GRUPPO TELECOM ITALIA

FP7 FET Open URBANIXD
2013 – 2014 Project # 323687

Industry Report

Analysis of the Industry landscape around creating digital urban interactions

August 2013

Telecom Italia – Strategy /Future Centre /Trends
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TELECOM ITALIA

Question

"Technology is the answer. But what is the question?"

[Cedric Price, architect]

Technology

"What happens when computing leaves the desktop and spills out into the streets and sidewalks of everyday urban space?"

[Mark Shepard, media architect]

People

"We don't make cities in order to make buildings and infrastructure but to come together, create wealth, culture, more people."

[Dan Hill, CEO]

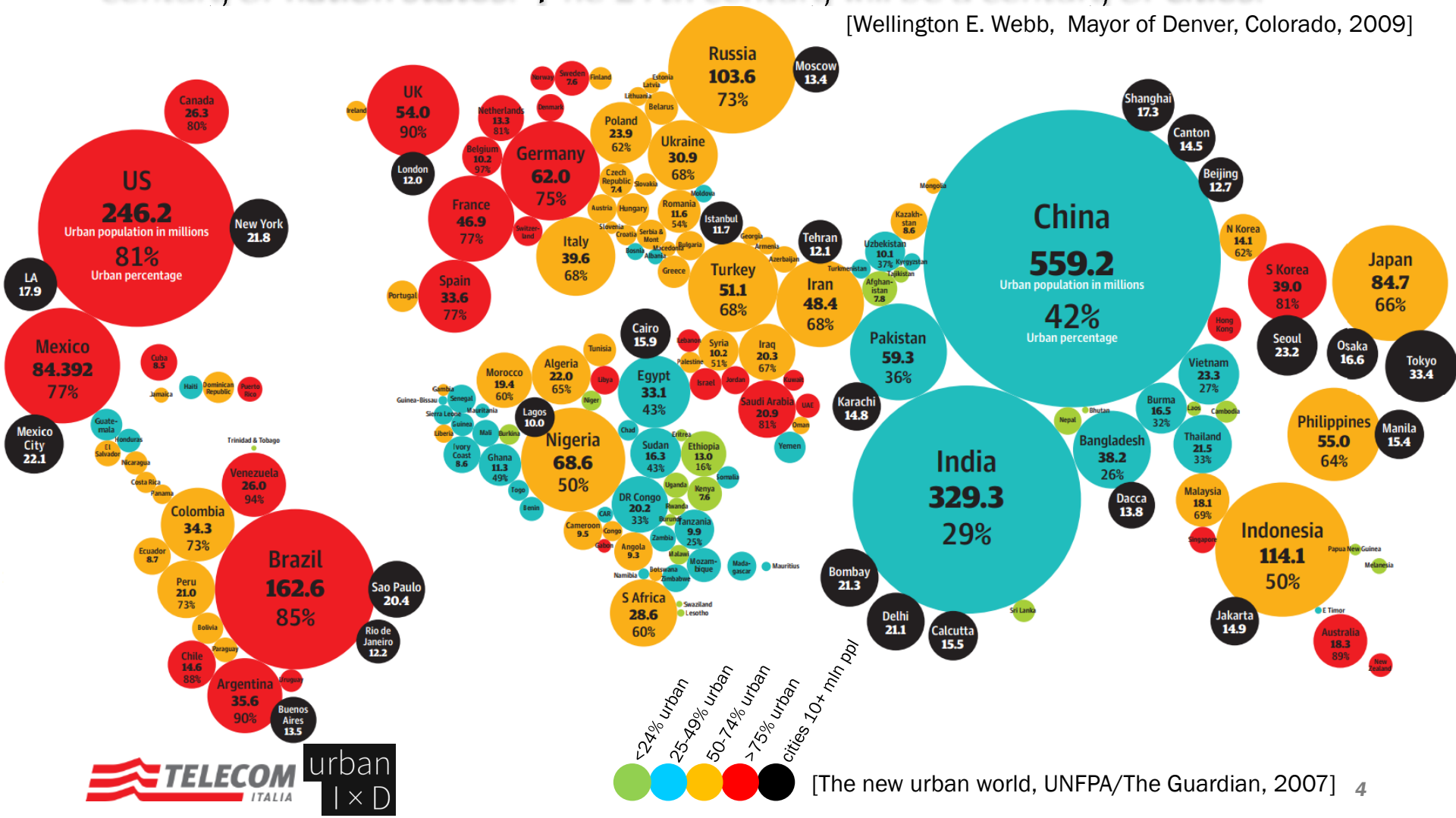
UrbanIxD Industry Report

- About Smart Cities
- Applying Interaction Design to this market
- Who is in the market
- Technological framework and challenges
- (Inspirational) Questions

The new urban world

The 19th century was a century of **empires**, the 20th century was a century of **nation states**. The 21th century will be a century of **cities**.

[Wellington E. Webb, Mayor of Denver, Colorado, 2009]



[The new urban world, UNFPA/The Guardian, 2007]

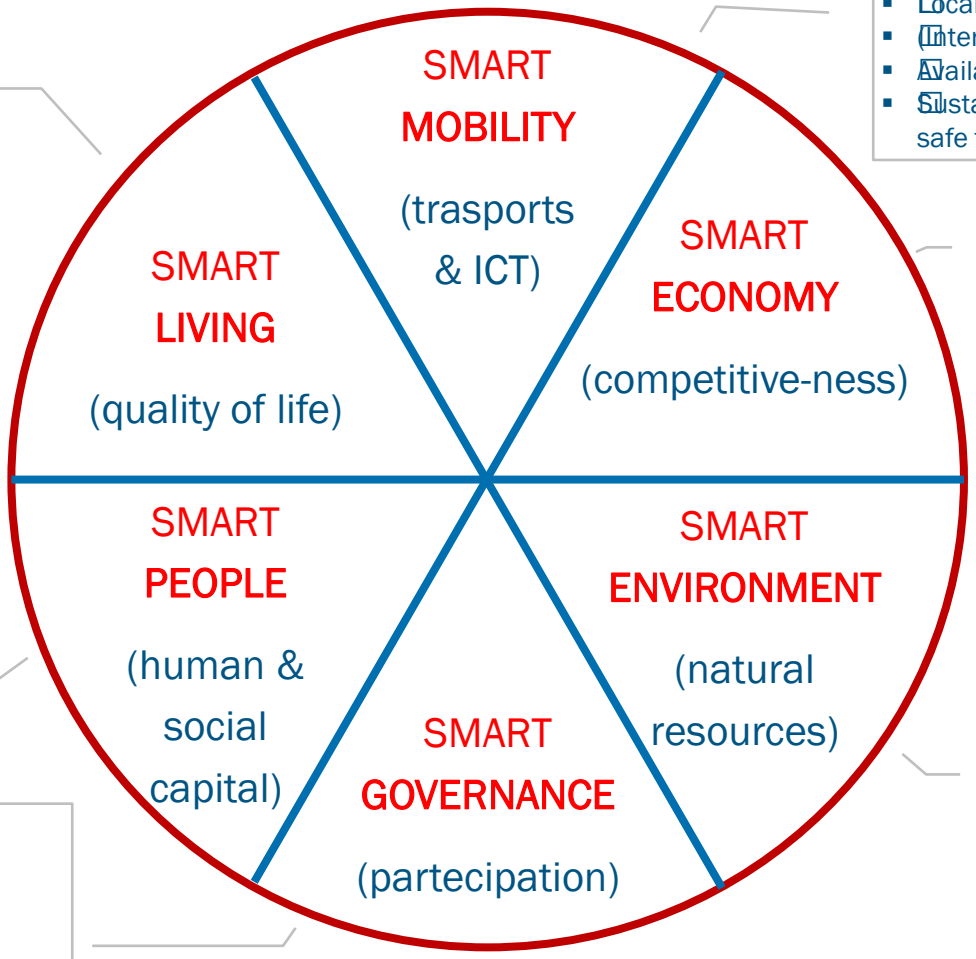
Smart Cities impact on several human activities

Defining a Smart City

We believe a **city** to be **smart**
when investments
in **human** and **social capital**
and traditional (transport) and modern (ICT)
communication infrastructure
fuel **sustainable** economic growth
and a **high quality of life,**
with a wise management of **natural resources**, through
participatory governance

[Andrea Caragliu et al., 2009]

Smart City characteristics



- Local accessibility
- (Inter-)national accessibility
- Availability of ICT-infrastructure
- Sustainable, innovative & safe transport systems

- Innovative spirit
- Entrepreneurship
- Economic image & trademarks
- Productivity
- Flexibility of labour market
- International embeddedness
- Ability to transform

- Attractivity of natural conditions
- Pollution
- Environmental protection
- Sustainable resource management

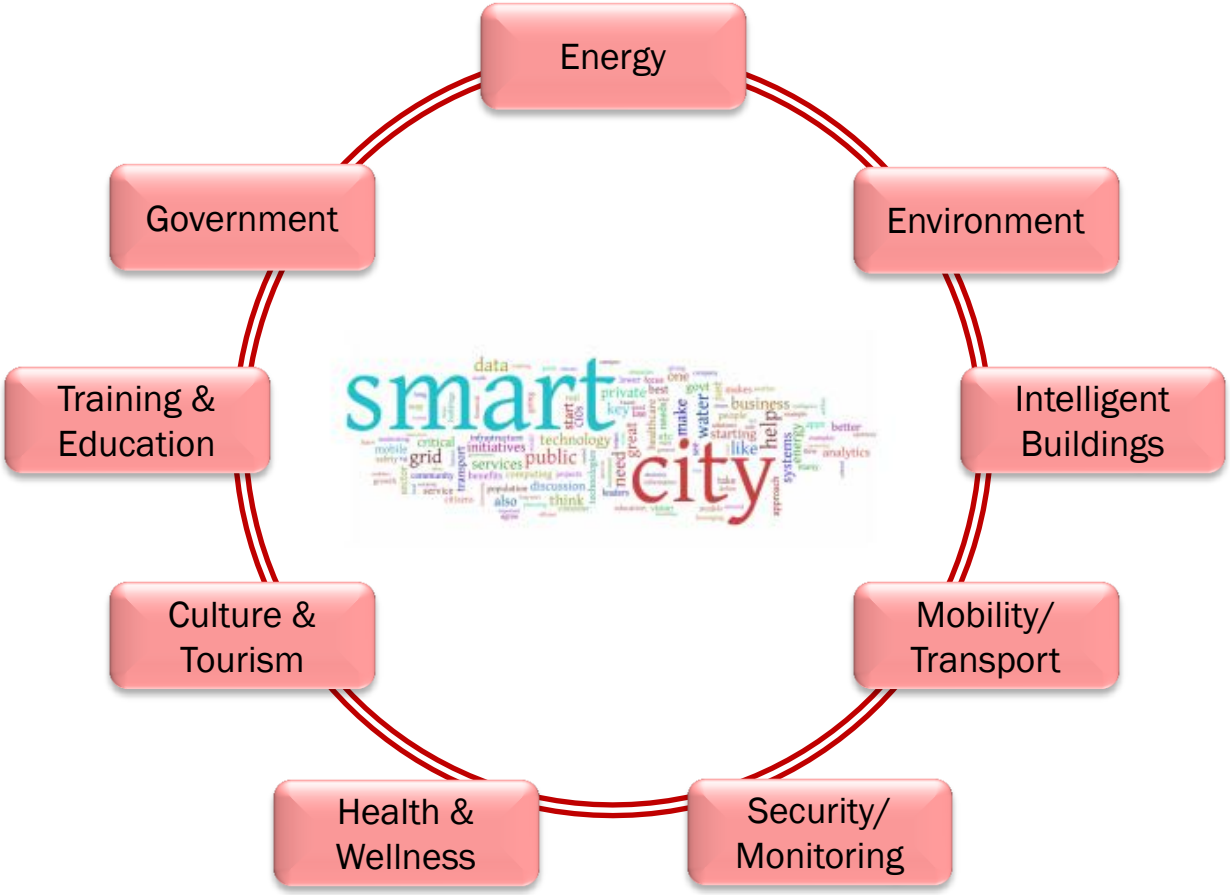
- Participation in decision-making
- Public and social services
- Transparent governance
- Political strategies & perspectives

- Level of qualification
- Affinity to life long learning
- Social and ethnic plurality
- Flexibility
- Creativity
- Cosmopolitanism/ Open-minded-ness
- Participation in public life

- Cultural facilities
- Health conditions
- Individual safety
- Housing quality
- Education facilities
- Touristic attractivity
- Social cohesion

[Smart cities. Ranking of European medium-sized cities. TU Wien, Lubian University, TU Delft, 2007]

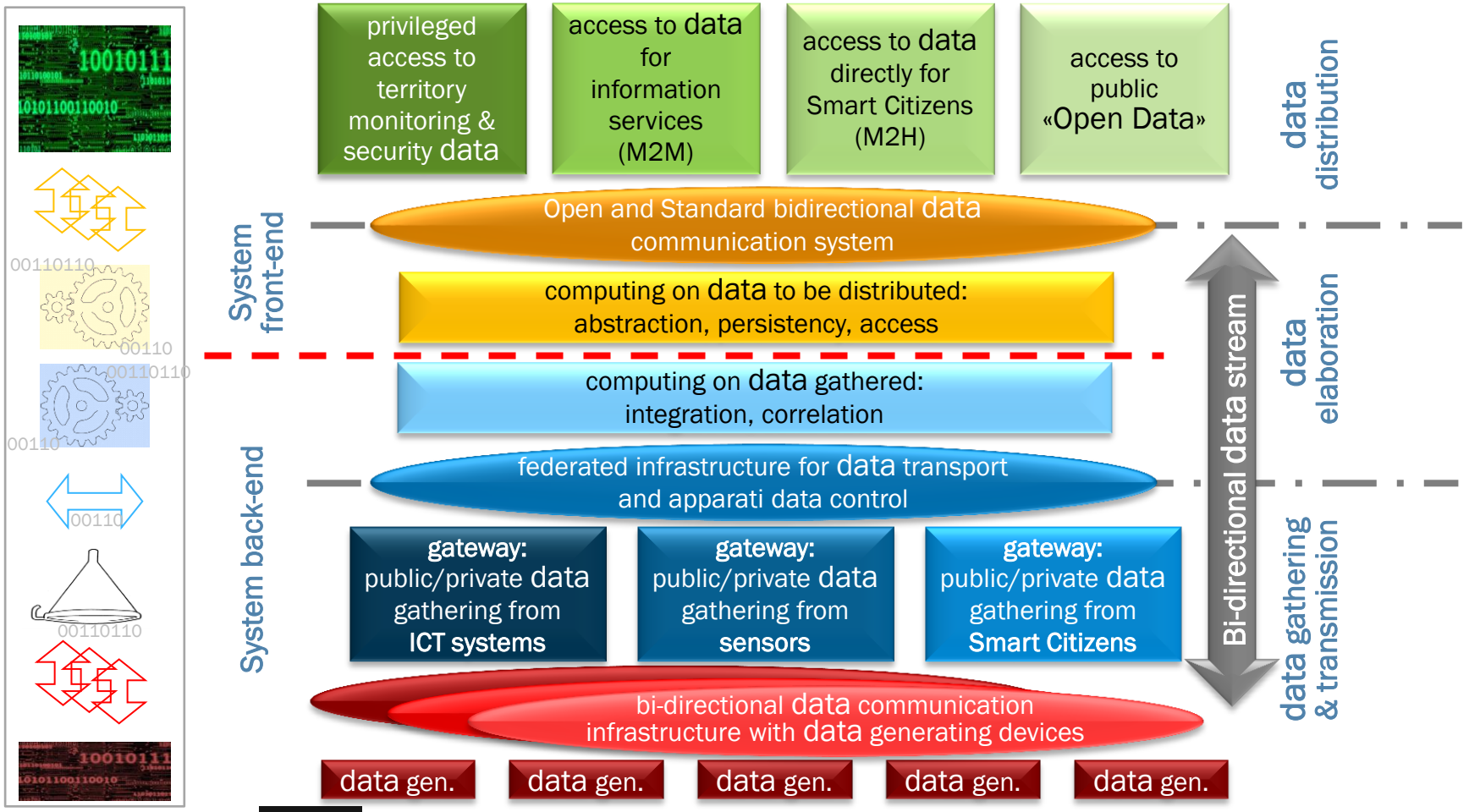
Application areas addressed in a Smart City



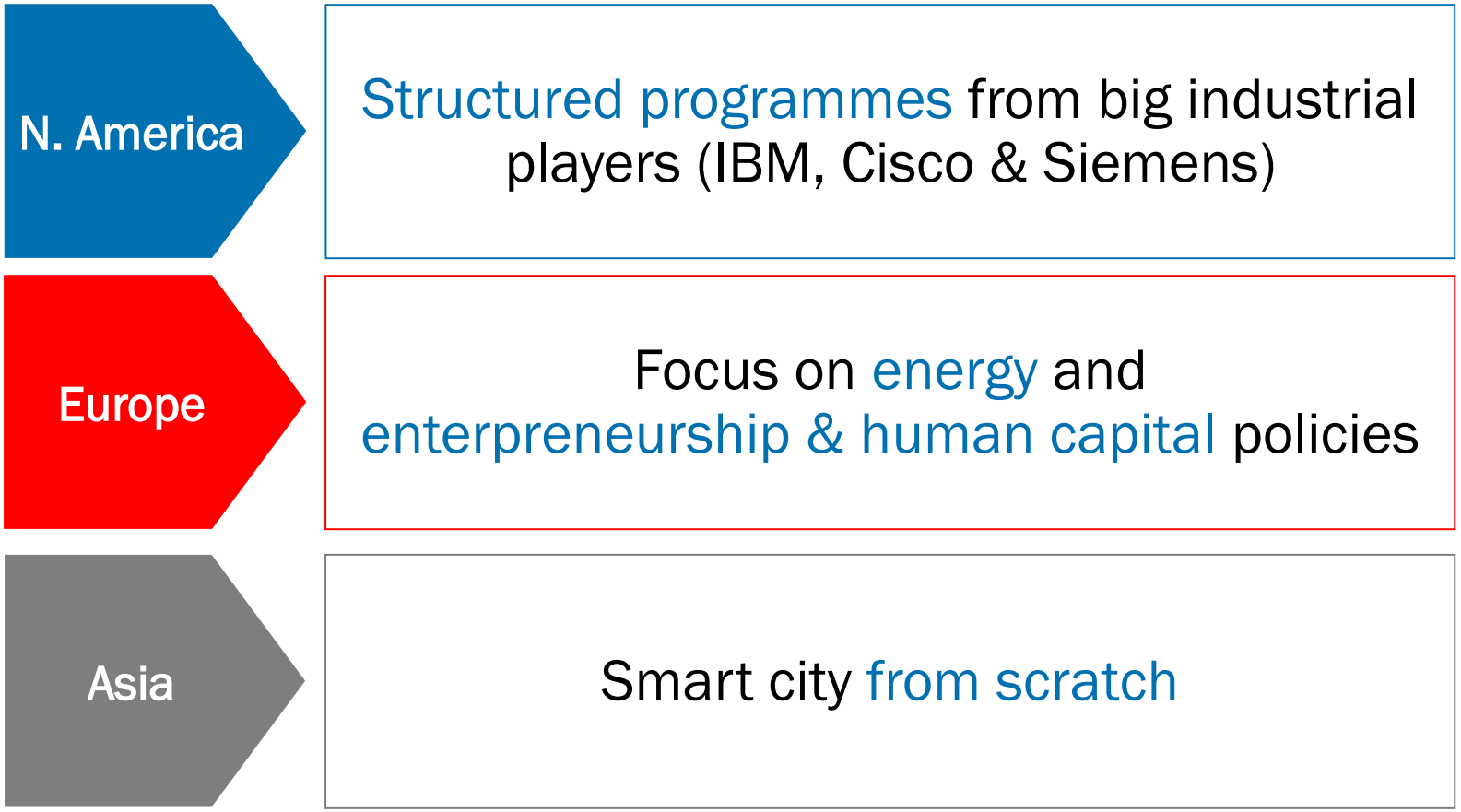
Programme for Digital Services set by the Italian Government [Agenzia per l'Italia Digitale]

A Smart City architectural model: all(most) about data

This model was published by the Agenzia per l'Italia Digitale in 2012 as a recommendation to the public administration



Global trends for Smart Cities



Smart Cities are one of the biggest worldwide market

- There are more than 557,000 local governments around the world, and they spend about $4500 bln each year to deliver important services to their citizens.

[CityMart.com blog, 24 Nov 2012]

- Market technologies and services needed to make Cities «smart» are ranging from $ 8 bln in 2010 to $ 39 bln in 2016, with a cumulate expense in '12-'16 of $ 116 bln
- In 2011 there were 102 smart city projects worldwide: Europe 38, North America 35, Asia Pacific 21, the Middle East and Africa 6, Latin America 2.
- "Smart city concepts are really taking off globally.
  - currently, the largest spending on smart city technologies is for smart grids;
  - however, over the next five years we will see a significant increase on spending for smart transportation technologies such as automatic vehicle ID
  - and smart governance systems such as e-ID and ID document systems."

[ABI Research Press release Sept. 8, 2011]

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Designing Interactions, for a system more easily usable

"I would have to learn to design the interactive technology instead of just the physical object"

[Bill Moggridge, 2006]

With "interaction design" products were created with ease of use for the human in mind, rather than simply a machine built by an engineer to perform a certain task

Interaction Design makes smartness happen

NEST is a good example of how IxD turns a dumb product into a smart green one

- new technology and design is injected into the thermostat, to make it easier to use:
  - it simply looks like a knob or a dial because 99.9% of the time is about turn it up/down
  - more complex functions, such as setting a schedule, through a mobile app
  - infrared sensors allow the device to light-up/dim in human presence and turn down the heat
  - it has intelligence that learns from earlier temperature changes
- because thermostats typically control half the energy used in U.S. homes, a better-designed one could significantly reduce power consumption
  - the $250 product has kept owners from using 225 million KWh of energy, saving around $29 million at average U.S. prices
  - it also coaches people to use less energy with the green leaf icon

Design makes ROI-Return on Investment-higher

- According to a recent UK Design Council research, the most commonly reported rate of return from GB companies calculating a % return on design investment was 15%. (2008)
- In Great Britain an average design investment has been calculated to multiply the turnover by 2.25 when compared with the invested resources. (2007)
- In the USA companies who effectively invest in industrial design outperform their competitors by 75% on net sales and have increased profits (2005)
- In Denmark companies investing in design have gained a growth 22 % greater than companies that have not invested in design, and the difference will rise up to 40 % when talking about continuous investing. (2003)

Urbane: life style and culture implications in cities

Attitudes of Urban consumers to be considered when innovating urban services:

- The average Manhattanite household spends 59% of their USD 13079 food budget on dining out, compared to the average American household that spends only 42% of their USD 6,514 food budget on dining out [Bundle, May 2010]
- Even four years ago, Harris identified 'Urban Hustlers' (who comprise 21% of US consumers aged 12-34), spend close to USD 9 billion (10% of their annual spending), on recreational activities. Urban Hustlers are spending, on average, over USD 100 more than the non-urban population monthly, with their overall discretionary spending reaches USD 383 per month [Harris Interactive, June 2007]
- The lifestyle of urban Chinese consumers has changed from a “survive” mentality to an “enjoy life” one, with 54% now pursuing a more fun lifestyle [GfK Roper, 2010]
- Only 17% of Chinese urban dwellers say they are 'reluctant to spend money'. [Economist Intelligence Unit, August 2010]

Why Interaction Design is well applied to urban innovation

- The rise of human-centered design
  - human-centered design thinking and approaches are now gaining mainstream credence among private sector decision-makers focused on innovation.
  - human-centered design thinking is a methodology and toolkit popularized by its use at Apple and design firms such as IDEO
  - design thinking in government ICT is particularly applicable in changing workflow for shared services, in co-creation initiatives, and in efforts dealing with open data that involve citizens and multiple agencies

- New ingredients to create Smart Cities for the city developers coming from the IT industry
  - "Although [city] developers and the IT industry have always had common interests, the "smart" part of smart cities assumes an unprecedented level of IT technology. So, while developers embrace complexity through their master planning skills, they need to understand the new IT paradigms of cloud, Internet of Things, Big Data, and "bring your own device", thus bringing this new model for strategic partnering for smart cities to the fore, led by developers."

[Joe Dignan, Chief Public Sector Technology Analyst at Ovum]

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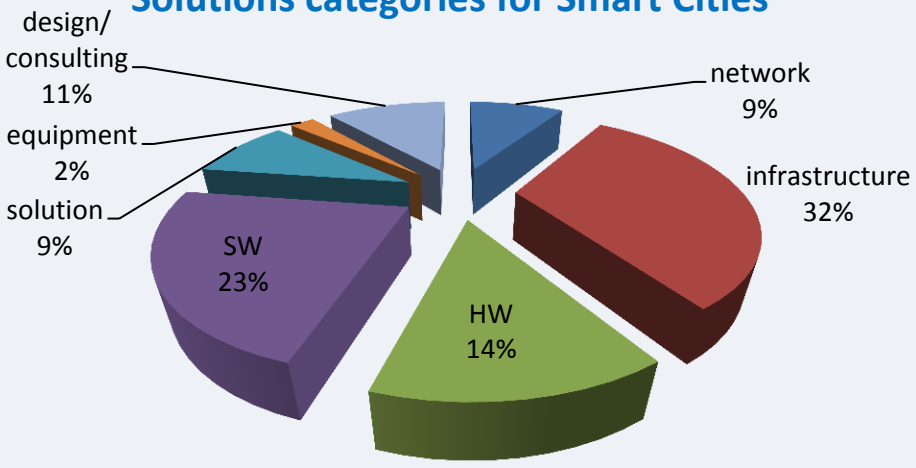
Solutions for Smart Cities: Company Landscape

- The following slides contain a list of companies providing solutions for Smart Cities. This analysis must not be considered as comprehensive and will be updated during the UrbanIxD project life.

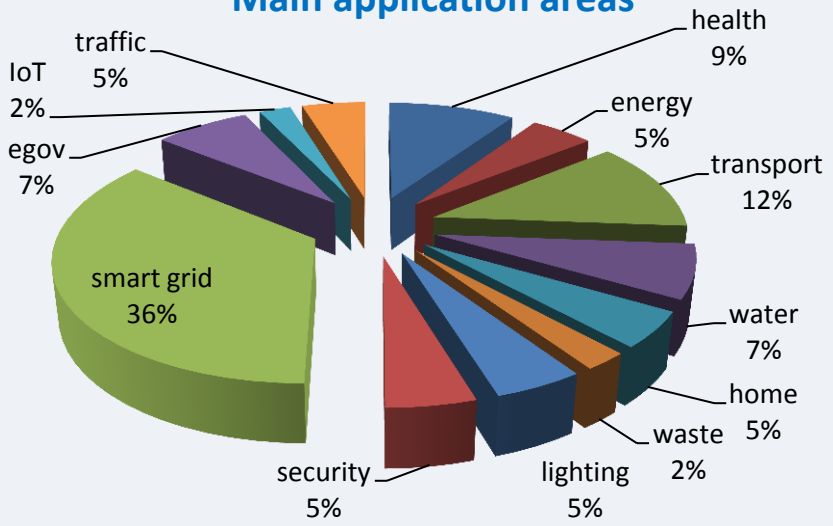
ABB CISCO HITACHI PHILIPS ARUP ERICSSON T GE IBM Telefonica SAP WSP

Solutions categories for Smart Cities



Most of the companies offer infrastructure for vertical solution. Design is present, mainly as a consulting service to the solutions implementations.

Main application areas



The most addressed application is smart grid followed by several vertical areas.

Companies providing solutions for the Smart Cities [1/5]

Company	Solution	Description
3M	Smart Cities (HW&Infrastructure: PlanIT Valley)	3M are partners in creating a Songdo International City Hospital within the city. 3M is also developing digital signs and 'stick-on-film" for use in the Meixi Lake project (China) and New Songdo City (S. Korea).
ABB	Smart Grid	ABB is one of the largest engineering companies in the world operating in robotics, power and automation technology areas. According to ABB the Smart Grid is the future for electrical systems. ABB collaborates with learning Institutions and external partners in several Smart Grid demonstration projects.
Accenture	Intelligent City Network (Consulting: PlanIT Valley, New SongDo)	Accenture offers smart grid solutions under the banner "Intelligent City Network' claiming they can provide tools to manage "massive volumes of smart grid data into actionable, intelligent information, intelligent transport system. The commercial model is offering governance for Smart City projects.
AECOM	Smart Cities	AECOM is a global provider of professional technical and management support services. The company is a partner with Cisco's Smart + Connected Communities web platform, and is working with IBM on a new Smarter Cities initiative by contributing its expertise in water infrastructure.
Alstom	Alstom Grid	The company provides energy and transport infrastructure. Alstom's grid management solutions includes software for control rooms as well as project management and engineering services. Alstom is collaborating with IBM, Toshiba, Cisco and Microsoft in a field of Smart City products.
Arup	Urban Information Architecture (Consulting: PlanIT Valley, New SongDo)	Arup provides engineering, design, planning, project management, and consulting services. Arup uses 'Urban Information Architecture' as a market name for smart city solutions provided by Amp. The company in involved in numerous Smart City projects.
Autodesk	Building Information Modelling	Focused on 3D design software for use in the architecture, engineering, construction, manufacturing, media, and entertainment industries. Autodesk's idea is to create future cities by using Building Information Modeling (BIM) software.
Bleak & Veatch	Smart Integrated Infrastructure	A global engineering, consulting, construction and operations company specializing in infrastructure development in energy, water, telecommunications, management consulting, and environmental markets. The company is involved in different Smart Grid projects and promotes the concept of 'Smart integrated infrastructure' which is based on many large infrastructure groups interacting with each other across platforms.

Ref. integration to "City in a Box", Dec 2012, pages 112-113, vol #34

Companies providing solutions for the Smart Cities [2/5]

Company	Solution	Description
Buro Happold	Smart Solutions (Consulting: PlanIT Valley)	The company provides engineering consultancy, design, planning, project management and other consulting services. The company is working worldwide with major experience in the Middle East market. Smart Solutions is Buro Happold's computational innovation service based on 'Smart Structural Solution', 'Smart Crowd Flow Simulations', and 'Smart Software Solutions'.
Cisco	Smart + Connected Communities (HW & Infrastructure: New SongDo, PlanIT Valley, Lavasa)	Cisco is one of the main players in the smart cities market through than Smart+Connect Communities. The company presents network solutions, such as Telepresence and Telehealth as key elements in future cities. Area addressed: Smart Grid, Smart and Connected Communities, Health solution, Real Estate,Sport and Entertainment. Commercial model is promoting an evolved broadband infrastructure.
Deutsche Telekom	Smart Cities (HW&Infrastructure: T-City)	The company has promoted the "T-City Friedrichshafen. Living the future" (www.t-city.net) partnership, a field lab for trialling 30 projects; implemented in 2009, concluded in 2012. Solutions addressed: Learning and research, Mobility e Transport, Business and Work, eCitizens, Health and care. Deutsche Telekom provided the most innovative fix and mobile broadband connectivity over the city.
Eaton	Smart Grid	Eaton Corporation is a diversified power management company providing electrical, hydraulic. and mechanical power management solutions. Eaton provides Smart Grid solutions for utility. commercial. industrial. and residential markets.
Ericsson	Smart Solutions	Ericsson is working on solutions addressing Utilities, Safety & Security, Transports. Its commercial model is an offer to Power utilities, offering safety and security solutions to first responders and emergency response agencies; expanding to electric-car charging, municipal administration e-governance solutions.
Fujitsu	Smart Cities (Japan and Saudi Arabia)	Fujitsu is mainly working to harness ICT in solutions on energy, the environment and citizen quality of life.
General Electric	Ecomagination	The Ecomagination initiative presents General Electric's interest in sustainable solutions. The company uses a smart grid concept in order to become an Infrastructure provider for different cities all around the world.
Hitachi	Smart Cities (HW&Infrastructure: PlanIT Valley)	Hitachi plans to help create an eco-friendly, energy-efficient city in Sandai. Dalian, and Kashiwa. The company is considering setting up an in-house group specializing in smart city planning that would he self-supporting and responsible for its sales and profits.

Ref. integration to "City in a Box", Dec 2012, pages 112-113, vol #34

Companies providing solutions for the Smart Cities [3/5]

Company	Solution	Description
HP	Central Nervous System of the Earth	HP's in developing Central Nervous System of the Earth or CeNSE - an Internet of Things concept. The idea is that by installing big network of sensors to collect data around the world, HP is trying to build a central nervous system for the earth. HP will deploy CeNSE to help Shall drill for oil.
Huawei	eCities	Huawei recognizes that the ICT market has great possibilities in the future and their company offers: Smart Transportation Solutions, Smart Grid Solutions, Smart Financial Solutions. Huawei promotes the eCity concept which is based on grid monitoring and management tools for municipal administrative facilities, municipal infrastructure, etc.
IBM	Smarter Planet Strategy	IBM provides HW, SW and consultancy services for hundreds of cities all around the world. With its Smarter Planet strategy IBM presents itself as one of the leaders in smart cities market. Area addressed: Building & Energy Management, Public security, Trasports, Energy & Utilities, Education. Commercial model: Support services: monetization will be tied to the results (new revenues and saves); Creation (with mayor resolution) of a joint IBM and City council committee for innovation; Target: for big cities on-premises offering, for small towns IBM infrastructure based hosted-cloud.
Intel	Sustainable Connected Cities	Intel provides sensors used in different ICT projects. In collaboration with Imperial College London & University College London Company started the Collaborative Research Institute for Sustainable Connected Cities.
KPN	Amsterdam Smart City	The company has taken part to the smart grid project of Amsterdam Smart City, collaborating to offer solutions on: intelligent building (security), victim tracking system, smart metering, supply chain-wide RFID
Landis & Gyr	Smart Metering	Landis + Gyr focus on metering and energy management solutions. The company announces the development of Gridstream MDUS, a smart meter data unification and synchronization system.
LG	U-Life	U-Life (Ubiquitous Life) is the nucleus of LG Homnet intelligent home products. It focuses on using ubiquitous computing to connect communities and create public Innovation in Songdo City, Korea.
Lockheed Martin	Smart Grid	Lockheed Martin is global company operating in four main business segments: aeronautics, electronic systems, information systems & global solutions, and space systems. Lockheed Martin entered the demand response market in 2010. Company provides Smart Grid products such as Smart Energy Enterprise Suite.
McLaren Group	Smart Cities	McLaren Electronic Systems is among a group of companies that have agreed to work together on technologies that will enable the construction of smart cities in the UK. McLaren Electronic System developed the UrbanOS for connecting sensors in the Living PlanIT project.

Ref. integration to "City in a Box", Dec 2012, pages 112-113, vol #34

Companies providing solutions for the Smart Cities [4/5]

Company	Solution	Description
Microsoft	Smart Community System (SW: New SongDo, PlanIT Valley, Lavasa)	Microsoft markets their Connected Governance Framework (CGF) built upon the foundation of the Citizen Services Platform. CGF is a set of concepts, guidelines, and resources for the central government, a regional government or a local government to improve their services and productivity. They are involved in New Songdo, PlanIT Valley, and other smart city projects. In July 2013 Microsoft launched also the smart city initiative CityNext, which leverages on big data, cloud and mobility.
Mitsubishi	Smart Community System	Mitsubishi, together with Hitachi, is working on the infrastructure for the development of new cities along the Mumbai-New Delhi corridor also announcing a Smart Community system demo project in Spain.
Oracle	Government	Developing computer hardware systems and enterprise software products, Oracle's solution for Smart Cities built on a web foundation to streamline transactions and create multi-channel communications among constituents and local agencies.
Orange	Orange Smart Cities Program	A part of France Telecom - Orange Group, it delivers telecommunications infrastructure solutions to cities that provide ubiquitous IP-based infrastructure and connectivity, backed by innovative ICT services, including Machine-to-Machine, smart metering, business and on-demand connectivity, public Wi-Fi. Solutions are: IT shared services, Governance, Risk, Compliance application suite, Analytics tools, Municipal Unit management (HR, Finance &Admin). The commercial model is to offer Hardware and application IT solutions to the public sector.
Panasonic	Smart Cities	Panasonic and Accenture are partners for a smart city in Fujisawa, Japan. Panasonic has also started a project of total energy solutions for public housing at Punggol Eco Town. The company is a lead partner on a new Smart City project in Skolkovo, Russia.
Philips	Livable Cities (HW&Infrastructure: PlanIT Valley)	Philips is interested in the possibility of selling more medical equipment and public lighting solutions presented as a ‘ smart lighting’ grid. The company sponsoring a Livable Cities Award for ideas which can improve health and comfort in cities.
SAIC	Smart Grid	SAIC is an American defense company. SAIC works with Smart Grid technology and offers: advanced metering, energy management, smart grid as a service, smart grid infrastructure, smart grid security, technology and implementation, transmission and distribution. SAIC and IBM support ‘Living in a Smart City’ class at the Art Institute of Chicago.
Samsung	u-City	Samsung is heavily invested in emerging IT technologies such as u-city. u-City is a term widely used in Korea to refer to ubiquitous computing. Samsung is involved in several u-City developments in Korea.

Ref. integration to “City in a Box”, Dec 2012, pages 112-113, vol #34

Companies providing solutions for the Smart Cities [5/5]

Company	Solution	Description
SAP	City Performance Management (SW: Lavasa)	One of the largest software companies in the world offers a performance management software for local governments called Business Objects City Performance Management.
Schneider Electric	Wiser Energy Management System	Schneider Electric is a French electric engineering company, specializing in electrical energy transmission and automation. The company is piloting the Wiser Energy Management System, which involves 60.000 consumers using smart thermostats and in-home displays.
Siemens	Sustainable cities	Siemens works on intelligent traffic solutions, green buildings, wastewater management, and smart grid infrastructure as technologies helping to steer today's urbanizations toward sustainability. Siemens Smart Grid Division is working with Accenture on smart metering solutions.
Tata	Smart Cities (SW: Lavasa)	The Tata group operates in communications and information technologies, engineering, materials, services, energy, consumer products and chemicals. In 2010 it was announced that Tata will team up with Mitsubishi on an Indian city project - Nikkei. Tata communications together with Cisco works on telepresence technologies.
Telefonica	Smart Cities (Hw&Infrastructure: Santander)	Smart Santander Project is leaded by Telefonica, University (tech coordinator), local and regional authorities. The project comprises the deployment of one M2M platform for 20.000 devices (sensors, actuators, cameras, mobile terminals). Applications are: city monitoring, traffic flows, air quality, noise and street lamps, refuse collection.
Toshiba	Smart Cities	Toshiba is an electronics, electrical equipment and information technology corporation. For Toshiba one of the most important features of a smart city is a smart electric power metering integrated into the smart grid system. Toshiba plans to realize its smart city ideas in the city of Ishinomaki, Miyagi prefecture, China. The company also plans to participate in twenty smart city projects in various parts of the world.
United Technologies	Sustainable Cities (SW: New SongDo)	United Technologies Corporation (UTC) is a diversified company that provides a broad range of high technology products and services to the global aerospace and building systems industries. The corporation is a subcontractor in New Songdo. The UTC Building Sustainable Cities initiative promotes environmental responsibility through sustainable building practices in urban areas.
WSP	Designing Future Cities	WSP Group provides engineering and design consultancy services. The company is organized into three businesses: Property, Transport & Infrastructure, and Environment & Energy. The company is currently working on City of Arabia in Dubai and Masdar City in Abu Dhabi.

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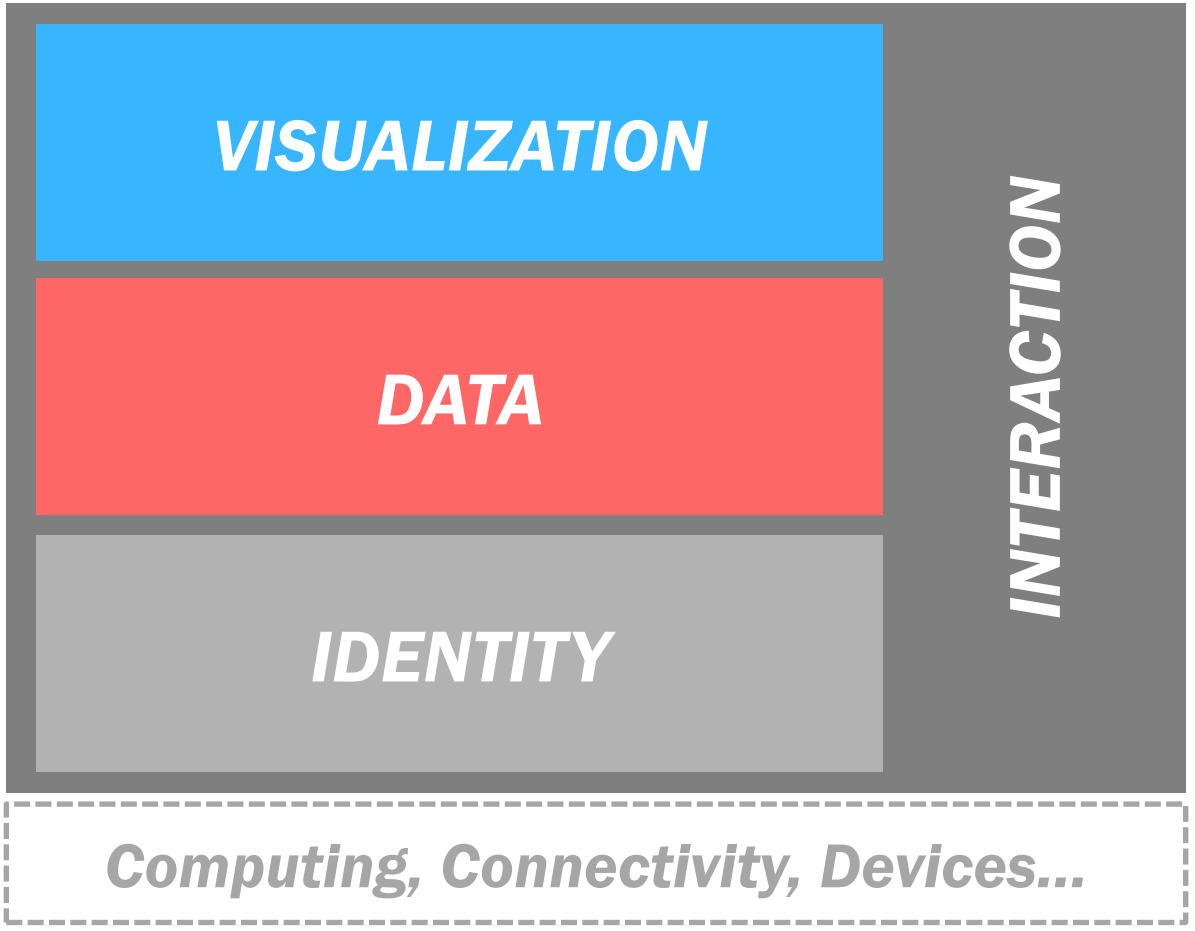
Technological framework and challenges [1/2]



Technological framework and challenges [2/2]

To innovate urban digital services and create urban digital interactions, we consider some technologies broadly available in a smart urban context:

- Personal smart mobile and wireless devices
- Pervasive mobile and wireless ultra-broadband connectivity
- Ubiquitous (Urban) computing
- Production of big, personal, open data (but not necessarily their reachability or availability)

Some technologies have to be addressed as challenges

- A universal identity system that supports an individual, a community or a specific entity to be identified when accessing to the Smart Urban Space[1], disclosing only the quantity of information needed to perform the requested task
- A system able to extract relevant information from a big amount of uncorrelated data in real time
- An effective way to access, publicly visualize and interact with this relevant pieces of information, complementing the access via personal devices

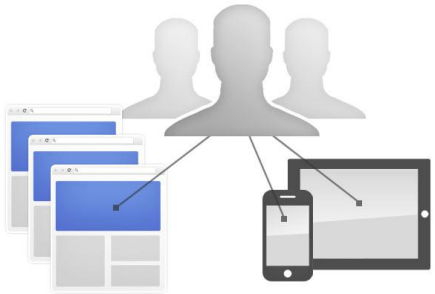
Urban interactions[2] are actions taking place in smart urban spaces by the citizens, based on the mentioned technologies

[1] *http://www.ubicc.org/files/pdf/3_379.pdf*
[2] *http://www.nsf.gov/pubs/1998/sbe981/sbe981.htm*

Digital Identity

Reason why

- Digital Identity is a way for a user to be identified and authorized to access a service (on a web site or so), as well as to transfer attributes
- Today such an Identity can be used to access government services and bank services. The Big OTT (Google, Facebook, Twitter, Microsoft…) use it to give access to their Social Networks and services
- In such a way any service available in the Urban Space can be used by the citizen in an automatic way under his control and in respect of her privacy



Challenge

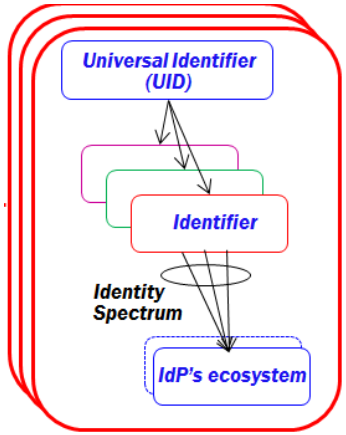
- To create a seamless system to authenticate a user to a digitally permeated urban space in respect of the user privacy and control, managing the attributes sharing, in relation and to the limits of the service goal

Current Cases

- NemID in Denmark [https://www.nemid.nu/dk-en/]

Companies Involved

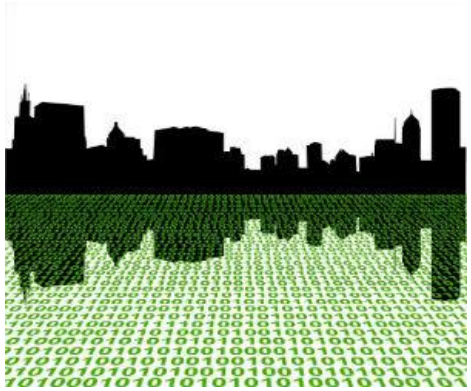
- DanID https://www.nets-danid.dk/, Danish NemID provider
- Gigya http://www.gigya.com/user-management/single-sign-on permission-based social identity data



User-centric IdPs

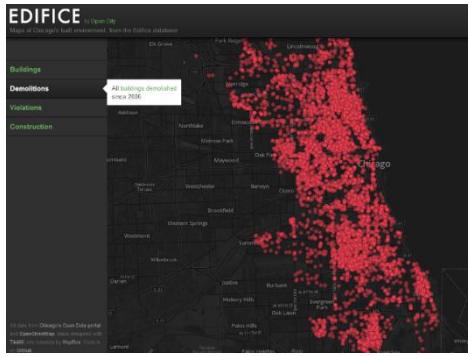
- *Ecosystems specific*
- *Full FIM*
- *Portable identifier*
- *Full Identity Spectrum support*
- *Identity owned & controlled by people*
- *Privacy & security*
- *Law respectful*
- *Pay*

Big Data



Reason why

- At a rough estimate, we will generate 4.1 terabytes per day per square kilometer of urbanized land area by 2016 [1]
- How can a city use data on everything (from weather to traffic patterns to the location of sidewalks and park) and technology to better serve its residents? Open-source predictive analytics platform to offer real-time pattern detection gleaned from multiple types of data. What if your city could tackle a problem before it happens by analyzing historical data, add real-time information, and cross-correlate all of these? [2]

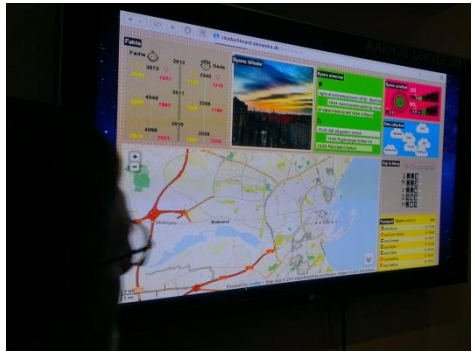


Challenge

- Mainly the algorithms, that have to extract relevant information for the smart citizens. Also the availability of the data to all parties (open data and personal data and internet of/with things)

Current Cases

- Chicago SmartData platform [2]
- LIVE Singapore! The real-time city [3]



Companies Involved

- Actian www.actian.com – products for big data: analytics engine that delivers real-time results on large scale databases

[1] http://blogs.actian.com/seanjackson/2012/12/10/big-data-the-rise-of-the-smart-city
[2] http://www.huffingtonpost.com/rahm-emanuel/mayors-challenge-chicago-_b_2711059.html?utm_hp_ref=mayors-challenge
[3] http://senseable.mit.edu/livesingapore

(Public) Data Visualization

Reason why

- How to access, communicate, visualize and interact with relevant information to the smart citizens, without or in cooperation with smart personal devices and/or public displays

Challenge

- Designing the visual interface, be effective and as much inclusive as possible, transferring complex information without textual description

Current Cases

- NYC Subway System MTA 47'' touch-screen kiosks [1]
- Aarhus Climate on the Wall: interactive generator of climate statements that uses *Ridehuset,* a prominent building in the city centre, as a backdrop [2]
- Aarhus City Bug Report: each light represents a bug in a different stage in respect of time and status [3]

Companies Involved

- Control Group www.controlgroup.com/mta.html - consulting on digital and physical interactions
- D60 www.d60.dk - Data mining and Business Intelligence

[1] http://www.statetechmagazine.com/article/2013/04/nyc-subway-system-launches-digital-interactive-experience
[2] http://www.digitalurbanliving.dk/projects/media-facades/climate-on-the-wall.php
[3] http://www.mediaarchitecture.org/city-hall-tower-aarhus

Interactions

Reason why

- Available information, tied to the individual can be visualized but also personalized, contextualized, adapted, modified, requested. Also actions based on the context could be performed

Challenge

- Make the interactions adequate to the context, user, situation, goal. Identify both technology and process involved (e.g. the iPad success was driven by the multitouch capability of its screen together with the actions to manipulate content through that)

Current Cases

- British Gas through their Smart Energy program enables their customers to compare their heating usage to the average data of their neighbours and thus to change their behaviour accordingly [1] . This has risen interactions from 4 to over 17k reads per year per meter
- Aarhus City Bug Report: via mobile or web app citizens enter bugs, each bug lights a red dot on the tower, when the bug is addressed by the municipality it turns blue

Companies Involved

- IDEO www.ideo.com – global design consultancy. They contributed to design StreetBump, a mobile service for the Boston community to collect road conditions (e.g. potholes) while driving

[1] http://www.britishgas.co.uk/products-and-services/gas-and-electricity/energysmart.html

UrbanIxD Industry Report

- About Smart Cities
- Applying Interaction Design to this market
- Who is in the market
- Technological framework and challenges
- (Inspirational) Questions

Questions

- Which are the main three issues today for a Smart City to take off? Is Interaction Design one of these?
- Which impact do we envision to the urban service innovation if we do not or fail to apply Interaction Design in the process?
- Which areas can benefit the most from the collaboration of Interaction Designers with the Industry to innovate urban services?
- How should we handle the cost added from Interaction Design to the service creation process inside the economic cycle?
- How can we use Interaction Design in a European context where cities are already there and have a historical heritage? Is it a new layer that has to be added or it is part of a more integrated and comprehensive process of innovation?