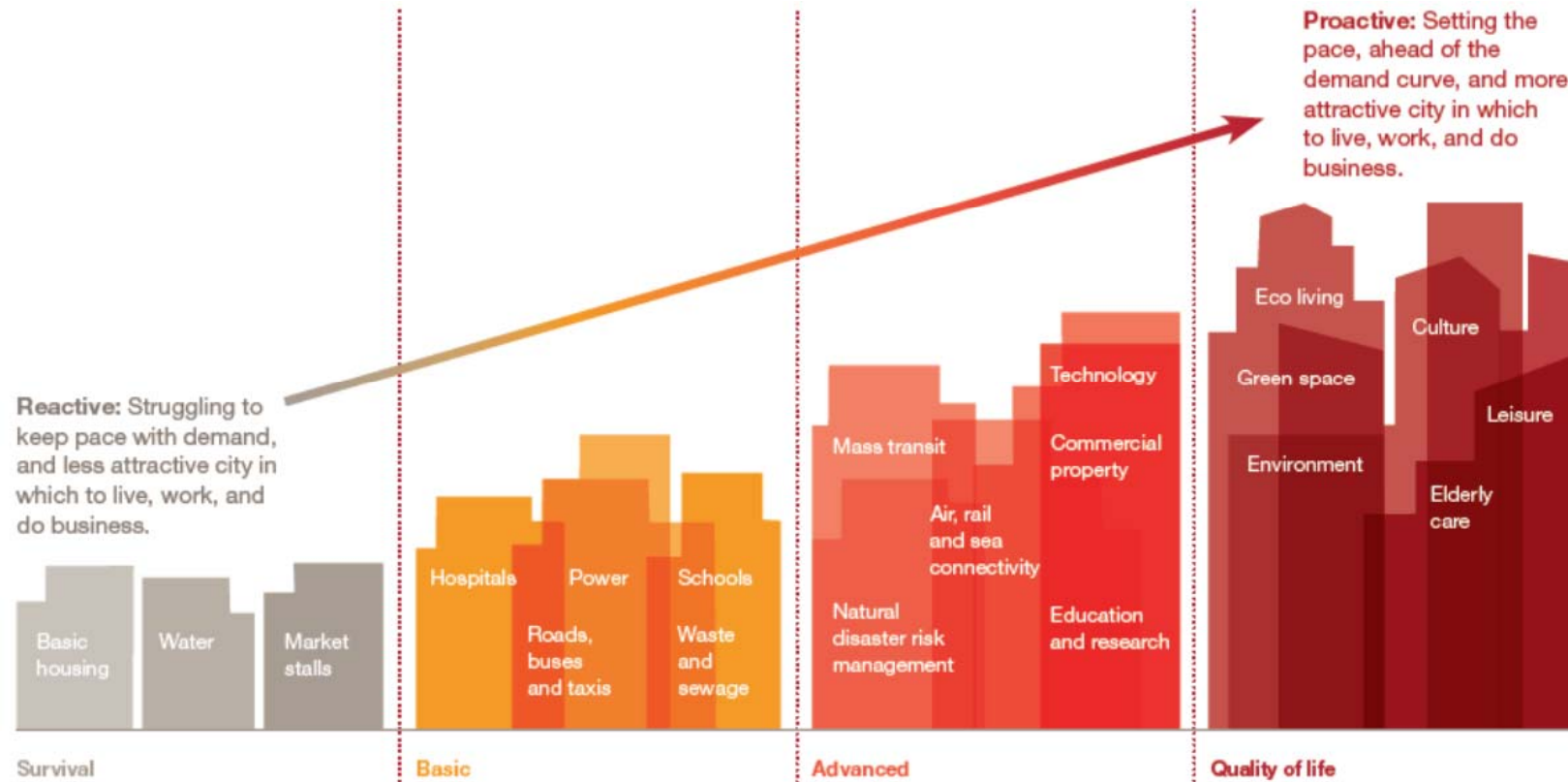
**Trend 24:** The 'Internet of Things' will surpass the Tablet, Smartphone, and PC markets combined by 2017.



Source: BI Intelligence (2014)

**Takeaway:** 'Big data' generated by personal, home, and mobility devices will allow for efficient and customized urban solutions: The 'Smart City.'

## Trend 25: Spending on infrastructure is evolving with economic growth – from basic response to a proactive means



Source: PwC and Oxford Economics (2011)

**Takeaway:** Use infrastructure as a tool for increasing the quality of life of cities, once basic needs are satisfied and slower growth eases demand.



**Demographics**



**+ Economics**



**+ Consumer preferences**



**+ Technology**



**= Efficient and high-quality  
urban living and mobility**

# RETHINKING DESIGN

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# Upside down World Map

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**LEGEND**  
Capital ■ City, Town ●

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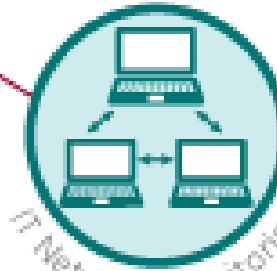
Surveillance Systems



Traffic Monitoring System



CCTV



IT Network Monitoring



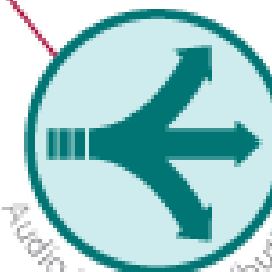
Physical Security Integrated Management



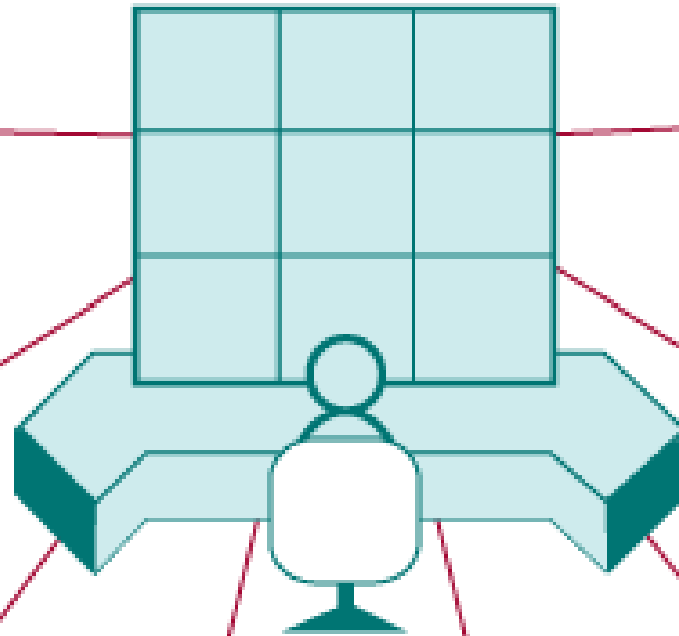
Supervisory Security Control + Data Acquisition

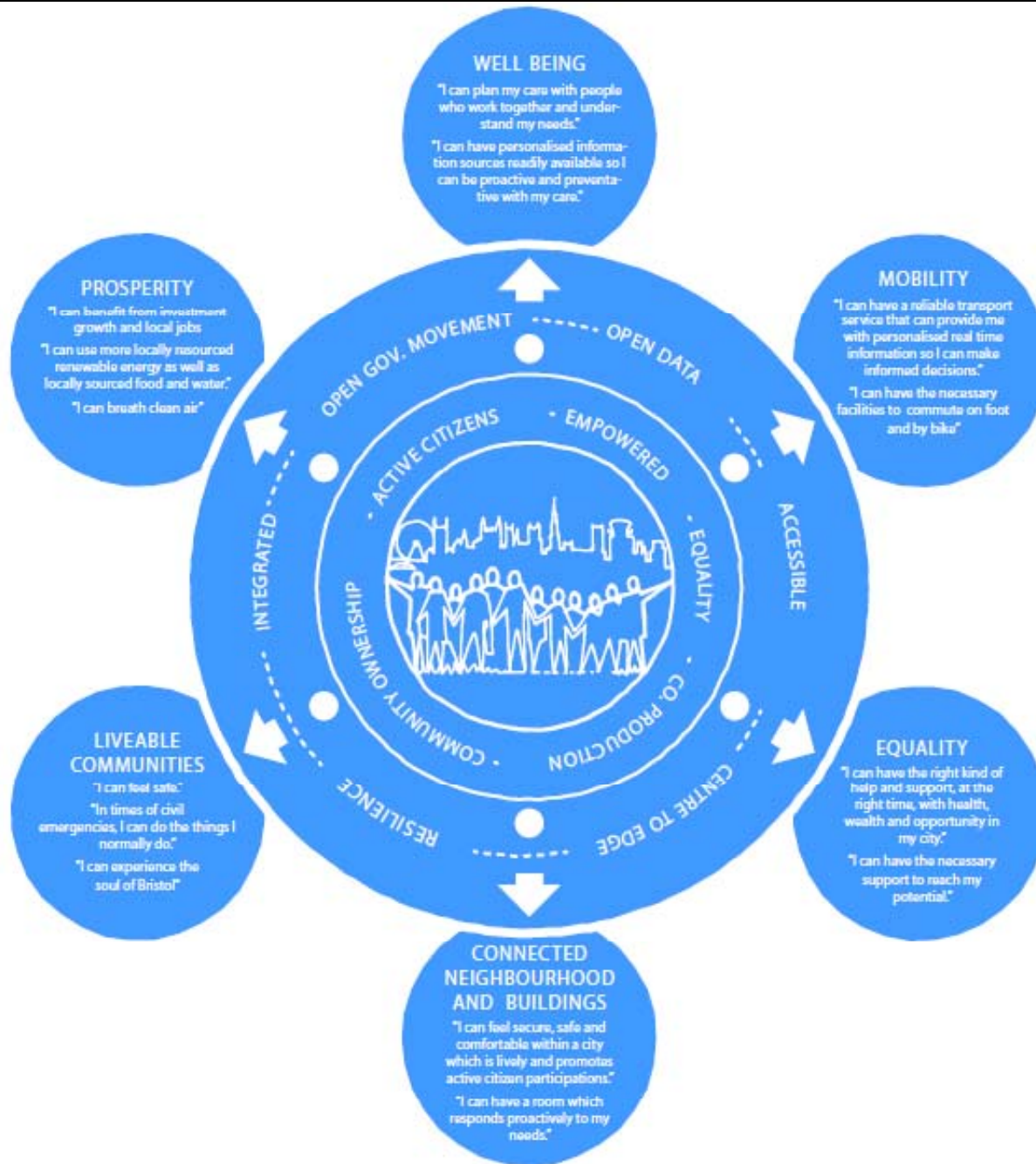


Video Conferencing

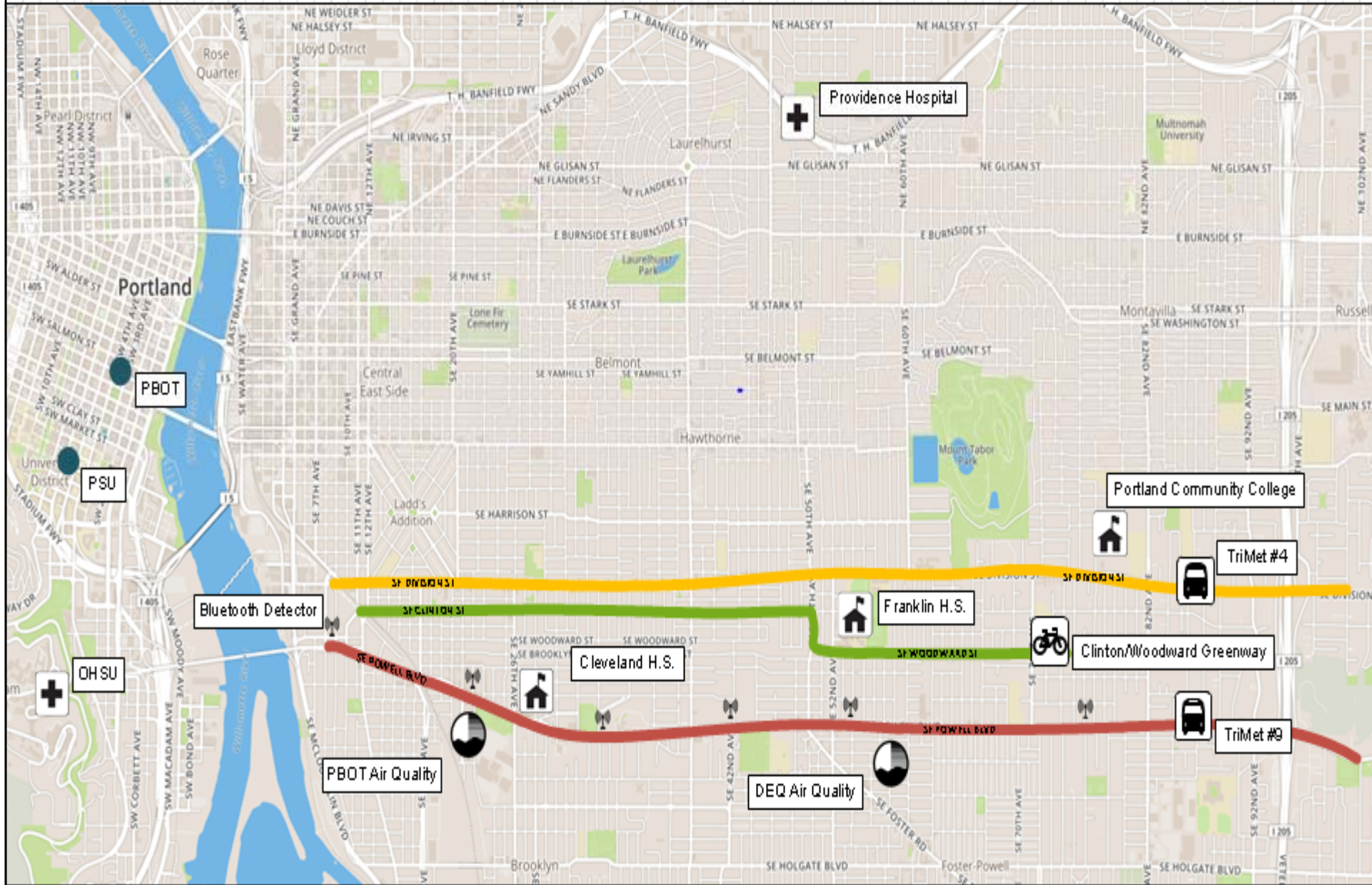


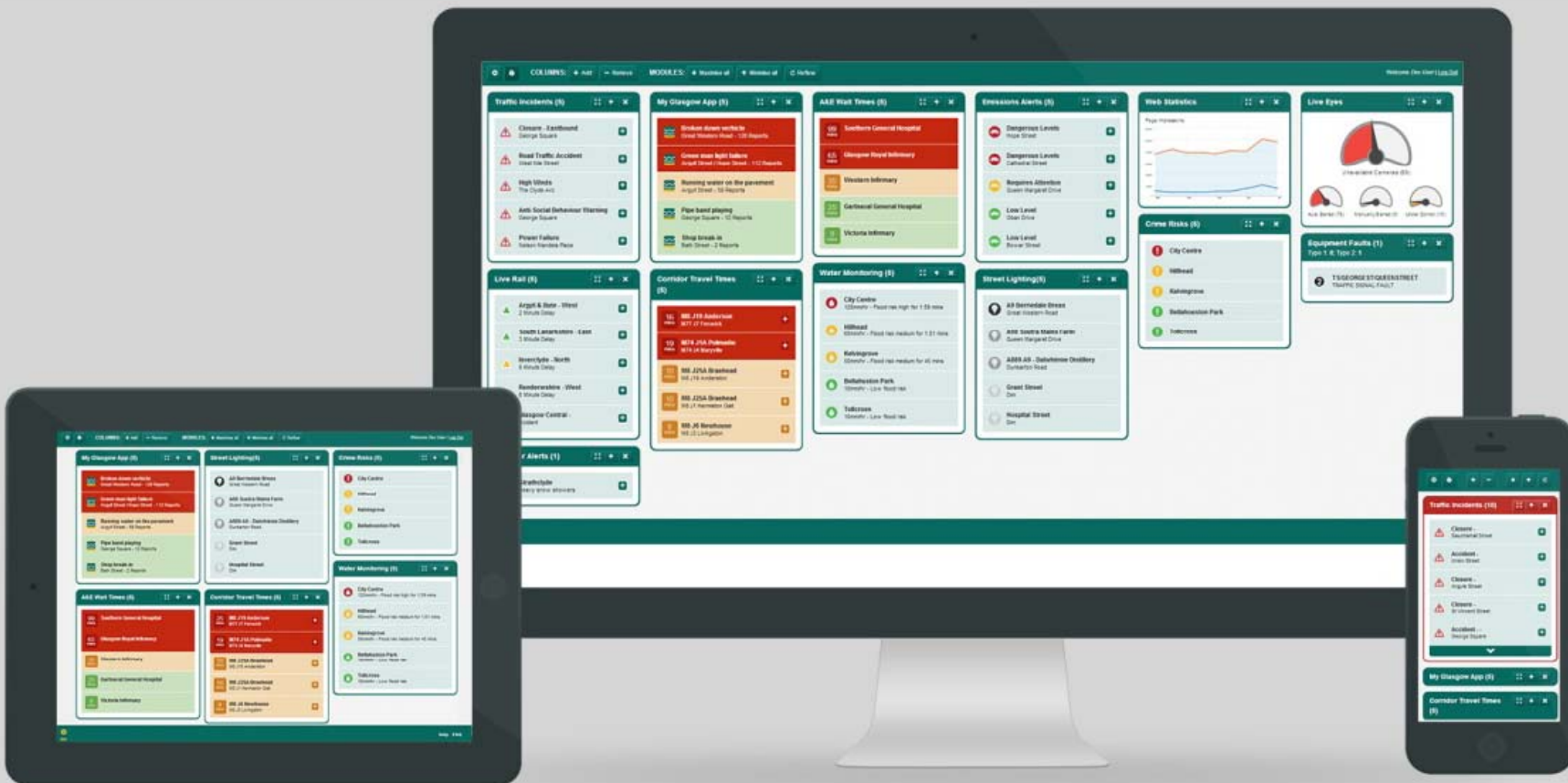
Audio-Video Distribution





# Portland Smart Cities – Powell/Division Corridor





1 September 2013 Last updated at 10:49



## E-book technology trial for West Midlands bus stop





© Highways Agency



# MaaS.fi

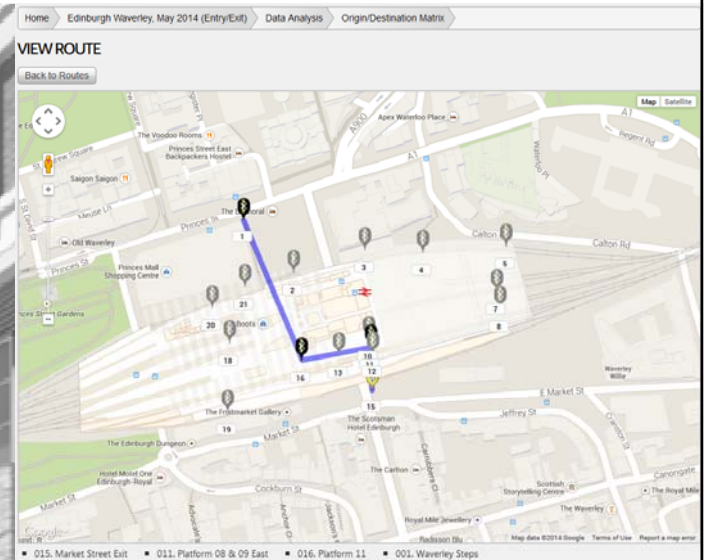
Mobility as a Service

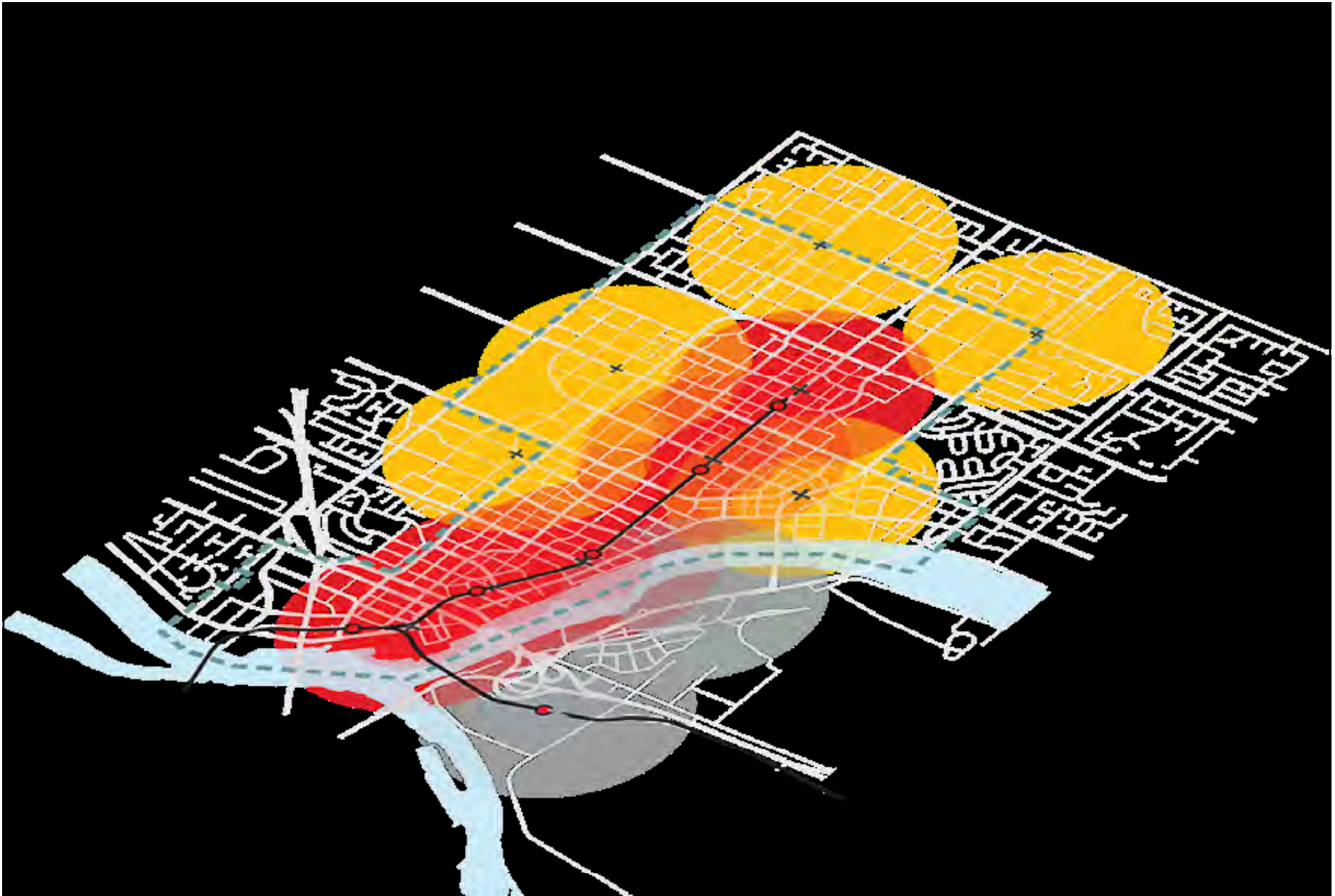
Finland to host the first  
Mobility as a Service ecosystem  
in the World.

**The Helsinki Model** aspires to upgrade the service level of transportation by harnessing the passion and capacities of public and private entities. Collaboration and integration of services aims to create a seamless, demand-based and compelling travel experience for the public.

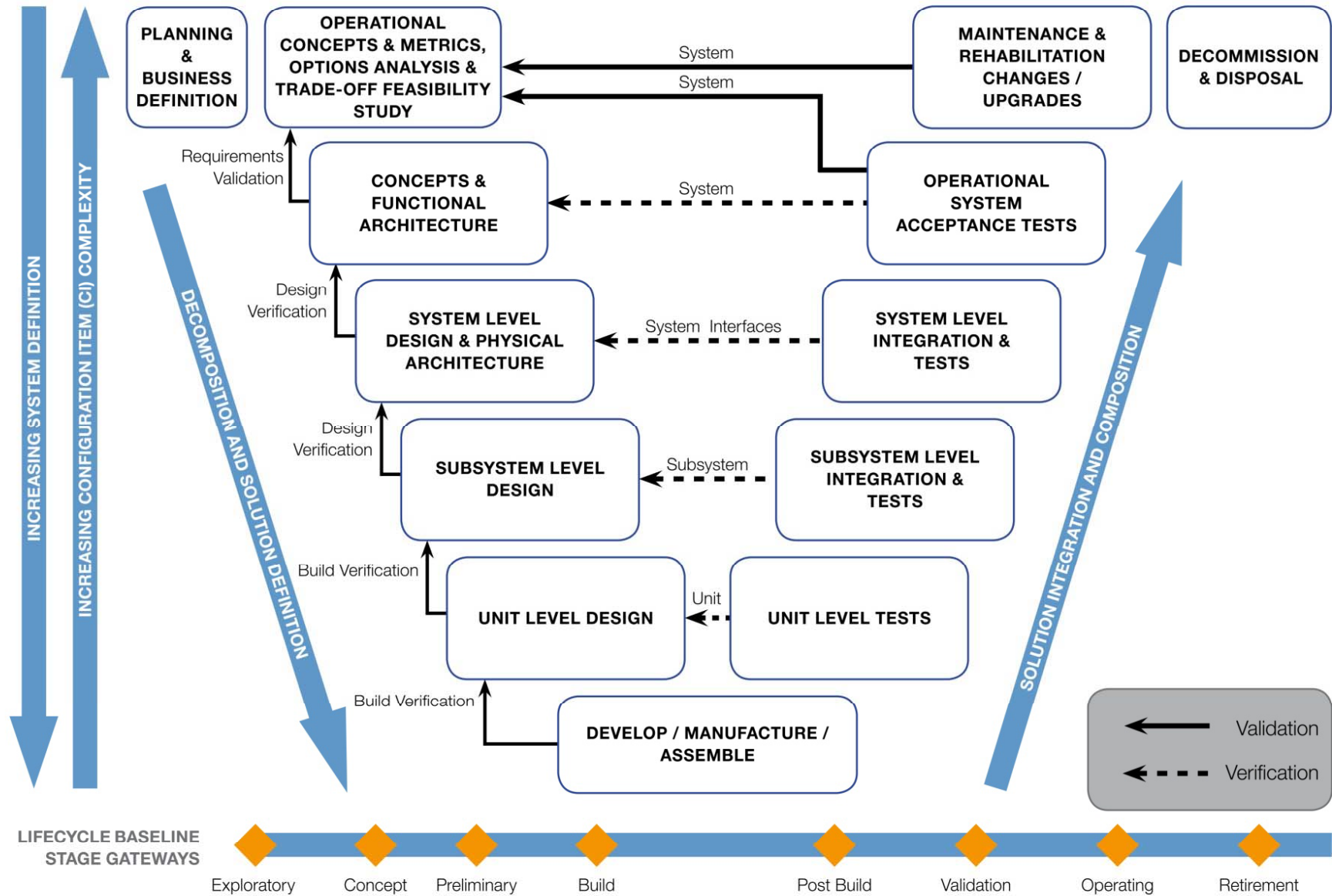








PROJECT LIFECYCLE STAGE	CONCEPT	DEVELOPMENT	PRODUCTION			UTILIZATION	RETIREMENT
PHASE	System Requirements & Concept	Preliminary Design	Critical Design	Develop / Manufacture / Assemble	Inspection & Test	Commissioning	Maintenance & Rehabilitation & Decommissioning & Disposal





# Defining the cities of tomorrow

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