smart city expo
WORLD CONGRESS

Fira Barcelona

CITIES FOR CITIZENS

Report 2016

Report 2016

smart city expo
WORLD CONGRESS

CIRCULAR ECONOMY
european summit

1.

Smart City Expo World Congress 2016

Cities for Citizens: towards more human-centered smartness

Fast-growing Information and Communications Technology (ICT) is spurring a new kind of urban growth – one that is more efficient, transparent and sustainable, disrupting the form and function of our cities. Yet technology is only an enabler in the Smart City push. Now, more than ever, citizens are at the center of this ongoing urban transformation, helping cities move faster towards more human-centered smartness to achieve progress for all.

Smart City Expo World Congress has proved once more that it is the world's leading event on smart cities, a must-attend meeting place for companies, cities and institutions that are fully engaged in the path towards smarter cities to make a better world.

The 2016 edition shattered previous records in every dimension, from attendees to exhibitors, garnering **16,688 visitors, representatives from more than 600 cities, 126 countries and 591 exhibitors.** More than half of the attendees (51.9%) came from abroad and hold decision-making positions in their organizations. These figures represent growth of 30% in attendance with regard to the 2015 edition. **Over 420 experts**, including keynote speakers such as Ellen MacArthur, Susan Etlinger, Parag Khanna, David Bollier, Kent Larsson and David Harvey, debated the challenges cities are facing, encouraged out-of-the-box thinking and inspired a worldwide call for action to foster more efficient, equitable and sustainable urban development.

They all came together and networked in an area that combined an exhibition zone, showcasing ground-breaking solutions, cutting-edge projects and riveting presentations, with a congress space to promote debate and generate synergies on crucial issues such as **citizen empowerment, co-creation, equity and social innovation, public safety and cybersecurity, livability and resilience, new business models and partnerships, as well as the transition to a circular economy**. This attractive and viable alternative was fully discussed at the **Circular Economy European Summit**, which highlighted that designing a circular and regenerative city is not just a utopia.

A full-scale section of a Smart City was also recreated at the very heart of the event. This inspirational setup, called the Smart City Plaza, was where attendees could discover various implemented solutions that are making life easier for citizens, as well as find business opportunities within a market expected to grow to USD 757.74 billion by 2020 (1). In a central location within this area – named after the Greek Agora that was the center of the city's artistic, spiritual and political life – they also had the opportunity to listen to selected speakers who presented the most innovative projects and case studies on urban innovation to the drop-in audience. Attendees could also network and look for talent in a Marketplace built for the occasion. The same space also hosted an exhibition on Jane Jacobs, a tribute to the urban activist who revolutionized the way we look at urban development by advocating for a city design and planning centered on the community.

In parallel, more than **50 Side Events** and activities supplemented the Smart City Expo World Congress offer by enhancing knowledge on the development of new city models. Once again this year, the World Smart City Awards recognized innovative ideas that are nurturing sustainable development around the world.

In that regard, as an expression of the activities' commitment to sustainable and economically viable cities, every single one that was carried out as part of Smart City Expo World Congress and Circular Economy European Summit adhered to the **Towards Zero Waste** initiative, aimed at substantially reducing residual waste, saving as many resources as possible and demonstrating that we can be working together towards zero waste.

In conclusion, the 2016 edition of the Smart City Expo World Congress was a huge hit where all the attending cities and visitors were able to share experiences, discover innovative solutions and realize that **Citizens are Changing Cities.**

(1) 'Smart Cities Market by Solution and Services for Focus Areas', MarketsandMarkets.com, May 2016.

2.
Circular Economy European Summit

A new economic recipe

The Circular Economy European Summit (CEES) was a full three-day event running in parallel to the Smart City Expo World Congress, that focused on how to design Circular Cities by connecting technical resources, creating restorative and regenerative systems, developing symbiotic urban industries and an inclusive economy, as well as taking care of the release of nutrients in the city, i.e. the waste produced.

The event highlighted why cities are fundamental to the transition to this alternative system, where products and business models are designed to maintain the value of resources. In short, instead of making, using and disposing, people are encouraged to re-use, repair and recycle to make the most of the life cycle of things and energies, to contribute to the global economy and to generate many job opportunities.

Smart City Expo World Congress, together with the Ellen MacArthur Foundation, presented the best content for those interested in being circular, and provided plenty of opportunities to network with the **60 thought leaders speaking in 24 sessions**, at the summit headlined by Ellen MacArthur.

The successful solo long-distance yachtswoman insisted that the current economic model cannot operate in the long term, and stressed that cities hold a massive opportunity for circularity, since they act as central infrastructure hubs for key resource flows such as energy, heat and water. If a city wishes to capture and recirculate these nutrients more effectively, then the close proximity of citizens, industry, retailers, service providers and municipal authorities offers an ideal platform to fast-track collaboration.

However, as highlighted by other speakers such as Antoinette Guhl, Deputy Mayor of Paris; Iain Gulland,

Chief Executive of Zero Waste Scotland, Françoise Bonnet, Secretary General at ACR+; Marcus Gover, CEO of WRAP; Lewis Perkins, President of Cradle to Cradle Products; Cecilia Strömblad, Sustainability Business Expert at H&M; and Anton Brummelhuis, Senior Director Sustainability at Philips Lighting, moving to a more circular model means redefining how we produce, consume, use and recycle products. Attendees could put the knowledge acquired into practice and experiment with new business models based on circularity throughout several workshops that showed how to maximize value along the chain and, crucially, how to enable assets to be continually re-introduced to markets.

The Circular Economy is certainly the way forward. The European Commission has adopted an ambitious Circular Economy Package that includes an EU Action Plan establishing a concrete and ambitious program of action, with measures covering the whole cycle: from production and consumption to waste management and the market for secondary raw materials. Nevertheless, further discussion is needed to move forward along this path in a more focused way.

Smart City Expo World Congress & Circular Economy European Summit Key Figures

126 countries

591 Exhibitors

16,688 Attendees

600+ Cities

126 Countries
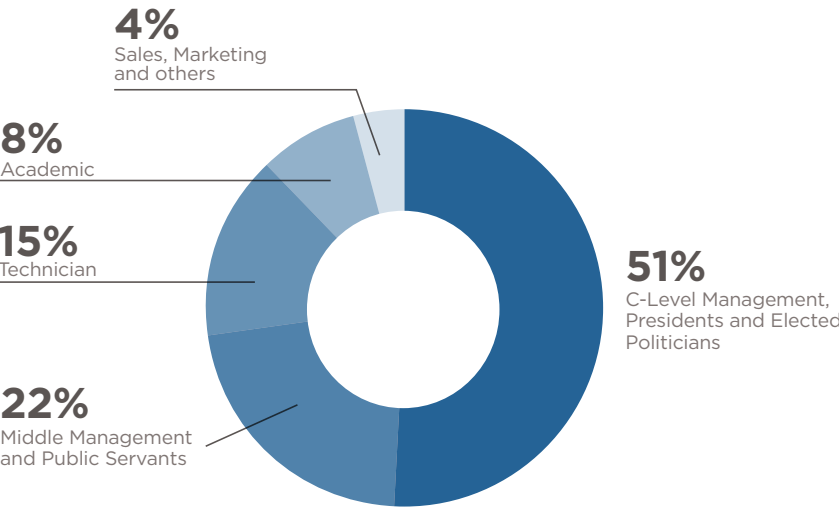
420+ Speakers
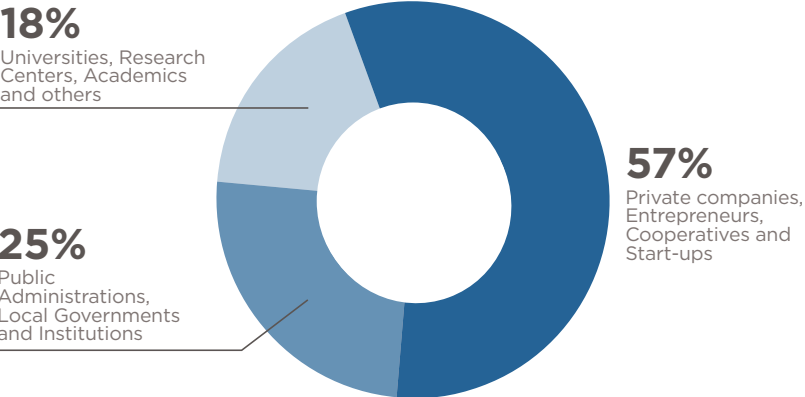
50+ Side Events/ Activities

Presidents, CEOs and High-Ranking Executives accounted for almost 50% of attendees

- **4%** Sales, Marketing and others
- **8%** Academic
- **15%** Technician
- **22%** Middle Management and Public Servants
- **51%** C-Level Management, Presidents and Elected Politicians
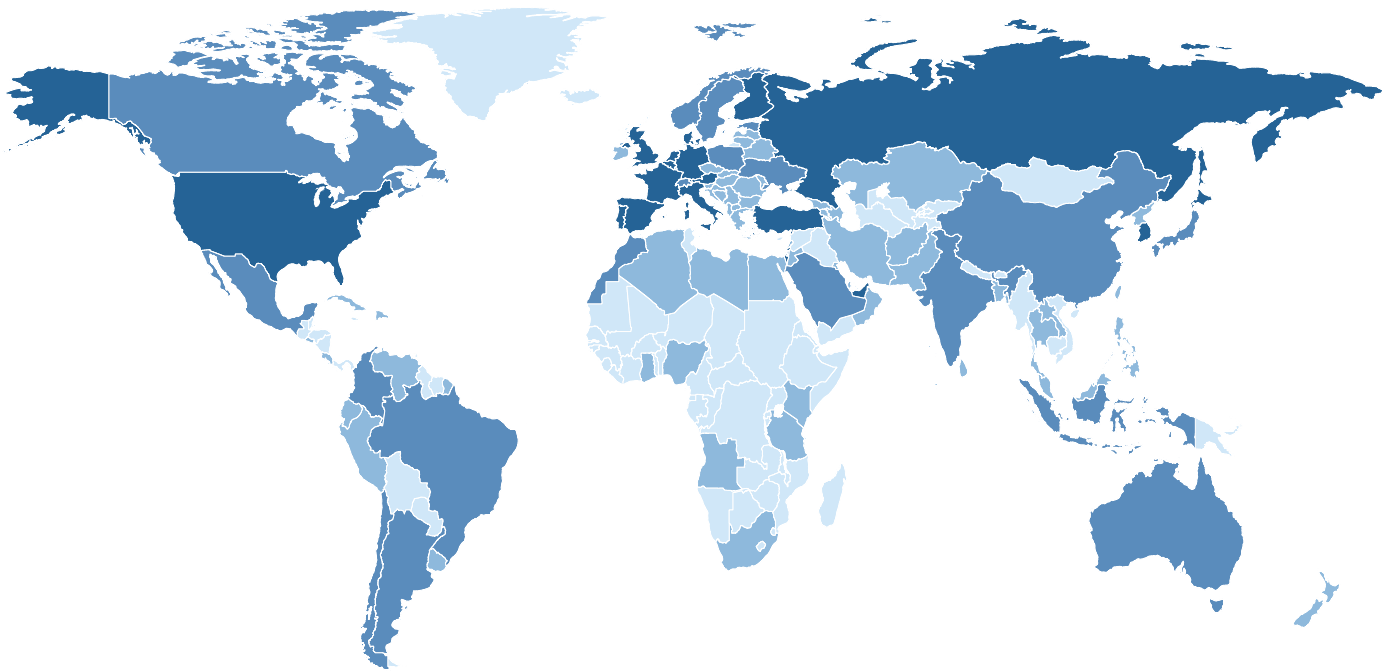
A diverse and multi-sectoral interest in Smart Cities

- **18%** Universities, Research Centers, Academics and others
- **25%** Public Administrations, Local Governments and Institutions
- **57%** Private companies, Entrepreneurs, Cooperatives and Start-ups
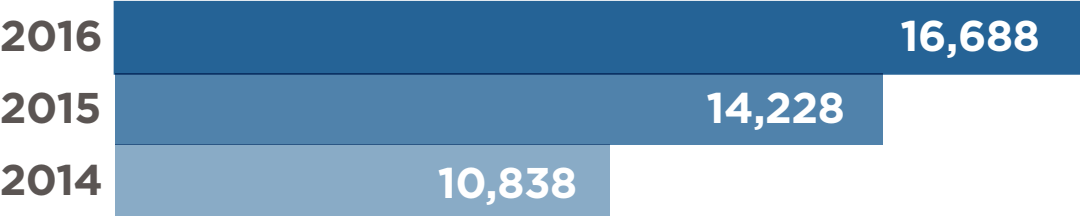
Attendees came from 126 different countries

+ −

'A globalized smart community'

Smart Community Growth

Visitors

- 2016 — 16,688
- 2015 — 14,228
- 2014 — 10,838

3.
Barcelona,
a Democratic City

Finding the perfect match may be a lifelong job. Yet, in Barcelona, technology and citizens' initiatives may have found the way to make us click. The city is a world leader in applying smart solutions, ranked by The Guardian's **GLab** articles among those leading the new Smart City model. Other specialists, such as urban and climate strategist Boyd Cohen, also consider the city as an international point of reference in this field. Moreover, a more local study conducted by ACCIÓ, the Catalan Agency for Business Competitiveness, points to Barcelona as an important hub of the Smart City sector, which comprises **270 companies** with a turnover of **EUR 6.969 million** employing **116,163 people**.
In fact, Barcelona lives in smart mode year round. So, as expected, companies from Barcelona had a major role in the show. **2,832 attendees** from
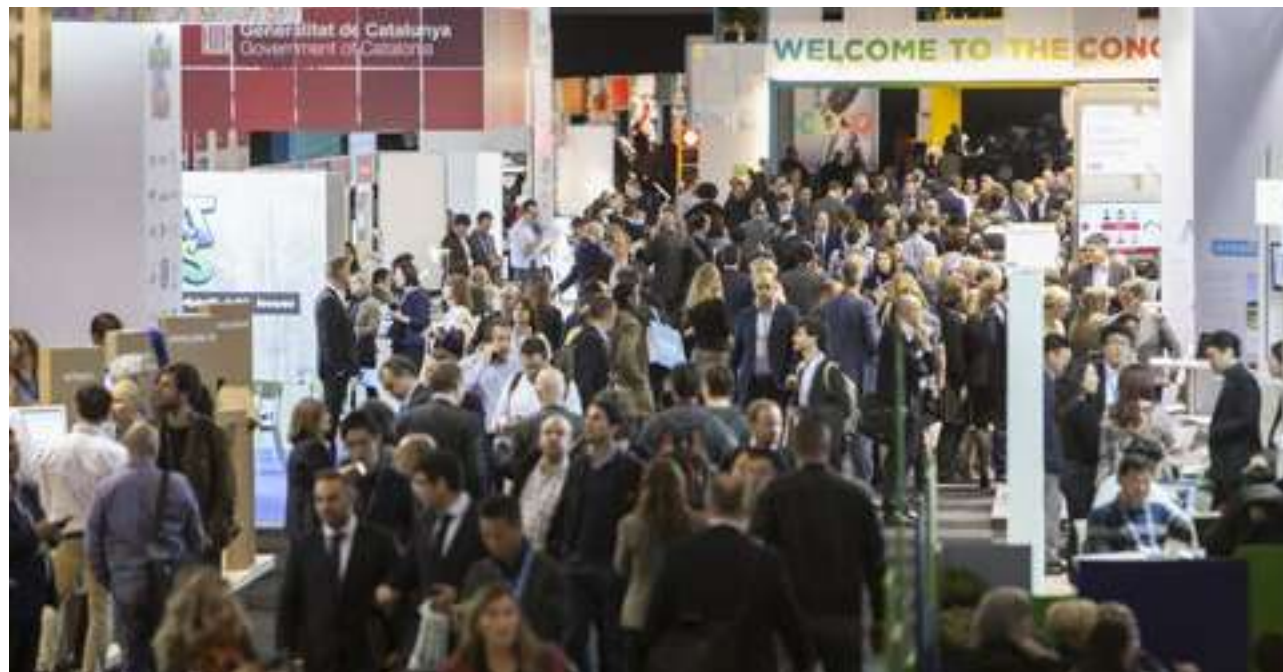
1,448 Barcelona-based firms and institutions visited the event. The City Council brought together **19 companies** showcasing solutions that are already making citizens' life easier; Four Years From Now (4YFN) Village focused on **10 Catalan start-ups** with ground-breaking solutions; and the Government of Catalonia's booth included **20 local firms** that are developing and promoting smart services. A total of **49 companies** were therefore able to take full advantage of this unique scenario. Furthermore, various networking and matchmaking activities, such as **SynergyS, Brokerage Event and Job Marketplace** were promoted by the above-mentioned institutions with the support of Smart City Expo World Congress, serving as fertile grounds for local business to explore new opportunities.

Barcelona Digital City Plan

Along these same lines, the City Council presented the international community with **the Barcelona Digital City Plan 2017-2020** to drive technological sovereignty, a more plural digital economy and to make a new model of urban innovation possible, based on collaboration between companies, public administrations, the academic and research community, and the general public.

Four main themes of discussion were brought up in order to debate on the digital transformation of Barcelona and how technology is a key element at the service of people for the democratization of the city: **the Common City, the Circular City, the Creative City and the Democratic City**.

Presentations and workshops by local companies and associations stressed the transformative power of FabLabs, Open Business Models, Technologies of Inclusion, Participatory Elements on City Welfare, the Open Internet of Things, Urban Design Towards Participation and the main challenges that define the Innovative City, among other topics.

The Smart City Expo World Congress was opened by local government with a **Welcome Dinner** held at the Palauet Albéniz and attended by Mrs Ada Colau, Mayor of Barcelona, as well as over 100 representatives of cities, institutions and corporations. It highlighted that the Smart City Expo World Congress made networking with CIOs from other cities much easier, facilitating knowledge sharing and great international exposure.

Representatives from the local government also participated in the following sessions of the Congress, emphasizing that **Cities are for Citizens**:

OPENING:
Cities for Citizens, Citizens Changing Cities
Gerardo Pisarello – First Deputy Mayor

PARALLEL SESSIONS & SIDE EVENTS
Implementing Flexible and Multi-modal Transport Services
Álvaro Nicolás – Mobility Advisor

Shared & On-Demand Mobility Services
Jordi Ortuño - IT Mobility & Infrastructures Manager

A New Deal on Data: What Role for Cities? Collaborative Platforms for Digital Social Innovation and Sustainability
Francesca Bria – Chief Technology and Digital Innovation Officer

Enhancing Civic Engagement in the Digital Age
Gala Pin, Councillor of Participation and Districts

Technology in Resilient Recovery
Ares Gabàs, Chief Resilience Officer

Decidim Barcelona
Xavier Barandarian, Research and Development, Participation Councillorship

Lastly, at the World Smart City Awards ceremony, held as part of the show, Francesca Bria presented the City Award together with Kumaresh Misra, Deputy Secretary General of Habitat III.
Smart City Expo World Congress will keep striving to support this new model by generating synergies, sharing knowledge, provoking discussion, reflection and inspiring new actions.

4.
Partners
Global Partners

We are thankful to our partners and supporters, without whom this event would not have been possible.

Amazon Web Services

Amazon Web Services (AWS) helps local and regional governments innovate by simplifying IT workloads that governments struggle with and depend on every day, such as Geographical Information Systems (GIS), Content Management Systems (CMS), Open Data portals and more. All these applications run on AWS and make it easier for governments to deliver services to their citizens. With AWS, clients only pay for what they use, with no up-front physical infrastructure expenses or long-term commitments.

aws.amazon.com

Cisco

Cisco designs and sells broad lines of products, provides services and delivers integrated solutions to develop and connect networks around the world, building the Internet. Over the last 30+ years, the company has been the world's leader in connecting people, things and technologies – to each other and to the Internet – realizing its vision of changing the way the world works, lives, plays and learns. It has expanded to new markets that are a natural extension of its core networking business, as the network has become the platform for automating, orchestrating, integrating and delivering an ever-increasing array of information technology-based products and services. Cisco is focused on helping businesses of all sizes, public institutions, governments and communication service providers achieve their desired business outcomes and use IT to drive growth, improve productivity, reduce costs, mitigate risk and gain a competitive advantage in an increasingly digital world.

www.cisco.com

FCC Environment

FCC Environment – the division at the FCC group that provides environmental services to 53 million people in about 5,000 municipalities in 13 countries – has been very active at Smart City Expo World Congress 2016. The visitors took part in diverse activities organized by FCC Environment: they were brought up to date with FCC's innovative proposals on electric Zero-Emission Vehicles (ZEV) and Big Data management platforms, applied to municipal services, such as the maintenance and cleaning of sewage networks (DRACMA), helping to move forward with cities' sustainable mobility. FCC also explained its actions for integrate disabled people in order to assist in the achievement of socially responsible cities, which in this Congress focused on providing:
-Motorized chairs for attendees with reduced mobility.
-Special coaches for visually impaired people.
-Simultaneous sign language interpreting.

www.fcc.es

ferrovial services

Ferrovial Services is one of the four business divisions of Ferrovial, one of the world's leading infrastructure and service operators. Ferrovial Services performs activities along the value chain (consulting, design, operation and whole life cycle maintenance) and has operations in Europe, Australia, New Zealand, the Americas and the Middle East. Urban services are one of Ferrovial Services' main activities through its work with more than one thousand municipalities. The Ferrovial Services Center of Excellence for Cities develops and delivers innovative program solutions and models in collaboration with forward-thinking cities and other innovation stakeholders. Through this Center of Excellence, Ferrovial Services seeks to pioneer the new generation of citizen-centered service models, driven by the emotional engagement of citizens and the intelligent use of data and cutting-edge technologies.

www.ferrovial.com

FIWARE

FIWARE is an Open Source initiative whose mission is to build an open ecosystem around public, royalty-free technologies. FIWARE enables the development of open and portable Smart Applications in multiple vertical domains. It eases the connection of IoT devices with other sources of context information, together with Big Data analysis processes in the cloud. FIWARE is contributing to defining the concept of real-time (open) context data and is experiencing rapid adoption by Smart Cities, following a vendor neutral, bottom-up and driven-by-implementation approach. With this aim, FIWARE defines the standard APIs and data models required to capture what is going on in the city. In addition, through partnerships with relevant actors, FIWARE is also paving the way to evolve from Open Data to the Economy of Data. Ultimately, it enables the creation of a sustainable market of interoperable and portable solutions.

www.fiware.org/smart-cities

Huawei

Huawei is a leading global Information and Communications Technology (ICT) solutions provider. Driven by responsible operations, ongoing innovation and open collaboration, the company has established a competitive ICT portfolio of end-to-end solutions in telecom and enterprise networks, devices and cloud computing. Its ICT solutions, products and services are used in more than 170 countries and regions, serving over one-third of the world's population. With more than 170,000 employees, Huawei is committed to enabling the future information society and building a better connected World. At Smart City Expo Congress 2016, Huawei exhibited an impressive array of innovative solutions and announced that Spain, and specifically Malaga and Seville, will be the first market in which NB-IoT technology will be developed in 2017.

e.huawei.com/uk/

mastercard

As a technology company, Mastercard is helping cities around the world become more resilient, more sustainable and more inclusive. At Smart City Expo World Congress 2016, Mastercard showcased insights, case studies, technologies and partnerships from around the world that show how to make better cities. Led by a global team representing Mastercard Enterprise Partnerships, Mastercard Advisors and Government Solutions, the company brought innovative urban solutions to life at its booth, in Smart City Plaza and through a series of interactive sessions. Mastercard understands that getting smarter cities takes collaboration between partners, across industries and sectors – for example through organizations such as the C40 Cities Climate Leadership Group, the Global Cities Business Alliance and 100 Resilient Cities Pioneered by The Rockefeller Foundation – to unlock the full potential of today's technologies and to realize the vision of cities that better serve their citizens.

www.mastercard.com/smart-cities

Global Partners

Microsoft

Founded in 1975, Microsoft empowers every person and every organization on the planet to achieve more. Microsoft CityNext allows for more sustainable, prosperous and economically competitive cities – with a simplified approach. It helps cities digitally transform and unlock their potential by delivering innovative digital services that can help citizens lead safer and healthier lives, enriched by high-quality education. Cities can tap into the solution portfolios from Microsoft and its partners and innovate at their own pace, deploying solutions that can interoperate with and improve on their existing IT investments. CityNext provides an integrated, flexible, trustworthy approach to help cities engage their citizens, empower their employees, optimize their operations and infrastructure, and transform and accelerate innovation, economic development and environmental sustainability.

www.microsoft.com/citynext

PHILIPS

Philips Lighting takes light beyond illumination with the world's most complete portfolio of LED luminaires, controls, software management platforms, apps and services. By 2050, there will be 10 billion people inhabiting our planet, and two-thirds of them will live in cities, where 78% of the world's energy is consumed. Yet, cities don't just need more light. They need light that is energy efficient and digital. This vision opens a world of possibilities. The idea is simple. The results profound. When every light point can send and receive data, you can unlock the enormous potential of connected lighting systems and the Internet of Things. Philip's connected lighting systems are already being used by cities like Los Angeles and Buenos Aires to radically reduce energy costs, improve the environment and provide safer, more liveable neighborhoods.

www.philips.com/smartcities

SAP

SAP future cities helps improve livability for all by increasing urban resilience, enabling digital transformation and boosting economic prosperity. SAP is helping to inspire, create and empower the next generation of city leaders and city innovators to use technology in a way that delivers greater value to all those who live, work or visit the city. Using the broadest set of applications, technology and network platforms, SAP is helping address critical scenarios in cities, from the Internet of Everything to public safety and health. With SAP solutions, cities can run better, help make it easier for businesses to thrive and provide a safe environment for citizens.

www.go.sap.com

SEAT

SEAT is the only company that designs, develops, manufactures and markets cars in Spain. The multinational is part of the Volkswagen Group and headquartered in (Barcelona), and exports over 80% of its vehicles, with a presence in over 75 countries. In 2016, SEAT achieved worldwide sales of 410,200 units, its highest result since 2007. SEAT Group employs more than 14,000 professionals at its three production centers: Barcelona, El Prat de Llobregat and Martorell, where it manufactures the highly successful Ibiza and Leon. Additionally, the company produces the Ateca and the Toledo in the Czech Republic, the Alhambra in Portugal and the Mii in Slovakia. The company has a Technical Center that operates as a knowledge hub bringing together 1,000 engineers who are focused on developing innovation for Spain's largest industrial investor in R&D. SEAT already features the latest connectivity technology in its vehicle range and is currently engaged in the company's global digitization process to promote the mobility of the future.

www.seat.com

SIEMENS
Ingenuity for life

Siemens AG is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 165 years. The company is active in more than 200 countries, focusing on the areas of electrification, automation and digitalization. It is one of the world's largest producers of energy-efficient, resource-saving technologies, and a leading provider in offshore wind turbine construction, gas and steam turbines for power generation and power transmission solutions, as well as being a pioneer in infrastructure solutions and automation, drive and software solutions for industry. The company is also a leading supplier of medical imaging equipment, such as computed tomography and magnetic resonance imaging systems, as well as in laboratory diagnostics and clinical IT. During the 2015 financial year, Siemens generated revenue of €75.6 billion and net income of €7.4 billion. At the end of September 2015, the company had around 348,000 employees worldwide.
www.siemens.com/SCEWC

Telefónica

Telefónica aims to contribute to cities' digital transformation, helping them achieve social, economic and environmental balance as well as discover new ways of interacting with citizens. The company strives to play an active role in turning cities into places full of possibilities. It offers a wide range of digital solutions, raising a new generation of services and businesses where decision making is faster and city services are more efficient, thanks to intelligent data management. Telefónica is an end-to-end provider of Smart City solutions. It integrates vertical services in an open and interoperable platform to enhance city services management, relying on the best possible partners to deliver those services and maintaining good relationships with companies and knowledge networks (universities, business schools, etc.) to help bring the different stakeholders and players into the Smart Cities Ecosystem.
iot.telefonica.com

suez

The increasing scarcity of natural resources is a challenge that will engage future generations. SUEZ's goal is to ensure the most rational, efficient and sustainable management of today's and tomorrow's resources for cities and industries, by optimizing processes, securing new alternatives for water supply, protecting the environment and recovering value from waste and by-products. Committed to sustainable development, SUEZ is a key partner for cities and industries to support them in making the most of resources. SUEZ provides innovative and sustainable solutions to manage complete water and waste cycles, focusing on environmental and economic performance, ensuring the attractiveness of territories. At Smart City Expo World Congress Barcelona 2016, SUEZ shared the latest smart innovations and technologies to preserve resources for the future.
www.suez-environnement.com

ZTE

ZTE Corporation is a global leader in telecommunications and information technology. As part of ZTE's mobile information communication technologies (M-ICT) strategy, the company provides integrated end-to-end innovations to deliver excellence and value to consumers, carriers, businesses and public sector customers around the world to enable increased connectivity and productivity. Founded in 1985, ZTE is listed on both the Hong Kong and Shenzhen Stock Exchanges. With the industry's most comprehensive product range and end-to-end solutions, ZTE offers cutting-edge wireless, access & bearer, value-added services, terminals and managed services to telecommunications carriers, in addition to ICT solutions for enterprises and government agencies. ZTE is committed to pursuing the company's M-ICT strategy together with its customers and partners, as well as driving innovations in telecommunications and ICT globally as the business and technology needs of the industry continue to evolve.
www.zte.com

Supporting Organizations

European Commission

The European Commission is the EU's executive body. It represents the interests of the whole European Union, not of individual countries. The Commission's main roles are to propose legislation that is then adopted by the co-legislators, the European Parliament and the Council of Ministers; to enforce European law (where necessary with the help of the Court of Justice of the EU); to set objectives and priorities for action, outlined yearly in the Commission Work program, and to work towards delivering them; as well as managing and implementing EU policies, the budget and representing the Union outside Europe (negotiating trade agreements between the EU and other countries, for example). The European Commission's has its headquarters in Brussels, Belgium, with some services also in Luxembourg. The Commission has Representations in all EU Member States and 139 Delegations across the globe.
www.ec.europa.eu

ICEX España Exportación e Inversiones

ICEX Spain Trade and Investment is a public business organization that works worldwide with the objective of promoting the internationalization of Spanish companies to improve their competitiveness, as well as boosting foreign investment in Spain. ICEX offers its services through 98 Economic and Commercial Offices worldwide (the largest foreign network), 31 Provincial and Territorial Trade Offices in Spain and 17 Business Centers abroad, maintaining close contact with Spanish companies. Every year, ICEX organizes around 1,200 promotional activities in foreign markets and answers over 90,000 queries on internationalization.
www.icex.es

Generalitat de Catalunya

The Government of Catalonia organized a corporate booth hosting 20 innovative companies from different Smart City sectors. Information about Smart Catalonia and its strategy was also displayed by several public enterprises. The Smart Catalonia Strategy is designed to make Catalonia an international smart region benchmark, taking advantage of digital technology and information to encourage innovation in public services, foster economic growth and promote a more intelligent, sustainable and integrative society. With this strategy, the Government aims to improve the services provided to citizens, thanks to the more efficient use of resources and more intelligent performance by handling the maximum amount of available information in real time. **www.gencat.cat**

Diputació Barcelona

As the provincial council, the Diputació de Barcelona provides financial and technical resources to the 311 municipalities in its region to support them in the process of becoming smart cities. Since early 2016, the Diputació de Barcelona has offered a multi-tenant sensor platform to collect, process and analyze data from urban devices. There are currently 12 cities and local organizations using it. In the exhibition area, Diputació de Barcelona illustrated the major Smart Region projects institution is involved in (regional platform, new apps, open government program, library bus, sustainability and energy efficiency solutions, etc.). Projects from several municipalities and local authorities in the area were also presented at its booth (Sentilo platform use cases, security app, eGovernment solutions, City Protocol Society initiatives, issue reporting apps, etc.).
www.diba.cat

AMB ⋮ Àrea Metropolitana de Barcelona

The Barcelona Metropolitan Area (AMB) is a public body that coordinates metropolitan services and promotes the main assets of 36 metropolitan municipalities. It is responsible for the planning of public space, housing, mobility and public transport, waste management and the entire water cycle. It also works in the field of urban planning, including policies on the environment, open spaces, economic promotion and social and territorial cohesion. AMB strives to implement new data solutions to facilitate citizens' day-to-day lives by applying a wide range of smart responses to improving public transport service, urban parks and 32 km of beaches. Building an efficient and liveable city requires putting people at the forefront of every activity and public service, plus developing creative and innovative solutions to improve quality of life and create new high-skilled jobs. This is the goal of AMB.
www.amb.cat

ELLEN MACARTHUR FOUNDATION

The Ellen MacArthur Foundation was created in 2010 to accelerate the transition to a circular economy. Its work focuses on four areas: insight and analysis, business and government, education and training, and communication. With its knowledge partner McKinsey & Company, the Foundation works to quantify the economic potential of the circular model and to develop approaches to capture this value. It collaborates with its global partners (Cisco, Google, H&M, Intesa Sanpaolo, Kingfisher, NIKE, Inc., Philips, Renault, Unilever) and its CE100 network to develop circular business initiatives and build capacity. It is also creating a global teaching and learning platform on the circular economy that encompasses work with leading universities, schools and colleges, as well as online events such as the Disruptive Innovation Festival. The Foundation communicates cutting edge ideas and insight through research reports, case studies and books, in addition to the Circulatenews.org online portal.
www.ellenmacarthurfoundation.org

WORLD BANK GROUP

The World Bank Group has set two goals for the world to achieve by 2030: 1) end extreme poverty by decreasing the percentage of people living on less than $1.90 a day to no more than 3%, and 2) promote shared prosperity by fostering the income growth of the bottom 40% for every country. The World Bank Group comprises five institutions managed by their member countries. Established in 1944, the World Bank Group is headquartered in Washington, D.C and it has over 10,000 employees in more than 120 offices worldwide. The World Bank is a vital source of financial and technical assistance to developing countries around the world. It is not a bank in the ordinary sense, but a unique partnership to reduce poverty and support development.
www.worldbank.org

H III IMPLEMENTING THE NEW URBAN AGENDA   United Nations

The New Urban Agenda is the action-oriented document adopted in the United Nations Conference on Housing and Sustainable Urban Development, Habitat III. The Agenda rethinks the way we build, manage and live in cities by bringing together cooperation with committed partners, relevant stakeholders and urban actors at all levels of government as well as the private sector. The New Urban Agenda shares a vision of cities for all, ensuring that all citizens can inhabit and produce just, safe, healthy, accessible, affordable, resilient and sustainable cities and human settlements, to foster prosperity and quality of life. The task now is to implement the forward-looking New Urban Agenda, aligned with the Agenda 2030 and the Sustainable Development Goals, assisted by the Quito Implementation Plan, which is made up of specific voluntary commitments by various partners and governments.
www.habitat3.org

IDB

The effects of rapid urban growth, combined with the impact of climate change, are creating new challenges for cities, which require better use of information. To manage these challenges and deliver better urban services, cities need to better leverage technology, people and processes. The Inter-American Development Bank (IDB) works to improve lives in Latin America and the Caribbean through financial and technical support for countries working to reduce poverty and inequality. It helps improve health and education, and to advance infrastructure. It is the leading source of development financing for Latin America and the Caribbean. It conducts extensive research and provides loans, grants, and technical assistance. It is committed to achieving measurable results and the highest standards of increased integrity, transparency, accountability and sustainability.
www.iadb.org

GSMA Connected Living

The GSMA Connected Living program is working with mobile operators, governments and city councils to agree a common approach to smart city solutions that will deliver real, long-term benefits to businesses and citizens. Its smart cities initiative provides an array of resources that can assist governments, city planners and digital service providers in their quest to deploy connected solutions and create cities that are truly smart.
www.gsma.com/smartcities

MOBILE WORLD CAPITAL™ BARCELONA

For the second year running, Four Years From Now (4YFN), the start-up business platform of Mobile World Capital Barcelona, bridged the gap between entrepreneurs, investors and corporations to create long-lasting connections during the Smart City Expo World Congress. The 4YFN start-up village, situated at the heart of the Expo, showcased pioneering start-up innovations and pitches that took place on stage to key players within the industry. It was the perfect place to discover disruptive smart city technology. Moreover, the 4YFN Award Ceremony attracted participants from all over the world, giving the finalists global recognition for their awe-inspiring smart projects.
www.mobileworldcapital.com
www.4yfn.com

UCLG United Cities and Local Governments

Formed in May 2004, United Cities and Local Governments (UCLG) is a global network of cities and local, metropolitan and regional governments, as well as the largest organization of local governments in the world. Representing over half of the world's population with a membership that includes more than 240,000 local governments, metropolises and regions, as well as 175 national associations of local governments in over 140 United Nations Member States and all world regions, UCLG is the united voice and world advocate of democratic local self-government. It promotes its values, objectives and interests through cooperation between local governments and within the wider international community, firmly advocating that global challenges and responsibilities cannot be faced individually by one city, nation or actor.
www.uclg.org/en

Event Partners

BOSCH
Invented for life

Bosch is transforming the cities of the future into vibrant, attractive and sustainable places for people to be. These connected cities are interactive places where everyday life is easy and efficient and where people are in tune with each other and their city.
We provide connected solutions, devices and information for people in the city. Working with city stakeholders and partners, we strive to simplify urban mobility, enhance safety and security, optimize use of resources and support citizen participation. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is 'Invented for life'.
www.bosch.com/smartcities

civiciti

Civiciti is a new digital democracy platform that helps citizens, public administrations and organizations around the world to discover, discuss and decide on the issues they care about – a suite of participation, consultation and open data tools that streamlines collective decisions, encourages stakeholder involvement and reinforces government transparency. Civiciti provides municipalities and organizations with a comprehensive, secure and user-friendly solution to communicate directly with their citizens. The aim is to create a trusted space for participation, consultation and dialogue that highlights citizen needs and concerns, promotes continuous communication between election cycles and improves policy decisions. The platform is a cloud-based solution from OpenSeneca, a digital democracy company backed by Telefónica Open Future and Scytl.
www.civiciti.com

cellnex
driving telecom connectivity

Cellnex Telecom is Europe's leading independent operator of wireless communications infrastructure. Cellnex Telecom operates in Spain, Italy, the Netherlands and France and has a portfolio of more than 16,000 locations. It offers customers the space they need at the various centers to install and maintain their communications network equipment and perform wireless voice and data transmission. It also provides the most advanced audiovisual services to national, regional and local broadcasters. It develops 'smart' solutions that optimize services for citizens, through networks and services that facilitate municipal management, thus contributing to effective management of the city and improving the relationship between the administration and citizens. Cellnex Telecom also plays a key role in rolling out security and emergency networks for security forces.
www.cellnextelecom.com

3S DASSAULT SYSTEMES

Dassault Systèmes is a European multinational software company that develops 3D design, 3D digital mock-up and product lifecycle management (PLM) software. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. At Smart City Expo World Congress 2016, Dassault Systèmes presented the 3D collaborative environment 3DEXPERIENCE®, where sensors and city systems are federated into a virtual reference that benefits everyone. The solution is already used by Virtual Singapore to provide city officials, residents and business a platform to meet and co-create a better, more sustainable and resilient Singapore.
www.3dexperiencecity.com

T··

Deutsche Telekom is one of the world's leading integrated telecommunications companies, with some 156 million mobile customers, 29 million fixed-network lines and more than 18 million broadband lines. It provides fixed-network/broadband, mobile communications, Internet and IPTV products and services for consumers as well as Information and Communications Technology (ICT) solutions for business and corporate customers. With a staff of around 225,200 employees throughout the world, it generated revenue of 69.2 billion euros in the 2015 financial year, about 64% of which was outside Germany. To continue to be successful, the company is evolving from a traditional telephone company into an entirely new kind of service company. At Smart City Expo World Congress, Deutsche Telekom showcased its smart city solutions for smart parking and public transport management, intelligent street lighting, smart waste management, public safety, electrical vehicle charging, bike sharing and traffic management.
www.telekom.com

HABIDATUM

Habidatum is an international company assisting urban planners, businesses and professional experts in understanding the hyper-dynamic urban environment. It builds its services around a powerful platform capable of collecting, storing, processing and visualizing quantitative and qualitative urban data. It uses various sources of data, machine-learning techniques and algorithms to make complex analytical support quick and easy. The platform ensures that interaction with real-time data flows through the customised visualization interface. The company presented the alpha version of the platform at Smart City Expo World Congress 2015, and since then its application has been growing exponentially. By Smart City Expo World Congress 2016, the firm had applied the platform in 15+ cities globally (USA, India, UAE, Russia) for various analyzes including master planning, transport planning, real estate price evaluation and commercial property management.
www.habidatum.com

elparking

ElParking is a smart system that provides solutions for drivers, parking companies and public entities. Using web and mobile apps, ElParking offers drivers the ability to park in a specific place and allows them to pay for the parking spot regardless of whether it is on-street or off-street parking (public or private). At the same time, ElParking offers tools for parking facilities administrators so they can notify their unoccupied spots online and manage their facilities on the cloud, while drivers can access the parking lot through their phones without needing to print vouchers or scan any code. For public entities, ElParking provides a smart on-street parking platform that allows drivers to pay for parking quickly and easily by phone and delivers real time parking data that cities can use to improve their urban mobility.
www.elparking.com

Hewlett Packard
Enterprise

Hewlett Packard Enterprise (HPE) is an industry-leading technology company that enables customers to go further, faster. With the industry's most comprehensive portfolio, spanning the cloud to the data center to workplace applications, its technology and services help customers around the world make IT more efficient, more productive and more secure as well as slash the time it takes to turn ideas into value. The cities of tomorrow should use technology to better deliver services and create more liveable spaces. In this sense, the company sees the Internet of Things (IoT) as a key enabler in the transformation towards smart cities and notes how the HPE Universal IoT Platform can support municipalities in that transformation.
www.hpe.com/uk/

PARTNER COUNTRY

The 'Make in India' campaign, launched on 2014, was devised to transform India into a global design and manufacturing hub that can provide support to the various urban renewal missions that the Government of India has announced over recent years. The campaign provides investors across the globe with the platform to understand and to enter the Indian market. This action has been aligned with the urban renewal missions announced by the Government, especially the Smart Cities Mission, so the huge and mostly unexplored market opportunities can be promoted globally. The Smart Cities initiative, structured to transform every segment of the Indian society, is designed to drive economic growth for the country by overhauling existing sprawl and creating fresh urban spaces with all the basic civil amenities and infrastructure to support the rapidly growing urban population and to make the cities smart, efficient, sustainable and liveable.
www.makeinindia.com

Mitsubishi Motors has been developing Electric Vehicles (EV) for over 50 years. Currently, its Outlander PHEV (Plug-in Hybrid Electric Vehicle) has the largest market share in the PHEV segment in Europe. The high-capacity batteries in these vehicles can store electricity from renewable energy sources when demand is low and supply electricity back to the household and grid when demand is high. This unique and innovative technology can be applied by our customers today, supporting home and building energy management. Through Vehicle to Anything (V2X) technologies, EVs have the potential to contribute towards building smart cities. As the connection between cars, society and the environment becomes clearer, Mitsubishi stands ready to forge a path to a new era in sustainable partnership.
www.mitsubishi-motors.com

\Orchestrating a brighter world
NEC

NEC can provide holistic approach for Smart Cities by enabling an integrated solution to be deployed in an efficient way, together with Advanced Vertical Solutions for Smart Services. Today, what the city really needs is a solution engineered to manage a multitude of evolving smart services whilst enhancing its inhabitants' quality of life. The NEC Platform acts as the 'brain' of the city, monitoring and controlling various vertical services. NEC also provides solutions based on smart technologies, helping to optimize resource consumption and improve services through better management of demand and supply. This way, the city can offer better services to the citizens.
www.nec.com/p-safety

saba

Saba is a benchmark industrial operator in developing solutions in the field of urban mobility, specializing in car park management. With a workforce of over 1,300 people, the Group operates in five countries in Europe and Latin America and has 200,000 parking spaces in around 400 centers. The company understands car parks as one more link in the chain of mobility in cities and propose a new sustainable model focused on inclusive, safe, resilient, sustainable communities. In this sense, it is working to prepare a series of actions aimed at driving sustainability and technological progress in its car park network to improve client service and care for the environment.
www.saba.eu

Silver Spring NETWORKS

Silver Spring Networks enables the Internet of Important Things™ by reliably and securely connecting things that matter. Cities, utilities and companies on five continents use the company's cost-effective, high-performance IoT network and data platform to operate more efficiently, get greener and enable innovative services that can improve the lives of millions of people. With more than 24 million devices delivered, Silver Spring provides a proven standards-based platform safeguarded with military grade security. Silver Spring Networks' customers include Baltimore Gas & Electric, CitiPower & Powercor, ComEd, Consolidated Edison, CPS Energy, Florida Power & Light, Pacific Gas & Electric, Pepco Holdings and Singapore Power. Silver Spring has also deployed networks in Smart Cities including Copenhagen, Glasgow, Paris, Providence and Stockholm.
www.ssni.com

thyssenkrupp

Thyssenkrupp Elevator strives to make cities the best places to live, by advancing an industry that moves 1 billion people each day. With sales of €7.5 billion in the 2015/2016 financial year and customers in 150 countries, thyssenkrupp Elevator built its position as one of the world's leading elevator companies from scratch in a mere 40 years' time by applying unique thyssenkrupp engineering capabilities. With more than 50,000 highly skilled employees, the company offers smart and innovative products and services designed to meet customers' individual requirements. The portfolio includes passenger and freight elevators, escalators and moving walkways, passenger boarding bridges, stair and platform lifts as well as tailored service solutions for all products. Over 900 locations around the world provide an extensive sales and service network to guarantee proximity to customers.
www.thyssenkrupp-elevator.com

urbaser

The ACS group (Actividades de Construcción y Servicios) is a worldwide reference in infrastructures, industrial services, energy and environment. Through its environmental company URBASER, it is the leader in waste management and treatment. It specializes in street cleaning, waste removal and transport, urban waste treatment and recycling and comprehensive management of the water cycle, as well as urban landscape and gardening. It also leads the removal and treatment of used mineral oils and industrial waste field. URBASER covers the entire value chain when providing these services, from design and conception to the implementation of the project, operating a highly-qualified professional team. The company also operates in the field of renewable energies with a view to limiting the negative impact of greenhouse gases, and is developing treatment processes for alternative sources of energy, biomass from biomass crops, waste woodland mass, biodegradable agricultural and industrial waste.
www.urbaser.es

Hosted by

Ajuntament de Barcelona

Barcelona, an innovative and digital city, wants to take advantage of new technologies in order to improve citizens' lives, create new jobs and be more sustainable and collaborative. This new strategy considers public digital services as the key to a more equitable city, reducing social and economic inequalities and ensuring the sovereignty of technology and data. Digital Barcelona works in four areas: The city and its challenges; Technology and public innovation; Socio-economic and innovation ecosystems; and The empowerment of citizens. Barcelona goes further than being a Smart City – it is not only about technology, it is about the people.
www.barcelona.cat

Organized by

Fira Barcelona

Fira de Barcelona is one of the leading European trade fair institutions and the Spanish market leader, particularly in trade and industrial shows. It has a portfolio of over 80 shows that vary in frequency, with 30,000 exhibitors, both direct and represented, and it receives two million visitors from over 200 countries. The institution has some 400,000 square meters of exhibition floor space, one of the largest in Europe, spread over two venues: Montjuïc and Gran Via. Fira de Barcelona has established itself as a global event organizer with international positioning, twinned with the unmatchable Barcelona brand, a city with over a century of tradition in organizing big events.
www.firabarcelona.com

5. Exhibition Area

DELEGATES RESTAURANT

SMART CITY PLAZA

ENTRANCE
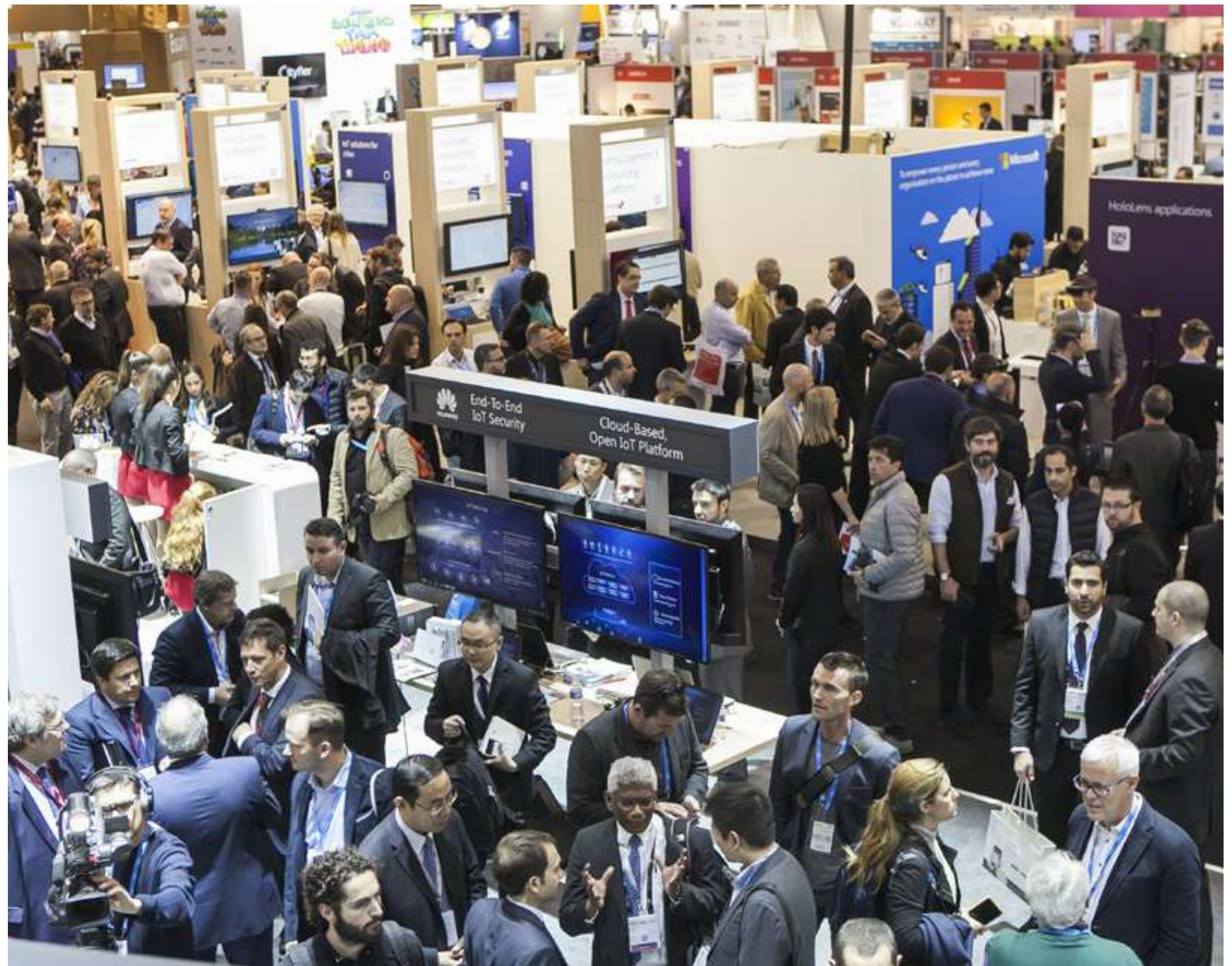
■ Exhibition Area

CONGRESS AREA
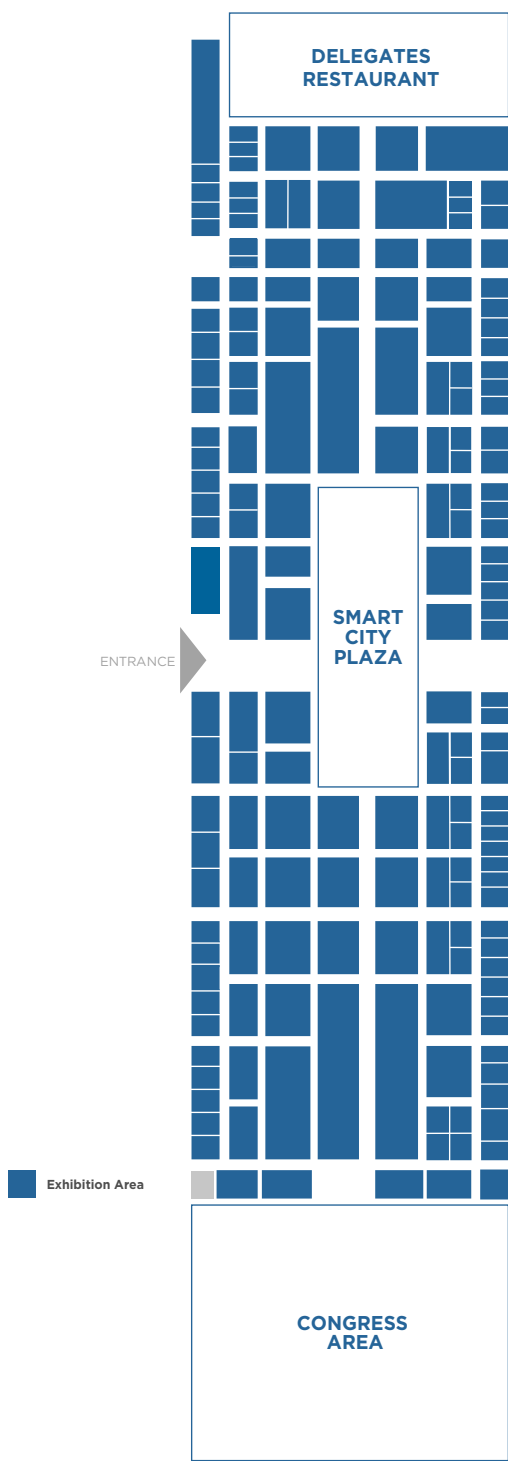
Company
3DEALO
3DEXPERIENCity®
4WARD365
A
A-INSINÖÖRIT RAKENNUTTAMINEN OY
ACCENT SYSTEMS
ACCIONA SMART CITY SERVICES
ACKSTORM
ACTUA
ADD4U
ADEC TECHNOLOGIES
ADINTE
ADOXIO
ADVANCED TELECOMMUNICATIONS RESEARCH INSTITUTE INTERNATIONAL
ADVANTAGE AUSTRIA OFICINA COMERCIAL
AIT AUSTRIAN INSTITUTE OF TECHNOLOGY
ALCYONE INNOVA
ALEXANDRA INSTITUTE
ALTRAN
AMAZON
AMEC URBIS
AMEY
AMIX
ANDALUCÍA SMART CITY CLUSTER
ANHUI PUBLISHING GROUP
ANNET INFORMATION
AOD
AQUAMATIX
ARBORMEDIA
ARCHIMED
ÀREA METROPOLITANA DE BARCELONA
ARELSA
ARMESI AGENZIA PER L'INNOVAZIONE TECNOLOGICA
ARYBALLE TECHNOLOGIES
ATEC T&
ATICSER
ATILZE
ATOS
AUDIOTEC
AUTOMOBILE BARCELONA
AUTOSTRADE TECH
AVANCAR
AVEPOINT
AXIS COMMUNICATIONS
B
BADEN-WÜRTTEMBERG INTERNATIONAL
BARCELONA ACTIVA
BARCELONA BUILDING CONSTRUMAT
BARKING
BAVARIAN PAVILION
BEERIDES
BENITO URBAN
BERLIN PARTNER
BERTSCH ENERGY
BESTMILE
BGEO OPEN GIS
BH TECHNOLOGIES
BIGBELLY
BIONATICS
BISMART
BIT4ID IBÉRICA
BOSCH
BREEZOMETER
BUSINESSOULU
BUSUP
C
CANARIAS EXCELENCIA TECNOLÓGICA
CAPESTER
CAPMAR SISTEMAS DE INFORMACIÓN
CAVEDIGITAL - SMART GOVERNANCE
CC+ TECHNOLOGY
CELLNEX TELECOM

Company
CGI
CHANGCHUN PUBLIC AND MUNICIPAL ADMINISTRATION BUREAU
CHECK POINT
CIGO! BY SPARSITY
CIOT
CISCO
CITCEA
CITIBRAIN
CITIES TODAY
CITILOG
CITIZENLAB
CITY OF AARHUS
CITY OF AMERSFOORT
CITY OF AMSTERDAM
CITY OF BARCELONA
CITY OF COLUMBUS
CITY OF COPENHAGEN
CITY OF DEN HAAG
CITY OF JOENSUU
CITY OF JYVÄSKYLÄ
CITY OF KARLSRUHE ECONOMIC DEVELOPMENT
CITY OF L'HOSPITALET DE LLOBREGAT
CITY OF LOS ANGELES
CITY OF NEW YORK
CITY OF OULU
CITY OF PUNE
CITY OF RAMAT GAN
CITY OF RIVAS VACIAMADRID
CITY OF ROTTERDAM
CITY OF SANT CUGAT
CITY OF TAMPERE
CITY OF TEL AVIV
CITY OF TURKU
CITY OF UTRECHT
CITY OF VALLADOLID
CITYGLOBE
CITYKEYS
CITYMART
CITYNOMADI
CITYNTEL
CITYOPT
CITYZENITH
CIVICITI
CIVICSMART
CLEAN
CLEAR-VU
CLEVERCITI SYSTEMS
CLEVERON
CLICK GROW
CLOU
CLOUDMAS
CLYC
COIT - COL. OFICIAL DE INGENIEROS DE TELECOMUNICACIONES
COMODULE
COMPUTER SOLUTIONS
CONNECTHINGS
CONNECTHINGS IBERICA
CONSYSTTEC
CONTEXTSPACE SOLUTIONS
COPA-DATA
CPROJEKT
CTRL4 ENVIRO
CTTC
CUBIC
CURRENCY ALLIANCE
CURRENT, POWERED BY GE
CUSTOM ELECTRONICS
CYBERJAYA MALAYSIA
CYBERVIEW
D
DANISH OUTDOOR LIVING LAB
DATA SCIENCE INSTITUTE, COLUMBIA UNIVERSITY
DATALONG16

Company
DBT-CEV PIRIS EV
DENMARK
DEPARTMENT FOR INTERNATIONAL TRADE
DEUTSCHE TELEKOM
DFRC
DIGITAL GREENWICH
DIGITAL HAIL
DIGITALTOWN
DIGITILE COM
DIPUTACIÓ DE BARCELONA
DITECH
DOMOTYS
DOXA INNOVA & SMART
DRIVESMART
E
E-BALANCE
E3TCITY
EASY PARK
EASYLUMEN
EASYMILE
EBEE SMART TECHNOLOGIES
ECODISTR-ICT
ECOLINX
ECOOLTRA
ECTP AISBL
ECUBE LABS
EERA JOINT PROGRAM ON SMART CITIES
EIP SMART CITIES & COMMUNITIES
EIT DIGITAL
EIXVERD
EKIONA ILUMINACIÓN SOLAR
ELASTICODE
ELIVISION
ELPARKING
ELT
EMBAJADA DE SUIZA - SWISS BUSINESS HUB
EMOBIKE
EMZ - ENVIRONMENTAL TECHNOLOGY
ENEDIS
ENERHUB
ENERKIA
ENOLL / CREATIVE RING
ENTERPRISE ESTONIA
EPTISA
EQUS
ESMART SYSTEMS
ESPRESSO
ESRI
ETECNIC
EURECAT
EUROCOMMAND
EVAPP
F
F5IT
FACTOR ENERGIA
FAMA SMARTCITY
FCC SERVICIOS CIUDADANOS
FERROVIAL SERVICES
FINDETER
FINLAND
FINPRO
FIREPLAN
FIWARE
FNP - FRENTE NACIONAL DE PREFEITOS
FSM
FSM GROUND SERVICES
FUNDACIÓ I2CAT
FUNDACIÓN METROPOLI
G
GANDISOFT
GE ENERGY JENBACHER
GENERALITAT DE CATALUNYA
GENETEC

Company

GEODANNEXT
GINSA
GIV SOLUTIONS
GLOBAL FARADAY
GOLEM IMS
GOVERNMENT OF MAHARASHTRA
GOVERNMENT OF MEXICO CITY
GMV
GRE LIÈGE
GREEN DIGITAL CHARTER
GREENLED
GREENQ
GRENOBLE-ALPES MÉTROPOLE
GROWSMARTER
GVITECH
H
HABIDATUM.
HAS.TO.BE
HEBEI NORMAL UNIVERSITY
HELIOS
HEMAV
HERE EUROPE
HERZ ENERGIETECHNIK
HEWLETT PACKARD ENTERPRISE
HEXAGON
HHPBERLIN
HITACHI
HITACHI CONSULTING
HOLLAND PAVILION
HOME CONTROL
HONEYWELL
HOP ON (ADOM)
HOPON
HUANGSHAN SCENIC AREA ADMINISTRATIVE COMMITTEE
HUAWEI
HUNGARIAN NATIONAL TRADING HOUSE
I
I.T.C. SAS ITALIAN TECHNOLOGY CENTER DI ELEZIO PERNA
IAD
IAV-AUTOMOTIVE ENGINEERING
ICE AGENCIA ITALIANA PARA EL COMER. EXTE.
ICE GATEWAY
ICEX SPAIN TRADE AND INVESTMENT
ICONICS
ICT GROUP
IDC
IDISC INFORMATION TECHNOLOGIES
IKUSI
IMAGE PROCESSING LABORATORY
IMPERIAL COLLEGE LONDON DATA SCIENCE INSTITUTE
INECO
INITT
INERGY
INNODEP
INNOFACTOR
INNOPLAYLAB
INNOVASJON NORWAY
INNOVATE4CLIMATE
INO-ON
INSTITUT DE RECHERCHE TECHNOLOGIQUE (IRT)
INTELLIGENT SMART IDEAS
INTSAIN CORP
INVEST IN GRENOBLE - ISÈRE
IOMNISCIENT
IOT SOLUTIONS
IOT SOLUTIONS WORLD CONGRESS 2017
IOTSENS
IPGALLERY
IQPAYMENTS
IRECKON
IRLYNX
IS CLEAN AIR ITALIA
ISARSITZE GBR
ISOFTSTONE
ISRAEL EXPORT INSTITUTE
ITRON
J
JETRO
JIFFI
JOOYCAR
K
KAPPO BIKE
KEIHANNA GLOBAL RESEARCH COMPLEX
KERNEL BUSINESS CONSULTING
KLB KÖTZTAL LACKE & BESCHICHTUNGEN
KM4CITY RESOLUTE FIRENZE
KOREA INTERNET & SECURITY AGENCY
KUNAK
KYOTO PREFECTURE
KYOTO SHISAKU NET CORPORATION
L
LAFON
LAHTI REGION DEVELOPMENT LADEC
LEAPCRAFT
LEAPTHOUGHT
LEITAT

Company

LETI CEA TECH
LETSGO CITY
LEUMAX
LIBELIUM
LÍNEA CIUDADANA
LONDON & PARTNERS
LONDON BOROUGH OF CAMDEN
LONGSHINE
LUSAIL CITY
LUXINNOVATION
M
M-PRODUCTS
MAALKA
MAGNUM CAP
MAKE IN INDIA
MALAYSIA GLOBAL INNOVATION AND CREATIVITY CENTER (MAGIC)
MASS FACTORY URBAN ACCESSIBLE MOBILITY
MASTERCARD
MASTODON C
MATRIX MTXM2M
MAYOR OF LONDON
MAZEMAP
MEASURANCE
MENOWATT GE
MER GROUP
MESHCRAFTS
METRICARTS
METRO CONTROL
MEYPAR
MIC SPAIN ETIC
MICROSOFT
MICROSOFT ISRAEL
MINALOGIC
MINISTRY OF HOUSING AND URBAN-RURAL DEVELOPMENT OF CHINA
MITSUBISHI MOTORS
MITSUFUJI CORPORATION
MOBA
MOBI LAB
MOBILE AVENUE SOLUTIONS
MOBILITY INSIGHT
MOBILITY SYSTEMS + SERVICES
MOCA (INNOQUANT)
MOREAPP
MOSAICO DIGITALE
MOSCOW CITY GOVERNMENT
MOTOROLA SOLUTIONS
MOTT MACDONALD
MOVILDATA
MPT-MOBILIDADE E PLANEAMENTO DO TERRITORIO
MR-BUBO
MS.GIS INFORMATIONSSYSTEME
MULTEO
MULTITEL
MYCELIUM NETWORKS
N
NAMOO I&C
NARAN
NARETRENDS
NATIONAL INFORMATION TECHNOLOGY AGENCY (NITDA) - NIGERIA
NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
NAVIA SMART UTILITIES
NEARBY SENSORS
NEC
NEDAP IDENTIFICATION SYSTEMS
NEIKO
NETALIZER
NEUROMEKA
NEW LAB
NEXAR
NEXTBRIDGE
NEXUS GEOGRAPHICS
NFC RING
NOMINET UK
NORDIC EDGE – STAVANGER REGION
NOTIFIKAME
NQUIRINGMINDS
NUMASCALE AS AND NTNU
NXP SEMICONDUCTORS AUSTRIA
NYCEDC
O
OASC, OPEN & AGILE SMART CITIES
OMNIMAP
OPENDATASOFT
OPENTRENDS
OPINUM
OPPORTUNITY PETERBOROUGH
OPTICITS INGENIERÍA URBANA
ORANGE
ORDNANCE SURVEY
OU BAMBOO GROUP
OY FUTURE DIALOG
P
PARK SMART
PARKAM
PARKARE
PARKEON

Company

PARTITALIA
PAYIQ
PBSC URBAN SOLUTIONS
PCENTRA
PEOPLE & TECHNOLOGY
PHARMA SCIENCE
PHILIPS LIGHTING
PIXELWARE
PLACEMETER
PLATIO
PLUSERVICE
POLI PRAGMON
POLO TECNOLOGICO PORDENIONE
POLYCOM
POSTMEDIA
POWEL
PPP FOR CITIES. IESE BUSINESS SCHOOL
PROCHILE
PROSIDE
PTC
PTV GROUP
Q
QUÉBEC
R
RAMBØLL
REACH
REACH-U
RECSHIPPING BY NEKTRIA
REMOURBAN
REPLICATE
RESOURCE SAVING CONSULTANT
RESPONSCITY SOLUTIONS
RIDANGO
ROS ROCA
ROTAS ITALIA
RTSOFT
RUCKUS WIRELESS
RVC
S
SAFER PLACE
SAIJOINX
SAMCLA
SANCHUAN
SAP
SC ACTUAL SMART CITY
SCHNEIDER-ELECTRIC WONDERWARE
SCHRACK TECHNIK
SEAT
SECURITAS SEGURIDAD ESPAÑA
SENSEFIELDS
SENSING & CONTROL
SEONGNAM CITY GOVERNMENT
SEOUL METROPOLITAN GOVERNMENT
SERVA TRANSPORT SYSTEMS
SETIA HARUMAN
SETIA HARUMAN TECHNOLOGY
SHANGHAI SANSI
SHAREWORK
SHARING CITIES
SHOTL
SHOTSPOTTER
SIARQ ADVANCED SOLAR DESIGN
SICASOFT SOLUTIONS
SIEMENS
SILVER SPRING NETWORKS
SIMBIM
SINFONIA
SITO
SKYLANE OPTICS
SMART CITIES INFORMATION SYSTEM (SCIS)
SMART CITIES NYC'17
SMART CITY DIGITAL MANAGEMENT CERTIFICATE – UNIVERSITY OF GENEVA
SMART CITY EXPO CASABLANCA
SMART CITY EXPO LATAM
SMART CITY GLOBAL NETWORK
SMART CITY GRAZ – STADT GRAZ
SMART CITY INSTITUTE HEC LIÈGE
SMART CITY LINK
SMART CITY VALLADOLID Y PALENCIA
SMART DUBAI
SMART GRID SERVICES CLUSTER
SMART ISLAND WORLD CONGRESS
SMART PARKING
SMART SPACE
SMARTAPPCITY
SMARTENCITY
SMARTER TOGETHER
SMARTFLOWER ENERGY TECHNOLOGY
SMARTNODES
SMARTUC
SMARTVEL
SOLIXI
SOOFA
SOPRASTERIA
SOSMART
SOTAVIA

Company

SPACEEK
SPACEHIVE
SPACOSA CORPORATION
SPARK PARKING
SPARKED
 SPREAD
STAR STORAGE
STARLAB
STATE OF GREEN
STATE OF NEW YORK
STREAM TECHNOLOGIES
SUEZ
SUPERCOM
SURIX
SWISS INNOVATION LAB
SYMVARO
SYNAPSE
T
T-SYSTEMS SOUTH AFRICA
TALAIA NETWORKS
TAQTILE
TARRAGONA SMART MEDITERRANEAN CITY FOUND
TDI – TRANS DISPLAY
TECH MAHINDRA
TECHNO BEL
TECNOGEO
TECSIDEL
TEHOMET
TEKES
TELEFÓNICA
TELENSA
TELEPLAN
TELEPORT TECHNOLOGIES
TENERRDIS
TERRASOLID
THALES
THE HUB AT GCT
THE SOCIAL COIN

Company

THINGWORX
TINA VIENNA
TINKERERS LAB
TINYMESH/SERINUS TECHNOLOGY
TINYPOWERS
TNO
TOMTOM
TOY'S MYTH
TRACTO-TECHNIK
TRAFFIKKAGENTEN
TRAFPOINT (SPINOFF FROM BROENTECH SOLUTIONS)
TRIANGULUM
TRIDIUM
TRIGENIA
TRONDHEIM MUNICIPALITY
TSG
TSS TRANSPORT SIMULATION SYSTEMS
TÜV SÜD IMMOWERT
U
UNBLUR
UNIVERSITAT POLITECNICA DE CATALUNYA/UPC TECHNOLOGY CENTER (CIT UPC)
UNIVERSITY OF OULU
UNIVERSITY OF SOUTHERN DENMARK
UPC/ECHORD ++
URBAN INFRASTRUCTURE PARTNER
URBAN SOCIAL TECHNOLOGIES
URBANNEXT
URBAN-X
URBASER
URBIOTICA
US DEPARTMENT OF COMMERCE
US PAVILION
UTRANS
V
V-ICT-OR
VADECITY
VADS LYFE

Company

VALOPAA
VASCO DATA SECURITY
VEOLIA
VIENNA BUSINESS AGENCY
VIENNA CITY ADMINISTRATION ENERGY PLANNING (MA20)
VIONICE
VNG/KING
VORTAL
VOZE
VTT TECHNICAL RESEARCH CENTER OF FINLAND
W
WALKBASE
WALLONIA.BE EXPORT & INVESTMENT
WASTE CONTROL
WEBDOM LABS
WEFFITER
WEGO - WORLD E-GOVERNMENTS ORGANIZATION OF CITIES AND LOCAL GOVERNMENTS
WELLNESS SMART CITIES & SOLUTIONS
WIFI SPARK
WINVISION
WISEKEY
WISEUP
WIZWAY SOLUTIONS
WORLDSENSING
X
XELION
XEROX RESEARCH CENTER EUROPE
Y
YANCHENG CHENGNAN NEW AREA
YITU
YONAPMS
Z
ZAPCHARGER
ZEITMEILEN
ZENCITY
ZTE CORPORATION

6.
Governments

Smart City Expo World Congress was the meeting point for technical and political representatives from more than **600 cities** and **126 countries** in the biggest-ever gathering of municipal authorities in the event's history. They all examined the latest trends in the use of technologies to implement sustainable urban planning and discussed the common challenges they face in future.

More than 50 of them **built their own pavilions** to showcase the latest innovations in the implementation of smart solutions, to promote their local companies and to find funding. City and country delegates also organized a wealth of activities (receptions, workshops, cocktail hours, performances, etc.) at their meeting points throughout the venue as well as presentations for companies through their network, so they could establish significant partnerships and different forms of collaboration with companies and institutions worldwide.

This was a unique opportunity to discover and be inspired by projects such as LinkNYC, a first-of-its-kind communications network that will replace over 7,500 pay phones in New York to provide super-fast, free public WiFi; the Copenhagen Street Lab test area for smart city solutions in real urban space; and the Andorra Living Lab to bring smart solutions to the small Pyrenean nation, to name just a few.

Lastly, it is worth noting the large number of cities from Asia exhibiting at the show, along with the organization of side events such as the China Forum, powered by the Ministry of Housing and Urban Development of the People's Republic of China, which brought together leading players and companies like Huawei and ZTE to analyze the strategies being driven by the Asian giant to implement smart solutions to tackle urban growth in Chinese cities.

56 Cities, Countries and Joint Pavilions exhibiting from all over the world

Andorra	Finland	Québec
Àrea Metropolitana de Barcelona	Graz	Ramat Gan
Austria	Grenoble	Rivas-Vaciamadrid
Baden-Württemberg	Holland	Sant Cugat
Barcelona	Hungary	Seoul
Bayern	Italy	Singapore
Berlin	India	South Korea
Brazil	Israel	Spain
Casablanca	Japan	State of NYC
Catalonia	Karlsruhe	Switzerland
Chile	L'Hospitalet de Llobregat	Tarragona
China	London	Tel Aviv
Clean	Los Angeles	United Kingdom
Cyberjaya	Lusail City	USA
Colombia	Luxembourg	Valladolid
Denmark	New York City	Vienna
Diputació de Barcelona	Norway	Wallonia
Dubai	Palencia	World e-Government Organization
Estonia	Peterborough	

7.
Smart City Plaza

Smart Reality First-Hand

Right at the heart of the exhibition area, we recreated a real smart city designed to showcase ground-breaking solutions and channel innovation. This innovation hub offered all the services of a real city plaza as well as the opportunity to truly experience tangible, smart solutions in real time and as a citizen of the 'city'. It comprised an area with the Smart City Expo World Congress partners' solutions and a business zone especially dedicated to start-ups, so companies could network with potential partners and investors.

Partners' Solutions

Throughout the plaza, a total of 11 top corporations' projects were showcased during the three-day event:

Manhole Opening Detection System
(Cellnex)
A system providing real-time information about manhole or door status.

The Solar HUB, designed by SIARQ
(Cellnex)
A new concept of smart urban furniture, combining street lighting, solar energy micro-generation and support for telecoms and IoT technology.

Motorized Electric Chair
(FCC)
Smart vehicles for people with special needs to get around the Smart City Expo World Congress.

Efficient Waste Management for a Sustainable City
(Fiware)
A smart bin solution with a real-time panel and data from Distrito Telefónica in Madrid. A example of the implementation of the company's Open and Agile Smart Cities Initiative principles.

Intelligent Operation Center
(Huawei)
An impressive array of innovative achievements jointly developed by the company and its partners, related to Cloud Computing, Big Data, Mobility and IoT.

Embedding Digital Payments into the City's DNA
(Mastercard)
Systems to access buses and trains through contactless and mobile ticketing, showing how cities are going cashless and using data analytics for better urban planning.

3D Cities Unlocked
(Microsoft)
An inclusive-designed headset that enables blind people to move freely around the city.

Connected Lighting
(Philips)
Various smart devices, from street lights to power meters to noise sensors and beyond, working together in a connected infrastructure to save energy, streamline operations and improve citizens' lives.

SM!GHT, Smart Infrastructure Solutions
(SAP)
An integrated solution helping to control air pollution, emergency calls and traffic flows, as well as to create a charging network for the latest e-mobility technology.

Making the Most of Urban Data
(Suez)
Scalable digital solutions to help cities, making the most of urban data.

Interactive Machines: Reconverting Street Furniture
(Telefónica – iUrban.es)
Urban infrastructures like phone booths, bus stations or restoration spaces, providing useful information to customers while they charge their devices.

Call for Solutions Winners

The cutting-edge initiatives developed by the start-ups selected in this year's **Call for Solutions** were on display at the core of the event, in the Smart City Plaza. This contest, organized by Smart City Expo World Congress, looks for inspired, impactful and innovative smart city solutions related to at least one of the Congress tracks. The quality of each solution is evaluated according to its innovation, impact and feasibility.

Circle City Scan
(Circle Economy)
A visual roadmap that identifies opportunities to foster a circular economy and aids in the creation of practical and scalable solutions to implement circular systems throughout a city.

Enabling the Internet of Public Things
(Connecthings)
A solution to turn passive physical assets into smart, urban objects able to interact with mobile users, bringing them contextualized, high value-added information via an open BLE beacon (Bluetooth low energy) infrastructure.

Civiciti
(Open Seneca)
A suite of cloud-based citizen engagement and participation tools designed to strengthen digital democracy and enrich the relationship between citizens and their leaders.

Online Participatory Urban Planning dashboard
(TransformCity)
Online participatory urban planning dashboard, integrating storytelling, data, crowdsourcing and crowdfunding.

Smart Biking
(Vadecity)
A solution to provide safe parking, increase the use of bicycles as transport and create order to parking in urban environments.

4YFN Smart City Village

For the second year running, Mobile World Capital Barcelona's start-up business platform 4 Years From Now (4YFN) led the smart tech innovators area, called **4YFN Smart City Village**. A curated selection of start-ups were able to pitch on stage, network with investors, meet government delegations and show off their smart innovations to the huge number of attendees, enhancing the experience of searching for new business opportunities.

Among the actions promoted by the platform was the **second edition of 4YFN Awards Smart City Edition**, which distinguished the start-ups that demonstrated a high-impact mobile solution to enhance citizen well-being.
Winner: **Westmart Park**, a free app to park for half price in Barcelona.

Agora

Selected organizations showcased and presented the most innovative content and case studies on urban innovation to the drop-in audience at a hotspot area in the Smart City Plaza, designed to gain exposure and grow their networks.

The Agora also welcomed diverse activities such as start-up pitches, workshops on different city developments, receptions and even knowledge cafés to learn and discuss new city developments.

Tribute to Jane Jacobs

This year, Smart City Expo World Congress celebrated the 100th anniversary of Jane Jacobs' birth with a **unique exhibition** on the legendary urban activist displayed in the Smart City Plaza, a presentation in the Agora space conducted by the Center for the Living City and Col·lectiu Punt 6, as well as an **unforgettable walk around the vicinity of Fira de Barcelona-Gran Via.** At Smart City Plaza, attendees were able to enjoy the images and videos about one of the key figures in urban planning, who revolutionized the way we look at cities. Jacobs relied on her observations and

common sense to show why certain places work, and what can be done to improve those that do not. This is how the participants on the Jane Jacobs walk were able to experience the city. The activity was based on the experience of **Col·lectiu Punt 6** after organizing **Jane Jacobs walks** since 2011 in the city of Barcelona and its metropolitan area. These walks usually take place the first weekend of May in cities around the world, and are part of the international Jane's Walk movement.

Marketplace

Marketplace was the meeting platform for two hugely popular networking activities: **Job Marketplace**, the recruitment event linking smart talent to companies, and **Brokerage Event**, the ideal opportunity for one-on-one networking.

8.
World Smart City Awards

The **World Smart City Awards** (WSCA) have been established to identify cities, projects and innovative ideas that are nurturing sustainable development in urban areas around the world, thus enhancing quality of life, stimulating creativity, supporting competitiveness, improving efficient management, protecting the environment, promoting shared prosperity and reducing inequality.

Three different category proposals were considered for the competition: The Innovative Global South Award, a new feature this year jointly organized with the General Assembly of Partners for Habitat III; the Project Award; and the City Award. Moreover, an additional Honorary Award gave a special mention to a specific initiative.

After an unprecedented number of entries, totalling **45 countries** and **259 proposals**, the winners were selected by a panel of international judges who considered the innovation, impact and feasibility of the projects, and thus their benefits for cities and citizens.

The winners were announced on 16th November in a ceremony with an innovative format that attracted an audience of more than **1,000 key public and private decision makers**, providing an excellent opportunity to gain prestige and visibility.

Honorary Award

This year, the organization decided to recognize with an Honorary Award the commitment, dedication and exemplary efforts undertaken by the **Ministry of Housing and Urban-Rural Development of People's Republic of China** – which provides housing and regulates the country's state construction activities – in leading the process of transformation towards more sustainable cities in China.

Honorary Award – Ministry of Housing and Urban-Rural Development of People's Republic of China

Innovative Global South Award

This new award this year looks at innovative ideas that address pressing global challenges located in the Global South (Asia, Africa and Latin America).

Finalists:
- ◼ Kabadiwalla Connect for **Kabadiwalla Connect**, an information service that helps citizens handle their recyclable waste responsibly, in Chennai, India.

- ◼ M9 for **Nova Friburgo City as a Platform**, a 'Citizens First' project towards a better and resilient city, in Nova Friburgo, Brazil.

- ◼ Bhubaneswar Municipal Corporation for **Smart City Bhubaneswar**: Achieving Social Equity through New Urbanism in Action, in Bhubaneswar, India.

- ◼ Société d'aménagement Zenata (SAZ) for **ZENATA – Human-scale for a new eco and smart city** in Mohammedia, Morocco.

- ◼ Transparencia Mexicana for **#3de3**, citizens holding governments accountable, in Mexico City, Mexico.

Innovative Global South Award – Finalists

Winner:
- ◼ MicroClinic Technologies for **Transforming healthcare through hospital and clinic digitization and telemedicine**, in Nairobi, Kenya.

MicroClinic Technologies provides a digital health system (HIS) and enables remote consultations and doctor training through video conferencing. The system addresses the poor quality of care, the lack of health experts, the large distances citizens travel to get care and inefficiency in collecting health data.

Innovative Global South Award – Winner – MicroClinic Technologies

Project Award

This award recognizes projects that are already being implemented, and that are benefiting inhabitants in a specific smart city area.

Finalists:

■ Door2Door GmbH for **Demand Responsive Transit: the way to a car-free city**, in Berlin, Germany.

■ The First Affiliated Hospital of Zhengzhou University (FAHZU) for **Extending Quality Medical Resources to Everyone with Henan Provincial Telemedicine System**, in Zhengzhou, China.

■ Corporación Amigos Parques del Río Medellin for **Medellin River Parks Urban Planning Project**, in Medellin, Colombia.

■ Shenyang Big Data Administration for **Smart Shenyang unified platform project**, in Shenyang, China.

■ Sidekick Interactive for **Snow Sidekick, a Mobile App to Help Citizens with Snow Removal**, in Montreal, Canada.

Project Award – Finalists

Winner:

■ Aspern Smart City Research GmbH&Co KG, for **Integrated Energy Research for the future**, in Vienna, Austria.
The Aspern Smart City Research testbed focuses on energy management, smart buildings, smart grids, smart ICT and smart users. It adopts an integrative system approach to optimize energy use, technologies and consumption and to include user participation.

Project Award – Winner –
Aspern Smart City Research GmbH&Co KG

City Award

This award recognizes cities that demonstrate strategies, initiatives and policies that are established and have been developed for their citizens.

Finalists:

■ **Hollands Kroon**, **The Netherlands**, for revolutionizing municipal work with a 100% cloud transformation.

■ **Jiuquan, China**, for a Smart Tourism proposal for a desert area, improving service quality in peak seasons.

■ **Moscow, Russian Federation**, for its City as a Service Platform, a new concept of public services for 12.5 million citizens.

■ **Pune, India**, for Re-imagining Pune to become India's most liveable city, a detailed city profiling project and the largest ever citizen engagement activity in India.

■ **Seoul, Republic of Korea**, for the project 'Seoul, the Global Digital Capital and City of Digital Social Innovation', which empowers citizens to come up with solutions to urban problems by making data publicly available.

City Award – Finalists

Winner:

■ **New York, United States**, for New York City's Strategy for Building a Smart and Equitable City. NYC leverages smart technologies to achieve the goals set forth in Mayor de Blasio's ambitious One NYC plan. The Smart + Equitable City strategy has four tiers: expanding connectivity for all, piloting and scaling smart technologies, growing the innovation economy and ensuring responsible deployments.

City Award – Winner – New York City's Strategy

9.
Side Events

smart city expo
WORLD CONGRESS

Supplementing the main conference official program, nearly 50 industry and theme-specific Side Events diversified the experience for Smart City Expo World Congress attendees and got them to the heart of Smart City issues with educational and actionable sessions.

Side Event Highlights

Austrian Smart City Solutions

ADVANTAGE AUSTRIA, the Austrian Trade Commission in Madrid, organized a presentation on Austrian Smart City Solutions, followed by a networking event where attendees could meet companies, clusters and internationally renowned Austrian institutions. Austrian best practices on Smart Cities were showcased while attendees were able to network with Austrian suppliers related to renewable energies, urban water and waste management, smart homes and smart mobility, as well as information technology systems.

China Forum

China has made the development of smart city technology and projects a key national policy, and now it's difficult to find a Chinese city of any size that does not aspire to be 'smart'. With millions of rural migrants arriving every year and environmental and economic pressures mounting, Chinese cities can surely use all the smart they can get. Organized by the Smart City Expo World Congress and the Ministry of Housing and Urban-Rural Development, the Chinese Academy of Surveying and Mapping Urban Planning, Land & Resources, the Commission of Shenzhen Municipality and the Institute of Geographic Sciences and Natural Resources Research, the China Forum highlighted smart city development in China in recent years,

paying close attention to how information technologies improve people's living environment, how to promote regional economic development, how to enhance the governance of urban society and how to discover the opportunities that follow on from the smart city revolution.

Enhanced Pneumatic Waste Collection

Pneumatic solid waste collection technology has significantly improved over recent years. New smart solutions in the field of PWC have been developed and introduced globally. The seminar 'Enhanced Pneumatic Waste Collection' aimed to increase the awareness of the possibilities of these modern systems. With the claim 'Back to the Future', the event showcased diverse initiatives on improvements and new trends in pneumatic solid waste collection for smart cities and other applications.

GALILEO 4 Mobility

Galileo is the global navigation satellite system (GNSS) that is currently being created by the European Union (EU) through the European Space Agency (ESA) and the European GNSS Agency. With Galileo's initial operational capability scheduled by the end of 2016, this

event introduced the status of the system deployment and its benefits for urban mobility services, through various examples and subsequent discussion by a panel of experts. The session was co-organized by Pildolabs, G-MOTIT and JUPITER H2020 projects, with support from Barcelona City Council – Institut Municipal d'Informàtica, and was complemented with the exhibition of a bicycle equipped with the technology in the Barcelona City Council booth, along with a video of the results of the demonstration.

GSMA Cocktail

This event, hosted by the GSMA, was a unique opportunity to discover new technology that will help make people's lives easier and develop greater citizen engagement in cities. Attendees had the chance to network and share ideas with their peers, including a number of key city decision makers, mayors, industry experts and mobile operators. In addition, there were displays showcasing innovative smart city solutions deployed by mobile operators all over the world.

Hong Kong Forum

Hong Kong is among the cities boasting the highest communication connectivity in the world, with promising development plans in the Smart City field. The Hong Kong Forum at Smart City Expo World Congress offered a unique opportunity to learn about Smart City business development from Hong Kong to China, how to connect utilities and smart cities through innovation and how to penetrate this hugely promising market. The event was hosted by Hong Kong Science & Technology Parks Corporation, which gave an overview of the IoT technologies that can be readily implemented to make Hong Kong a Smart City.

International Smart Cities Cluster and Company Projects

The Agora Space at Smart City Plaza hosted a seminar on the opportunities for International Cluster and Company collaboration through Enterprise Europe Network and the European Cluster Collaboration Platform, which both help SMEs make the most of business opportunities in the EU and beyond. The seminar also explored different Smart City developments and solutions implemented in Milwaukee, Graz, Rio de Janeiro, Mexico, Lebanon, Nice and Barcelona, as

examples of good practices. Attendees could also discuss and find out more about business for territories, building cities of tomorrow and opportunities for urban transformation.

PPP for Cities

PPP for Cities is a research, innovation and advisory center led by IESE Business School that provides support to public administrations throughout the world to develop projects involving collaboration between the public and private sectors in the smart and sustainable cities arena. The first International Conference on Public-Private Partnerships in Cities last year during the Smart City Expo World Congress reached remarkable achievements and became a point of reference for discussion on the subject. This year, the conference focused on governance as a key issue to guarantee PPP projects. Presentations had a special focus on showing how people-first PPPs are strong tools for achieving United Nations Sustainable Development Goals.

Preparing for the future: Workshop for Governments on NYC's IoT Guidelines

New York is committed to being 'better, faster and more equitable'. This workshop for government officials, led by the City of New York and IDC, focused on the practical steps that cities can take to maximize the public benefit derived from the Internet of Things (IoT), while also actively mitigating challenges and risks raised by these new technologies. Guidelines pointed out the need for privacy and transparency, efficient data management and secure, operational and sustainable use of infrastructure and processes.

Smart Specialization Platform on Industrial Modernization

The Smart Specialization Platform on Industrial Modernization (S3P-Industrial Modernization) calls upon the regions that have priorities in their research and innovation strategies for smart specialization (RIS3) related to industrial modernization, to form alliances in joint investment projects to foster the development of new European value chains. The first working meeting in Barcelona, aimed at all committed regions, was an occasion to take stock of the proposals received

through the platform's website and to discuss the way forward. The working meeting should result in the first round of partnerships formally joining the platform as members. At the same time, agreed working arrangements were carried out to prepare partnerships in thematic areas and establish a project investment pipeline, in particular for pilots and demonstrators in the targeted areas.

Smart Water Smart Cities

The We Are Water Foundation, aimed at spreading a new culture of water to enable fair development and sustainable management of water resources in the world, organized the Smart Water Smart Cities conference within the Smart City Expo World Congress. The event focused on the water problem in both cities and tourism destinations, primarily in Mexico, with an emphasis on Latin America and the Caribbean, as a follow up on the discussions at the Smart Water conferences held in Mexico in 2014-15. The conference highlighted best practices and specific cases that have taken place in Latin America and around the world.

The Road towards Smart Cities

Implementing a Smart City is a complex task that requires great leadership and vision, bringing multiple benefits to both leaders and citizens and encouraging public-private cooperation as well as promoting local competitiveness. This panel, organized by the Inter-American Development Bank, discussed how cities are migrating from traditional city management toward Smart City management, and highlighted that 'a Smart City is one that places people at the center of development, incorporates ICT into urban management and uses these elements as tools to stimulate the design of an effective government that includes collaborative planning and citizen participation.'

2016 Huawei Smart City Summit

Huawei held its Smart City Summit within the Smart City Expo World Congress. Discussions included how the rapid developments in ICT technologies facilitate innovation across Smart Cities and unlock unprecedented business opportunities. The event provided an excellent platform for global thought leaders and industry experts from different sectors to share ideas on Smart City industry trends, best practices, innovative technologies and far-sighted thought on the future Smart City.

CIRCULAR ECONOMY
european summit

Innovation Within a Circular Economy

This workshop helped attendees better understand why a linear economy no longer works and why businesses should make the shift soon. Through several hands-on exercises using the Circular Business Model Innovation Map™, participants could analyze the characteristics and advantages of their linear model, redesign their products into a Circular Economy framework and present their innovative solutions before the audience. A step-by-step process to develop circular reasoning to innovate within the company and come up with a new value proposition for customers and partners.

Circulab Business Game

Circulab is a business game created by Wiithaa, a French agency with extensive knowledge in Circular Economy, that helps rethink companies' business models and identify new environmentally friendly opportunities. Introducing a gamified solution to business problems, Circulab helped participants understand the benefits and dynamics of Circular Economy models. The session explained how to focus on customers' needs and identify new synergies, strengthening the role of the company in its territory and its dialogue with other stakeholders. Facilitators from Creafutur, a private non-profit foundation, and consultancy firm Group 381 guided all attendees during the game and answered their pressing questions on how to manage circularity.
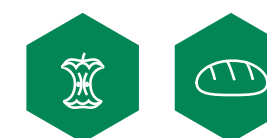
10.
Towards Zero Waste

Smart City Expo World Congress' objective is to work towards creating **efficient, inclusive and sustainable cities**. So the show couldn't be an exception. For the second year running, the event adhered to the **Towards Zero Waste** initiative, aimed at reducing residual waste, saving resources and ensuring maximum sustainability. This year, the **Circular Economy European Summit** joined this initiative, which is in line with the European Commission's Circular Economy strategy based on the use of fewer materials, reuse and recycling of products and no food waste. **These were some of the ways Smart City Expo World Congress and Circular Economy European Summit contributed Towards Zero Waste:**

TOWARDS ZERO WASTE

INCREASE IN WASTE COLLECTION

1486 | 3097 | 1968 | 2456

PREVENTION (KG)   WASTE COLLECTION (KG)

■ 2015   ■ 2016

Paperless

- Introduction of electronic management in procedures for invoicing and subscription for services.
- All the paper used at the stands was collected at the end of the events. **1,776 kg of paper were collected**.
- QR code points were set up at strategic places throughout the events venue for downloading the congress app.
- **28 magazines** related to event topics were also available for download.
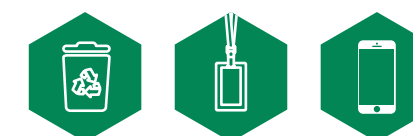
No Food Waste

- Containers for separating the organic waste were available at restaurant centers and temporary dining areas. **680 kg of organic waste** were collected.
- **276 kg of leftover food** were donated to the NGO Nutrition Without Borders, to be distributed and used by community kitchens.

Environmental Awareness

- More than **2,000 menus** were served with compostable utensils.
- Solar panels were installed on the roof of the venue, meaning a large percentage of the energy used by the events came from renewable sources.
- **16,136 m**[2] of carpet from the passageways as well as **1,800 m²** of stand carpeting was reused after the events.
- **2,740 kg** of material from several booths was also reused after the events.
- Other materials, such as plants, were donated to several local associations.

Attendee Involvement

- Attendees could use the recycling bins specifically for paper and packaging located throughout the venue.
- Visitors could also return their IDs at the return point. **1,680 IDs were returned**, saving **25,2 kg** of material.
- Attendees were encouraged to use the app, which was downloaded **2,853** times, helping save **42.8 kg** of paper.

11.
Activities

Networking activities

Brokerage Event

Smart City Expo World Congress organized the third edition of Brokerage Event together with ACCIÓ, the Catalan agency for business competitiveness, and Enterprise Europe Network, which helps SMEs to make the most of business opportunities in the EU and beyond.

This international matchmaking initiative aimed to assist SMEs, start-ups, entrepreneurs, universities, research groups, corporations, institutions and cities in finding international partners for product development, manufacturing and licensing agreements, joint ventures or other types of partnership.

This third edition brought together more than 470 participants (58% from abroad) from 38 countries, who convened for 30-minute pre-scheduled meetings in a room specially designed for networking, to meet potential cooperation partners, establish connections and create bridges to undertake future projects. During the three-day event, 1,264 meetings were arranged.

Participants also had the opportunity to meet EUREKA experts during the event. EUREKA is a bottom-up (no predefined topics), close-to-market network of more than 40 countries that can finance your smart city international and innovative project.

Job Marketplace

This recruitment space was organized by Smart City Expo World Congress and Barcelona Activa, the area of Barcelona City Council focused on generating employment. It created the ideal platform for smart city professionals looking for job opportunities in the sector, as it put companies from the Smart City sector in touch with potential employees pre-selected by Barcelona Activa. During the interviews, companies such as Bismart, Biwell, Motto, Nubelo, PriceSoft and Suez had the opportunity to select the profiles that best fit the requirements of their vacant positions.

SynergyS

The SynergyS activity, organized by Barcelona Activa, aimed to link together major corporations, SMEs and start-ups looking for immediate new means of collaboration during the event.

Leading companies presented a series of challenges with a view to finding the most innovative solutions from SMEs and start-ups. At the end of the presentations, everyone participating in the activity moved to the networking area to present their solutions to the companies, share information and generate professional opportunities. This dynamic activity provided the perfect setting to prove what medium-sized and small companies or start-ups can offer to major players as well as an opportunity to learn about the current challenges that companies within the sector are facing.

Smart City Party

The Smart City Party brought together numerous congress attendees to continue networking in a more relaxed atmosphere, where they could enjoy an innovative performance powered by Fiware Technologies, namely CROMA. It was a unique visual spectacle in which a dancer interacted with screen projections and the attendees in real time.

Mobility activities

Electric Mobility Test

A service providing sustainable mobility in cities. Mobike presented their own electric bike units (eMobike electric bicycle) and units from their collaborators, featuring an electric car (TESLA MODEL S P85 + Green), a ZERO FXS electric motorcycle, an electric tricycle (TUNKERS) and a scooter (BUNKERS). They all demonstrated that electric vehicles are a comfortable, smooth, sustainable and environmentally friendly means of transport in cities.

EZ10

EZ10 is a 100% electric and autonomous vehicle. It is a last mile driverless transport solution that can carry up to 12 people (6 seats and 6 standing positions), and it is also accessible for people with disabilities thanks to its access ramp. The EZ10, developed by EasyMile, a joint venture between Ligier Group and Robosoft Technology, moves autonomously combining a hybrid of three different location technologies: GPS tracking system, visual guidance and SLAM technology. It is designed to cover short and predefined routes and requires no infrastructure at all. The potential applications are infinite: city centers, airports, amusement parks, hospitals, university campuses or even industrial sites. Smart City Expo World Congress gave attendees the opportunity to try this cutting-edge transport solution during the event.

Torrot test: Electric Vehicles

Torrot gave attendees an unique opportunity to find out more about electric vehicles and test them. The company brought the CitySurfer bicycle – designed to literally surf the city – to Smart City Expo World Congress, as well as MUVI, the first lightweight electric scooter designed to for hassle-free travel. Attendees could test them both during the three-day event.

12.
Smart City Expo Abroad

Smart Events Throughout the Year

Smart Innovation Throughout the Year

After six editions, Smart City Expo World Congress has become cemented as the world's leading event linking urban reality and technological revolution. Due to the success of this model, a great number of cities have shown interest in holding spin-offs of the event: replicas on another scale within their area of influence.

These spin-offs are completely focused on local needs, which is why they complement and create fascinating synergies with the worldwide event held in Barcelona.

In 2016, Smart City Expo was held in Puebla (Mexico), Casablanca (Morocco), Istanbul (Turkey) and Kyoto (Japan).

smart city expo
PUEBLA

Smart City Expo Puebla 2016 – Urban Innovation towards Equitable Cities

The first ever **Smart City Expo Puebla** positioned Mexico as the Latin American capital of smart cities. Over three days, more than 10,000 attendees, 200 speakers and 120 companies and exhibitors addressed the challenges currently being faced by major cities, with a specific focus on the needs and idiosyncrasies of those in Latin America, such as how to achieve sustainable territories, a participatory and **equitable society** and how to develop territorial planning and mobility, technology for smart management and digital entrepreneurship for economic development.

smart city expo
CASABLANCA

Smart City Expo Casablanca 2016 – Open, Innovative and Inclusive Cities

The first edition of **Smart City Expo Casablanca in Morocco** marked a decisive step for Casablanca towards the goal of integrating itself into the prize list of Smart Cities worldwide, as well as providing a way for the city to affirm its aim of overcoming the major challenges it is facing. More than 5,000 visitors and over 80 world-renowned speakers from 47 cities participated in insightful sessions and talks about sustainability and resilience, mobility and urban planning, collaborative cities and citizen engagement, as well as technology and green development.

smart city expo
ISTANBUL

Smart City Expo Istanbul 2016 – Cities in Motion

The first **Smart City Expo Istanbul** targeted **mobility and urban innovation** as key issues and challenges for South-eastern Europe. The Turkish capital city was not only a backdrop for the event, but also a prime example of the specific problems that cities in the region are facing, stressing the importance of a connected society. Along with these two main issues, over 4,500 attendees and nearly 120 speakers suggested solutions for challenges such as energy, smart society, entrepreneurship and economic development as well as big data and urban management.

smart city expo
KYOTO

Smart City Expo Kyoto 2016 – Regions and industries creating a sustainable and liveable future

The third edition of **Smart City Expo Kyoto** not only celebrated a further increase on attendees in 2016, it also stood out for its exhibition of products and technologies related to the health sector and the field of ICT. The hugely popular three-day event attracted visitors from 28 countries to address the smart city challenges facing Asia. Thanks to the continued success of the event, the city of Kyoto was able to sign valuable agreements with major businesses with the objective of promoting smart cities. The city has expressed its desire to repeat the Smart City Expo in 2017, as it firmly believes in the importance of the trade fair in resolving regional issues and bringing together companies and the local governments.

13.
Congress

There is no way around it. Cities are the engines of economic growth, hubs for talent and innovation, learning laboratories for individual and collective creativity to tackle the most pressing problems, to achieve advanced social progress and to improve citizens' lives. And it is the citizens who must be at the center of this process. Future cities are those that are created not just for them, but with them.

Smart City Expo World Congress 2016 wanted to continue the great debates about the future of cities and encourage discussion among participants in the industry in a more thorough manner, echoing concerns and recommendations based on the outcomes.

With a full program of **70 sessions** structured into seven tracks – Governance, Economy, Society, Sustainability, Mobility, Data & Technology and Safety – the 2016 edition of the conference attracted **6,083 delegates** (23% more than in 2015) and focused on designing strategies for citizen empowerment and the democratic

participation of people in developing their cities. More than **420 speakers**, all leading experts in their fields, shared the latest thinking on sustainable and efficient city development and suggested ground-breaking solutions to transform our cities for the better. The general sentiment was that innovation should be used as a means for social transformation to advance all sectors of society, regenerating people's wealth.

Regeneration of economy and ecology, as well as the role of the industry in this process, was one of the main themes addressed at the **Circular Economy European Summit**, which was turned into a full three-day congress running in parallel to the Smart City Expo World Congress. With a full program of **20 sessions**, prominent speakers pointed out that moving to a more sustainable, resource-efficient economy means reinventing production, rethinking how we consume products, and redefining how we reuse and recycle. There's still a long way to go... and fertile ground for more discussion.

Tracks
Generating synergies with the issues that matter

Governance
#cityempowerment #performancemeasurement #righttothecity
How can new technological developments assist local authorities in crafting more accountable and participatory governance systems? How can capacity building for urban governance be accelerated?

Economy
#financingmodels #socialeconomy #publicprivatepeoplepartnerships
How can city leaders redirect policies to catalyze economic development, reduce inequalities and promote progress for all? What are the business models making it possible to revolutionize the way cities work and engage with citizens?

Mobility
#sustainablemobility #Intelligenttransportsystems #electricvehicles
How can innovations around low carbon, intelligent transport systems and better infrastructure management help satisfy citizen's quality of life? In what ways can we overcome the social, economic and physical constraints of movement in cities?

Society
#co-creation #education #equity #liveablecities #socialInnovation
How can collaboration be promoted to enable various kinds of collective action that have a significant impact on urban development? How can cities be transformed into Co-Cities, i.e. Collaborative Cities, contributing to a higher quality of life?

Sustainability
#alternativeresources #climatechange #resilience
How can sustainable urban development goals be achieved? What governance structures and financing mechanisms are needed to support the effective implementation of these goals?

Data & Technology
#bigdata #cloud #internetofthings #peertopeer
To what extent can the enhanced use of data by cities help improve services, inform local decision making and engage citizens? How can the tensions between Open Data, and Privacy and Security be balanced?

Safety
#publicsafety #cybersecurity #dataprotection #datamanagement
How can governments enjoy the benefits of Big Data while respecting privacy and security? How can we make our cities a safer place to live in?

Circular Economy
#recycle #wastemanagement #reuse
A circular economy is one that is restorative and regenerative by design. How can we catalyze the transition towards the creation of urban circular systems that regenerate economy, ecology and personal wealth?

CIRCULAR ECONOMY european summit

Opening Remarks
Cities for Citizens, Citizens Changing Cities

15/11/2016 9:30-10:15

MODERATOR
Jerry MacArthur Hultin / President Emeritus – Polytechnic Institute of New York University - New York - USA

SPEAKERS
Gerardo Pisarello / First Deputy Mayor - Barcelona City Council - Spain
Rajesh Agrawal / Deputy Mayor for Business - City of London - United Kingdom
Gila Gamliel / Minister for Social Equality - Government of Israel - Jerusalem - Israel
Jiangbo Ni / Deputy Director General - Ministry of Housing and Urban-Rural Development, Government of the People's Republic of China - Beijing - China

The smart city concept has been around for quite a few years and is constantly evolving. As Gerardo Pisarello put it, smart cities were originally approached from a purely technological perspective. Yet today, the concept embraces a much broader vision that puts innovation at the service of citizens. It can promote the city's ecosystem by allowing bottom-up innovation and improving public service to create policies of collective interest.

Gila Gamliel followed up by stressing that digitization of cities should be used to improve quality of life without leaving anyone behind. She advocated for using technology for social transformation and pointed out that today 'geographic distance is no longer an excuse for inequality'.

Rajesh Agrawal discussed the contributions of immigrants in London's technological and cultural economies, and echoed Gamliel by saying that technology is a social equalizer as it empowers people to challenge others. He also suggested that local governments should open up all the data they collect to entrepreneurs and companies so they can help solve the city's unique issues.

'Everyone should be able to claim their right to the city... We make the city and it makes us.'

Gerardo Pisarello

Finally, Jiangbo Ni spoke about the effects of rapid urbanization and the challenges posed by a huge population moving from rural areas to cities that are not completely ready to welcome it. These cities are reaching out to collaborate and find sustainable solutions with an impact to create change. He concluded that it is up to them to decide on their priorities and how they will engage citizens to be part of that design.

Keynote

Ellen MacArthur: The Fundamental Role of Cities in Catalyzing Transition to Circular Economy

16/11/2016 10:00-10:30

SPEAKER:
Ellen MacArthur / Founder - Ellen MacArthur Foundation - Isle of Wight - UK
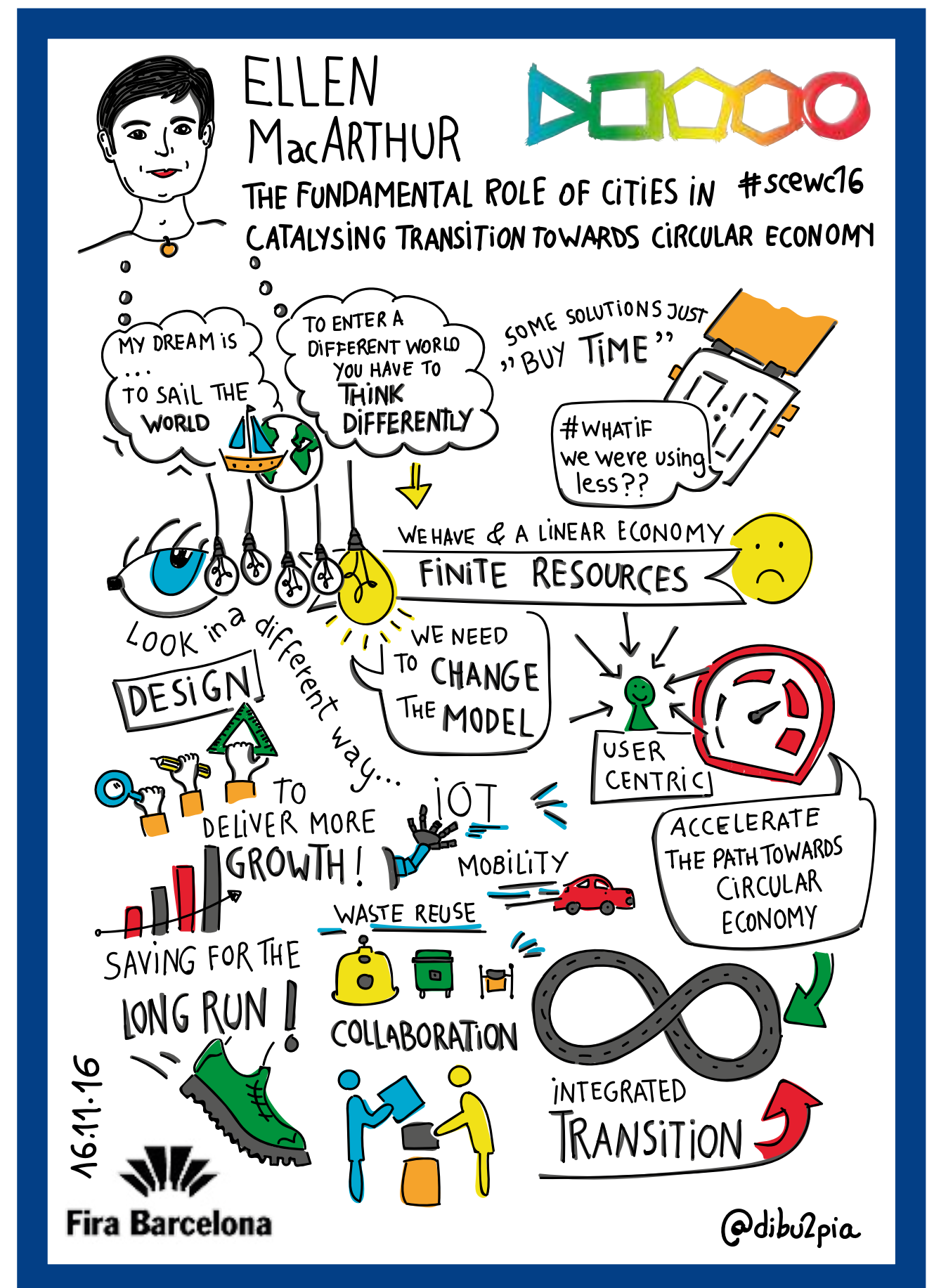
INTRODUCED BY:
Roy Vercoulen / Co-Founder and Co-CEO - CircularIQ - Amsterdam – Netherlands

Ellen MacArthur divided her talk into three main subjects: the journey that led her to discover Circular Economy, what Circular Economy is itself and how it relates to cities. She explained how she got hooked on sailing: she dreamt of sailing around the world and was able to make that dream come true in the Vendée Globe. During that journey, she learned about the true meaning of finite resources. For 100 days, all that she was able to use was whatever she had on the boat. That experience taught her a lesson: she realized the definition of the word finite and that the current economic model cannot run in the long term.

'Cities hold a massive opportunity for circularity.'

As a result, MacArthur started learning about economy, components and materials. She also got to know people who were envisaging a regenerative and restorative system. It was not about using less, but instead about rethinking today's linear 'take, make, dispose' economic model. She then decided to set up the Ellen MacArthur Foundation to make the transition away from this model. MacArthur followed up with the *Growth Within report*, which focused in particular on the massive opportunity the Circular Economy provides for cities. The digital revolution holds a €900-billion opportunity for European cities. This figure could even reach €1.8 trillion if implemented with a circular lens. Some sectors, such as mobility and food, are especially wasteful and offer great potential for systemic change. MacArthur gave some examples such as light fittings in Schiphol Airport (Amsterdam) or the system to recover biological material food waste in Milan. She concluded by stating that now more than ever is the time when we can see the circular revolution in cities.

Keynote
Parag Khanna: Why do we need more connected cities?

16/11/2016 16:45-17:15

SPEAKER:
Parag Khanna / Geo-strategic advisor and best-selling author - Singapore

INTRODUCED BY:
Tom Dallessio / President, CEO and Publisher - Next City - Philadelphia - USA

The Pearl River Delta is a vast area where Hong Kong and Guangzhou are found. It is home to 75 million people, who live there amidst a densely-constructed infrastructure. This is an example of what Parag Khanna calls Functional Geography, which considers the degree of connectivity on top of the traditional layer of natural and political geography. As Khanna put, connectivity, which refers to physical connection such as transport, energy and communication, is a critical element that forms the power of a city. 'We take it for granted but we don't have enough of it,' said the expert. In fact, many cities are collaborating with each other to establish shared infrastructures, and Singapore, Malaysia and Indonesia, for example, are forming Singapore-Malaysia-Indonesia Growth Triangle. Khanna stressed out the importance of acknowledging that in the coming 25 years, there will be a significant increase of connectivity between cities in Eurasia region. 'We can grow more than the single political units we inhabit,' he said.

However, at the same time, the geo-strategic advisor pointed out the potential threat for dividing the connected and the disconnected city. The sharing economy rests on people being connected physically or digitally. Since connectivity plays such an important role, the gap between the connected and the disconnected could cause significant inequality within a region. Despite there being four times more debt than worldwide GDP, the issue of scarce infrastructure has not yet been solved. 'Cities for Citizens' has to mean connected cities for citizens, he concluded.

'Connectivity is truly the most revolutionary force of the 21st century.'

Keynote
Susan Etlinger: Artificial Intelligence in the Digital City

17/11/2016 11:10-11:40

SPEAKER:
Susan Etlinger / Industry analyst – Altimeter Group – San Francisco – USA

INTRODUCED BY:
Esteve Almirall / Director of Center for Innovation in Cities - ESADE Business & Law School - Barcelona - Spain

Susan Etlinger shared her perspective on how Artificial Intelligence (AI) can be applied to urban development as well as the relevant risks it conveys. There has been increased interest in studying and developing AI technologies since 2015. The huge amount of data available, inexpensive parallel computing and improved algorithms are believed to be contributing to this trend. Today, AI can see, communicate, gesture, learn, reason and interact. It makes it possible to recognize images, detect emotions, be a virtual assistant or chatbot, provide virtual medicine, drive autonomously and even more. Without learning and reasoning, what we have is processing, said Susan Etlinger. The expert stressed that, despite the fact it is not yet perfectly developed, AI will be able to perform many more tasks in the future with proper training data.

What happens when cities can also learn and reason in incorporating AI? Susan Etlinger envisioned several possibilities in terms of infrastructures and systems and services. Buildings could be healthier, and roads could send signals when repairs were required. Systems and services could be smarter by personalizing medicine, building safer streets and cities, and providing solutions. However, we simply cannot ignore the possible risks arising from AI. Personalization can lead to profiling and bias, and data proliferation can put vulnerable people at risk. Etlinger also underscored the gap between the data rich and the data poor and talked about the difference between what is sufficient and what is right. Food for thought. She ended by emphasizing that we need 'new methodologies and new guidelines to ensure ethical and efficient use of data'.

'Fundamentally, we are at a critical turning point in terms of how we think about data.'

Keynote
David Bollier: The City as a Commons

17/11/2016 16:30-17:00

SPEAKER:
David Bollier / Blogger at Bollier.org - Cofounder, Commons Strategies Group - Amherst - USA

INTRODUCED BY:
Marco Berlinguer / Researcher of Internet and Commons at Institut de Govern i Polítiques Públiques - Universitat Autònoma de Barcelona - Barcelona - Spain

Commons is arguably the oldest system in human history for managing shared wealth. Yet, it is often misunderstood because of this whole idea of the 'Tragedy of the Commons', which occurs when individuals neglect the well-being of society in the pursuit of personal gain. David Bollier pointed out that Commons is chiefly a system in which people cooperate to manage shared wealth in sustainable ways. One of the greatest problems of our time, he said, is the idea that marketizing something will improve the ecosystem or the social life. That is what Bollier called market enclosures, or the privatization of shared wealth. When it comes to the city, enclosure occurs through global speculation in urban real estate, the over-commercialization of public spaces or the control of public data. In this scenario, the expert stressed the need to 'treat vital urban resources as shareable common wealth', and thus to start recognizing that 'Commons generate value'.

Creative Commons licenses are an example of that, said Bollier. The blogger highlighted that cities need to tap into regional economy and focus on bottom-up participation. However, this implies a different way of governing and managing, thus cultivating citizen-led innovation. In this sense, Bollier highlighted the efforts Barcelona is doing to develop the city as a Commons, with more than 1,300 commons-based collaborative projects. Bollier ended up his talk by stressing that cities can be incubators to develop new sorts of solutions to systemic problems.

'Barcelona is the leader of many efforts developing the city as a Commons.'

Plenary Sessions
Improving Governance Models for Steering Urban Development

15/11/2016 10:15-11:15

CHAIR:
Tom Dallessio / President, CEO and Publisher - Next City - Philadelphia -USA

SPEAKERS:
Luis Carlos Cueto / General Coordinator - Madrid City Council - Spain
Kok Yam Tan / Head of Smart Nation program Office - Prime Minister's Office - Singapore
Wu Dongsheng / Vice President, Enterprise Business Group - ZTE Corporation - Beijing - China
Mitchell Kosny / Interim Director and Professor of the School of Urban and Regional Planning - Ryerson University - Toronto - Canada
Toni Townes-Whitley / CVP Worldwide Public Sector - Microsoft Corporation - Redmond - USA

How can new technologies assist local authorities in crafting more accountable and participatory governance systems? Luis Carlos Cueto began the session by challenging the urban development concept and highlighting that progress cannot be achieved with inequalities. Madrid City Council's vision is to give the city back to its citizens, he stated. Kok Yam Tan emphasized the need to democratize innovation and highlighted citizens' engagement as a key driver to achieve this. He also mentioned the Skills Future Initiative developed in Singapore to encourage people to invest in their future skills, so they can continue to be relevant to the economy as technology moves forward.

'Engagement of people is the key'.
Kok Yam Tan

During his turn, Wu Dongsheng explained how ZTE Corporation has created technical innovative architectures to help local governments improve urban planning. Successful examples include Citizen Card in Yinchuan and Smart City App in Shenyang, both in China. Mitchell Kosny insisted that for a city government to be effective, planners have the duty of 'daring to plan', thus taking challenges and risks and making decisions with the participation of citizens.

Toni Townes-Whitley followed up by stressing that smarter cities are based upon courageous leadership. In conclusion, speakers agreed that digital revolution is moving very fast, and therefore everyone needs to commit to a plan. Lastly, all the speakers contributed to suggest an intense agenda: setting the vision, listening deeply, considering reliable patterns and taking risks. Tom Dallessio ended the session by recalling that 'failure to plan is not an acceptable solution' and encouraging the audience to make 'big plans'.

Plenary Sessions
Entrenching Sustainability and Resilience Principles: Shaping the Future of Cities

15/11/2016 15:15-16:15

CHAIR:
Mike Lake / President & CEO - Leading Cities - Boston - USA

SPEAKERS:
Aisha Bin Bishr / Director General - Smart Dubai Office - Dubai - UAE
Dan Lewis / Chief of the Urban Risk Reduction Unit - UN-Habitat - Nairobi -Kenya
Oscar Pallarols / Innovation & Product Strategy Director - Cellnex Telecom - Barcelona - Spain
Kent Larson / Director, City Science Initiative and Changing Places Research Group - MIT Media Lab - Boston - USA
Carlos J. Menendez / President Enterprise Partnerships - Mastercard - London - UK

Rapid urbanization, along with climate change, is presenting new challenges as well as opportunities for cities around the world, from density and city efficiency to equity issues. The speakers shared various experiences from their work in several cities along with the results of sustainability- and resilience-driven approaches aimed at improving the livelihoods of citizens. Aisha Bin Bishr shared a general overview of the people-centered approach on sustainability in the context of Dubai, emphasizing the urgency of cross-sector collaboration among stakeholders to protect natural resources and secure the future of citizens.

Similarly, Carlos J. Menendez followed up explaining that while technology is the driving force behind smart cities, having a human focus is still equally significant. Kent Larson spoke about the benefits of working at community scale, explaining that a healthy high-functioning city is a network of strong neighborhoods.

Oscar Pallarols highlighted the role digital innovations like virtual reality and 5G have to play in transforming

city data into information that can be acted upon, while stressing the need to be familiar with the ontology of the city. Dan Lewis weighed in on the nexus between urbanization and resilience, and shared some methodological insight on how cities can measure their progress regarding resiliency and sustainability.

Lastly, Mike Lake closed the session, reminding attendees not to forget social equity and the human-centric purpose of smart cities while implementing technological solutions that increase efficiency of city processes and services.

'Today we can do more by investing less, only if we collaborate together.'
Aisha Bin Bishr

Plenary Sessions
Addressing Emerging Challenges of Sustainable Urban Development

15/11/2016 17:15-18:15

CHAIR:
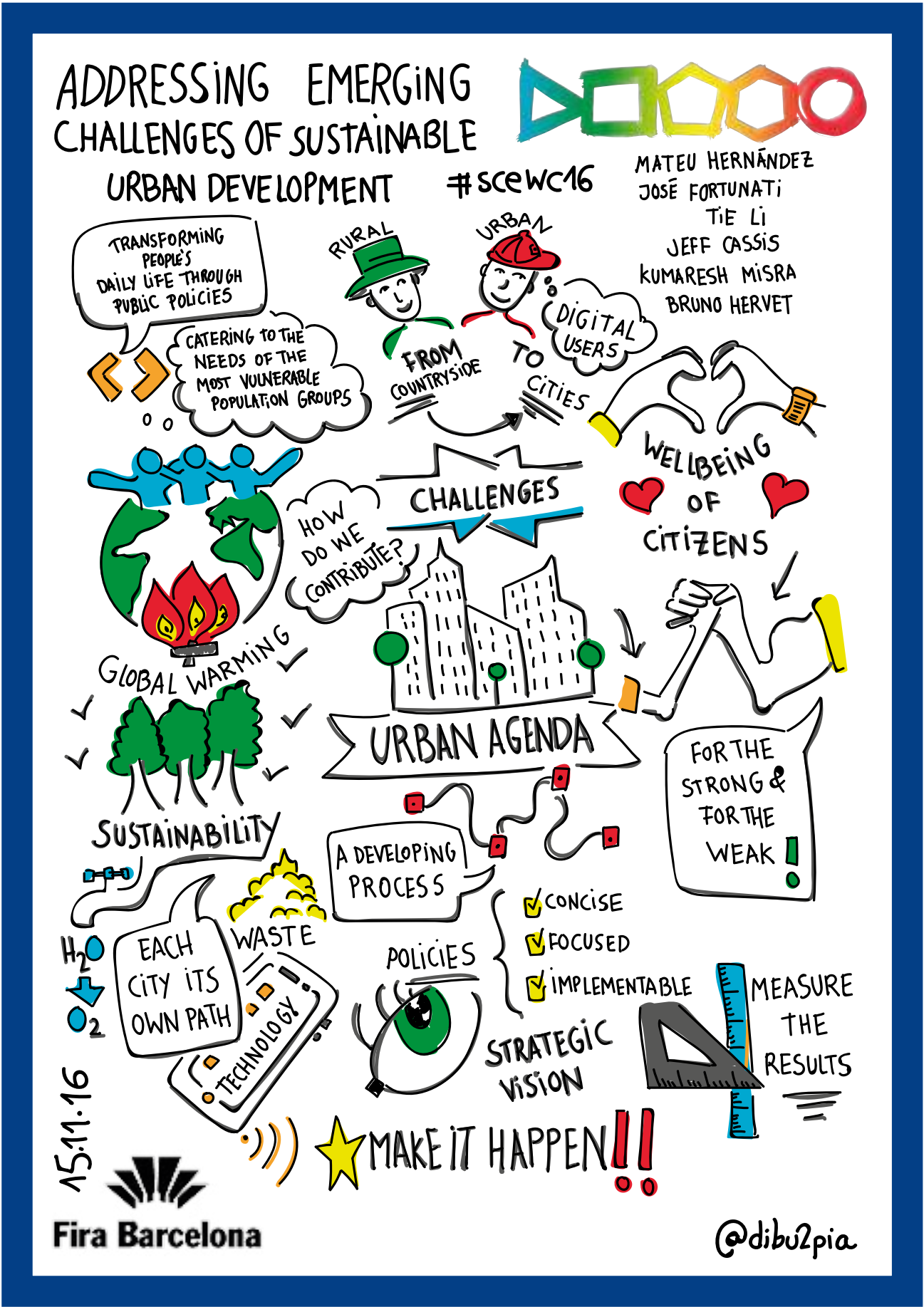**Mateu Hernández** / CEO - Barcelona Global - Barcelona - Spain

SPEAKERS:
José Fortunati / Mayor - Porto Alegre City Council - Brazil
Tie Li / Chairman & Chief Economist - China Center for Urban Development (CCUD) - Beijing - China
Jeff Cassis / Senior Vice President, Head of Government Business - Philips Lighting - Eindhoven - Netherlands
Kumaresh Misra / Deputy-Secretary-General Habitat III Conference - United Nations - New York – USA
Bruno Hervet / Executive Vice President Smart & Resourceful Cities - Suez - Paris - France

Urbanization is accelerating at a swift pace, creating new pressure points on city resources and infrastructure. How can sustainable urban development goals be achieved then? Panelists discussed various challenges and diverse mechanisms that are needed to support effective implementation of sustainable urban agendas. José Fortunati asserted that sustainable policies must always cater to the needs of the most vulnerable population groups, and he underscored the challenges he was facing as mayor to direct funds for this purpose. Tie Li spoke about the issue of rural farmers migrating to urban areas and the consequence this has on the economy and the livelihoods of people. Smart technology has the potential to offset such challenges, however. Similarly, Jeff Cassis touched on the ability of cities to save funds by integrating smarter and more long-term cost-efficient solutions such as better city lighting technology, thereby providing savings to invest in other priority areas.

'We have the vision. Yet, how to implement it is the real challenge.'
Kumaresh Misra

Kumaresh Misra followed up by speaking on the outcomes of the Habitat III conference held in Quito (Ecuador) in October 2016. One main takeaway was the urgency to proactively solve issues relating to informal settlements, from a holistic approach and with a wide array of stakeholders. Finally, Bruno Hervet elaborated on ways infrastructures or service provision, for example water and waste collection, can be used to create equity among citizens. Moreover, transversal solutions can be used to understand and balance flows within a city's ecosystem. Mateu Hernández closed the session by stressing that 'there is no single solution for cities', yet in evolving towards 'smartness', they have to make sure no one gets left behind.

Plenary Sessions
Towards More Inclusive, Safe and Healthy Cities

16/11/2016 10:30-11:30

CHAIR:
Boyd Cohen / Director of Research; Professor of Entrepreneurship & Sustainability - EADA Business School - Barcelona - Spain

SPEAKERS:
José Antonio Gali / Governor of Puebla - Mexico
Brenna Berman / CIO - City of Chicago - USA
Bernhard Steiger / Director of Government and Public Safety Industry Solution Sales - Huawei Enterprise Western Europe - Munich - Germany
Hakima Fasly / Vice Mayor - City of Casablanca - Morocco
Rosalía Simón / Smart Cities Director - Telefónica IOT - Madrid - Spain

How can smart cities support the transition to inclusive, safer and healthy cities? José Antonio Gali emphasized that cities need to use technology to cater for more social necessities, so that smartness is distributed where needed. Brenna Berman pointed out that in Chicago, the focus on smart cities is all about connection to offer better services to residents. However, this requires an extensive amount of engagement and education about smart cities solutions and IoT. In this sense, the city has been developing several community engagement initiatives to meet residents' expectations. During his turn, Bernhard Steiger underscored the fact that technology providers need to be aware of the outcome of their products on people's lives. Similarly, public projects, which are typically top-down, should provide citizens the benefits they are looking for, such as security and privacy. Otherwise, their added value is limited, maintained Steiger.

Hakima Fasly followed up by underlining that Morocco's government has adopted legislation on advanced regionalization to meet the needs and concerns of citizens. She then pointed to the importance of environment, a constitutional right in Morocco. Finally, Rosalía Simón highlighted that inclusion has to do with interoperability, and made clear that Telefónica is very active in trying to standardize smart cities. She also underscored the need to involve local companies in smart cities projects and to respect privacy and security. Boyd Cohen closed the session by stating that smart city stakeholders sometimes need to be creative and frugal to make disruption possible.

'Without security, there is no real life in cities.'
Bernhard Steiger

Plenary Sessions
Collaborative Partnerships to Achieve Common Urban Goals

16/11/2016 17:15-18:15

CHAIR:
Alice Charles / Lead, Urban Development Global Leadership Fellow - World Economic Forum - Geneva - Switzerland

SPEAKERS:
Mohd Irwan Serigar Abdullah / Secretary General of Ministry of Finance - Government of Malaysia - Putrajaya - Malaysia
Anil Menon / Global President, Smart+Connected Communities - Cisco - Orlando - USA
Charbel Aoun / Member of the Board - Future Cities Catapult - London - UK
Juanjo Hierro / Chief Technology Officer - FIWARE Foundation - Madrid - Spain

Alice Charles introduced the session by reminding the audience that today cities are facing numerous challenges, often elusive, such as the demand and supply gap in the provision of urban services and infrastructures, increasing social polarization, crime and unplanned development. What is the role of governments in tackling these issues? Mohd Irwan Serigar Abdullah stated that governments have to change fast and 'facilitate and not frustrate' initiatives. There should be a balance between the people's economy and the capital economy, he explained. Anil Menon followed up stressing the importance of maintaining cities' souls. He acknowledged governments and the private sector have to work together, but in true collaboration. He also highlighted the need to involve labor unions in the process.

Yet, Charbel Aoun admitted that today's collaboration is not good enough because it usually materializes in the form of top-down initiatives. By contrast, collaborative partnership is a much more bottom-up approach. During his turn, Juanjo Hierro pointed out that the lack of standardization prevents solutions from being portable, which has a direct impact on

the smart cities market. Hierro acknowledged that standardization is not too difficult to achieve, but consensus among stakeholders is needed.

'Successful partnership is achieved by the commitment to the relationship.'
Anil Menon

This is an important issue when thinking about different political life cycles. In this sense, Menon underscored that the smart city space is not clearly defined, so it is crucial to choose customers carefully, considering political will, global standards, smart regulations and true public-private partnership. In this regard, panelists agreed that building successful relationships requires creating win-win structures.

Plenary Sessions
Data for Urban and Social Transformation

17/11/2016 11:40-12:55

CHAIR:
Stephen Goldsmith / Professor - Harvard Kennedy School of Government - Cambridge - USA

SPEAKERS:
Miguel Gamiño / CTO - City of New York - USA
Martin Powell / Head of Urban Development - Siemens Center of Competence Cities - London - UK
Andrew Collinge / Smart City Lead and Assistant Director - Intelligence and Analysis - Greater London Authority - UK
Sean Patrick O'Brien / DGM & Head IVE For SAP Public Services & Healthcare - SAP - Andiran - France
Iñigo Jodra / Center of Excellence for Cities Director - Ferrovial Services - Madrid - Spain

Data is the opportunity to get better services for citizens. Panelists agreed that a data-driven management approach can represent a quantum leap in terms of efficiency and citizen experience. Yet there are some issues to be tackled, such as security and privacy.

Andrew Collinge stressed that it is really important to have a 'coherent and mature approach' on how data is managed. Martin Powell added it is all about 'spending more time thinking how to change things rather than spending time thinking what data we are talking about'. Still, that shift is accelerating, he said. In this sense, Collinge brought up his particular 80-20 rule: 20% is an issue with technology, whereas 80% is a matter of culture, capacity and cooperation between organizations. And this is a real mind-changing form.

This is about a new participatory economy in the city, said Collinge. In this sense, Miguel Gamiño gave the example of a business portal in San Francisco that is accelerating the business licensing and economic growth in the city by making easier for people to do so thanks to data. Iñigo Jodra underlined the need to develop a collaborative work between the public and private sector and stressed that making the legal framework evolve to enable data-driven management is still a challenge. Yet, as Miguel Gamiño explained, 'pervasive connectivity is going to lead to a way of life that none of us are capable of predicting at this moment'. The winds are changing quickly.

'*Connectivity is the civilization changer.*'
Miguel Gamiño

Plenary Sessions

Rethinking Mobility Patterns to Build More Liveable Cities

17/11/2016 13:00-14:00

CHAIR:
Ayman Smadi / Director of the Middle East and North Africa (MENA) - UITP and Center for Transport Excellence - Dubai - UAE

SPEAKERS:
Carlos Moreno / The Mayor of Paris' Special Envoy for Smart Cities - City of Paris - France
Frans-Anton Vermast / Senior Strategy Advisor Low Carbon and Connected Urban Planning at Amsterdam Smart City - Netherlands
Robert Cervero / Professor and chair of city & regional planning - University of California, Berkeley - Lafayette - USA
Christopher Tromans / Head of Technology Partnership - Amazon AWS EMEAPS - Luxembourg
Alfonso García / Director of Technical Services - FCC - Madrid - Spain

Mobility is one of the most significant issues in cities, as it defines the relationship with the territory. Therefore, it not only requires a long- and middle-term vision, but also concrete actions, as Carlos Moreno put it. The expert said that Paris aims to become a low-carbon city in accordance with COP21 agreements and through different policies: restricting cars in the city, the importance of multi-modal mobility, pedestrians retaking the city and the development of new workplaces in the city. These all represent a change in paradigm he called 'the quarter-of-an-hour city', where residents can access basic services within 15 minutes. Frans-Anton Vermast reminded the audience that data will be the new fuel for urban development. Keeping this in mind, Amsterdam collaborates with different data partners to improve the search for parking spaces and to develop mobility as a service.
Robert Cervero followed up by stating that liveable cities are walkable cities and insisting that technology, such as smart shuttles, can be used to get very efficient forms of mobility. During his turn, Tromans

'Barcelona is a compact city and this is why people walk more.'
Robert Cervero

said that close collaboration is key in cities. He added that the analysis of data combined with people feedback allows powerful changes to make cities more liveable. Finally, Alfonso Garcia considered that energy consumption must be urgently reduced and that governments should make resolutions that incentive the use of electric cars. Society is changing and millennials are opening up tremendous opportunities, concluded Cervero.

Inspirational Talk
Kent Larson: Towards Entrepreneurial, High-Performance, Liveable Cities

15/11/2016 12:45-13:15

SPEAKER:
Kent Larson / Director, City Science Initiative and Changing Places Research Group - MIT Media Lab - Boston - USA

INTRODUCED BY:
Christopher Swope / Managing Editor - Citiscope - Washington DC - USA

Kent Larson gave an update of some of his work on at the MIT Media Lab and shared the outcome of three main projects on cities and innovation bringing evidence-based design, simulation tools, new ways of moving people and new ways of creating work environments. He particularly focused on CityScope, Persuasive Electric Vehicle (PEV) and CityHome project.

CityScope is a real-time, data-driven urban simulation for decision making and community engagement that makes it possible to visualize different parameters such as diversity and density to encourage exchange of ideas. Larson considered these to be critical metrics in designing cities. The expert followed up by sharing his thoughts on alternative mobility modes with the audience. The Persuasive Electric Vehicle that the MIT Media Lab designed is a 'driverless bike-like Uber system', in his own words. They prototyped it in Andorra a few months before the Smart City Expo World Congress. Larson also highlighted that the big advantage of autonomous vehicles is that they could mean the end of parking spaces, as well as reduce the total trip time for the individual.

He then moved on to the CityHome project, which aims to address density and affordability as cities where young people want to live and work are becoming out of reach. He showed that having architecture robotics in an apartment doesn't have to be scary, as it can make space more functional. The expert ended up his presentation by stressing that cities should be designed for people, not machines.

'The three key parameters that enable innovation are density, proximity and diversity.'

Inspirational Talk
David Harvey: Right to the City

15/11/2016 18.15-18:45

SPEAKER:
David Harvey / Distinguished Professor of Anthropology and Geography - Graduate Center of the City University of New York (CUNY) - New York - USA

INTRODUCED BY:
Joan Subirats / Faculty Member - Institut de Govern i Polítiques Públiques - Universitat Autònoma de Barcelona - Barcelona - Spain

David Harvey initiated his talk by elaborating on the concept of the Right to the City, a demand that comes from the street. The professor emphasized that the most massive movements around the world over the past 20 years have been mostly concentrated in cities. Many of those movements are, in one way or another, about discontented citizens trying to address the quality of daily life in the city. For example, in 2013, about a million people in Brazil took the streets to protest about the quality of urban life and how public resources were used for purposes that were not of a public concern for them.

He then went on to state that the Right to the City is being exercised by capital, that is, cities are being built to absorb investments and surplus capital and resulting in meaningless forms of urbanization. Hence, capital is accumulating in cities in a very fast rate and remaking cities in its own image, but not making cities that are liveable. In New York, for instance, there is a building boom for the ultra-rich, along with 60,000 homeless people. The Right to the City is about those 60,000 people, plus anyone who doesn't have a decent house and a decent housing environment, to get together and say 'we want to change this city', insisted Harvey. The professor concluded that we should start to rethink what the real problem is and to listen to the voice from the streets.

'There are ways to reconstruct democratic action.'

Dialogue Session
Cities Leading the World of Tomorrow

15/11/2016 15-17:00

MODERATOR:
Tom Dallessio / President, CEO and Publisher - Next City - Philadelphia - USA

SPEAKERS:
Andrew Morlet / Chief Executive - Ellen MacArthur Foundation - Cowes - UK
Federico Gutiérrez / Mayor - Municipality of Medellin - Colombia
Antoinette Guhl / Deputy Mayor in Charge of the Social and Solidarity Economy - Paris City Council - France

'We have digital possibilities that we've never had before.'
Andrew Morlet

Cities are where most of the global challenges are playing out, and therefore they need to act as leaders in devising a better future for the world. This panel aimed to show how cities can better answer the needs of both society and the environment.
From his experience as a political outsider elected through a civil movement, Federico Gutiérrez emphasized the role of civic society and how local governments should work in partnership with them to understand the needs of the population and invest in the right places. Furthermore, he stressed the importance of continuity regardless of political leanings and added that governments should prioritize the social map over the political one.

Antoinette Guhl stated that 'the priorities of cities may be different but the challenges are the same', and described how Paris has been responding to three of these challenges: environmental issues, refugee crises and the need for inclusion. Andrew Morlet spoke specifically on how cities, which are mass aggregators of materials, can transition to a circular economy and provide cities a way to turn waste into 'opportunities for new source of wealth'. As Tom Dallesio observed, this 'moves us beyond net zero, so that our goal is not zero but better than zero'. The session concluded with a discussion on how cities can put forward the new urban agenda by engaging citizens and different organizations, and how this can be instigated by data.

Dialogue Session
The Future of Urban Mobility

15/11/2016 18:15-19:00

MODERATOR:
Antonella Broglia / TEDx Ambassador - Consultant at Infonomia - Madrid - Spain

SPEAKERS:
Luca De Meo / President - SEAT - Barcelona - Spain
Carlo Ratti / Director - MIT SENSEable City Lab - Boston - USA

Carlo Ratti began his talk by quoting The Little Prince and recalling that the future is what we build every day by the choices we make. Today, self-driving mobility is a reality. The technology is there, but it can drive us to hell or to heaven, he said. Self-driving cars make it possible to share mobility and to have a much more efficient city. However, travelling a self-driving car could end up being much cheaper than taking public transport, and this would lead to gridlock everywhere in our cities, he pointed out. Luca De Meo stressed the opportunities that autonomous cars are bringing to the sector. Nonetheless, he acknowledged there are still 'many things to learn' relating to the adaptation of infrastructures, safety issues or more ethical questions such as the use of customers' data. Brands will need to adapt. Ratti added that the car will become something very exciting, like part of the user's home where many things can be done. In addition, the streets and different urban elements will need to adjust to this situation, as 'the way we perform the city might change'.

As for electric cars, Luca De Meo pointed to the cost of batteries as an important brake for their popularization. Yet the overall outlook of electric cars remains positive, especially considering the European milestones in achieving CO_2 emissions targets and the decreasing price of solar power. In the end, both speakers underlined the need for the advantages and benefits of these new technologies to be spread in an equitable way.

> **'We have to make sure that automation generates value and that it rewards everyone in society.'**
> *Carlo Ratti*

Round Table Session
Cities at the Forefront of Refugee Integration

16/11/2016 14:15-15:15

MODERATOR:
Kilian Kleinschmidt / Advisor to the German Government - Founder of Switxboard - IPA Switxboard - Vienna - Austria

SPEAKERS:
Nesreen Barwari / Former minister of Reconstruction in Iraq and Associate Professor at the Department of Spatial Planning - University of Duhok - Duhok - Iraq
Thomas Fabian / Deputy mayor - City of Leipzig - Germany
Geoffrey Hamilton / Chief of the PPP Program - United Nations Economic Commission for Europe (UNECE) - Geneva - Switzerland

There are 21 million refugees and 40 million displaced people in the world. Yet these figures are just the tip of the iceberg of many more people on the move because of exploitation, poverty or climate change. Over 90% of them are ending up in cities. The panelists agreed that the response to this cannot be just humanitarian, however. Nesreen Bawari explained how Dohuk (Iraq), a city of 250,000 inhabitants, is dealing with 750,000 newcomers. She explained that despite all the services the international community can contribute, there is much more that needs to be done to help the hosting community 'sustain the shock'. She also stressed that, despite initial prejudices, displaced people have added culture and human capital, although they need additional resources. From a European perspective, Thomas Fabian followed up by stating that refugees need 'integration from the very first day', and that requires continuous communication with local neighborhoods and cooperation between administrations, NGOs and local society. Hence, city leaders need to think beyond the emergency situation.

Geoffrey Hamilton highlighted the concept of inclusiveness and sustainability and put forward the need to think of a new paradigm including public-private partnership. In this sense, he cited the Obama program to get the private sector to help refugees. Fabian commented that 'integration is achieved when people do not depend on social benefit any more'. There are IT solutions such as crowdsourcing and crowdfunding that could help. Bawari concluded that 'we need to create opportunities instead of just looking at camps as a need'. Kilian Kleinschmidt ended up the session by stressing that a change of paradigm is needed to move away from thinking that the refugee issue is just a humanitarian matter.

'The world is one, we are all together and connectivity is our chance to survive.'
Kilian Kleinschmidt

Round Table Session
A New Deal on Data: What Role for Cities?

17/11/2016 17:00-17:45

MODERATOR:
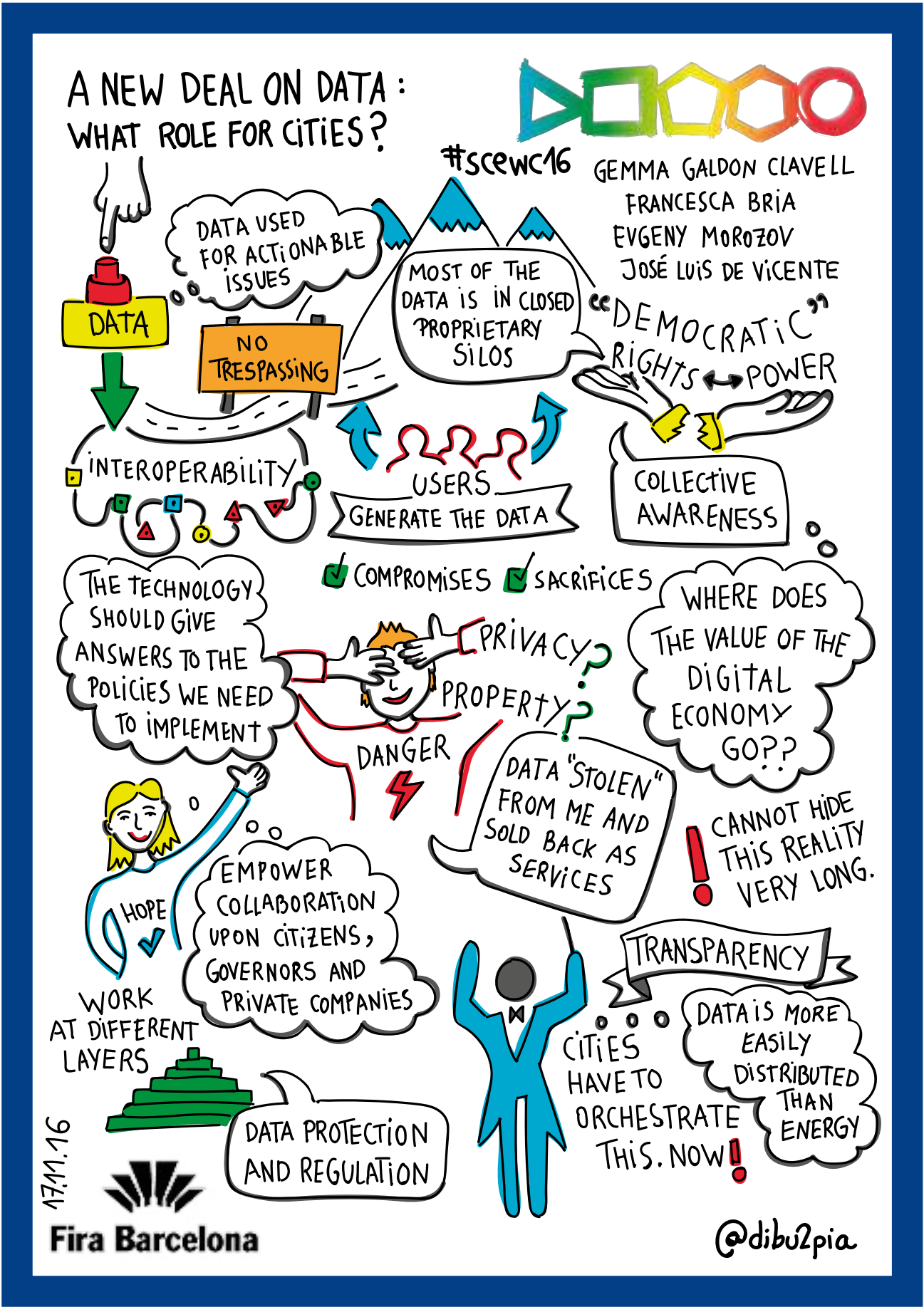**Gemma Galdon** / Director - Eticas research and Consulting - Barcelona - Spain

SPEAKERS:
Francesca Bria / Chief Technology and Digital Innovation Officer - Barcelona City Council - Spain
Evgeny Morozov / Researcher and author of the Net Delusion: The Dark Side of Internet Freedom - Barcelona - Spain
José Luis De Vicente / Curator specialized in digital culture, art and technology - Sónar+D - Barcelona - Spain

Gemma Galdon started off the session by stating that there is a great deal of enthusiasm about data and its contribution to better cities and improved democracy. Yet, the use of technology can also lock citizens in corporate silos or make them experience data despotism, she added. José Luis de Vicente followed up by underlining that there are still silos of knowledge that are locked in different places owned by municipalities. He also advocated for a new pact around the relationship between cities, governments and data. Francesca Bria moved on to broaden the subject and talked about rights, democratic systems and ultimately power. Barcelona's CTO added that values embedded in technology are a matter of long-term choices since they are related to the economic model. In this sense, she underscored that on-demand and sharing economy platforms are built on the possibilities that data connectivity is giving to citizens, although they bring up new problems. Next, Evgeny Morozov went back to the original concept of 'The New Deal' and commented on the role digital economy and particularly big ICT firms have played in the amount of inequalities that

'Most services that seem to be free are not, since we are paying for them with our personal information.'
Evgeny Morozov

currently exist. 'It is essential that we trace where the value of the digital economy comes from,' he insisted. Neither totally private nor totally public ownership of data will work, according to this expert – the issue is more complex than that. Francesca Bria acknowledged that there is a lot of discontent and much more can be done for inclusiveness. Yet cities cannot do it alone, she concluded.

Parallel Sessions
Proactive City Data Governance

⚪ **Governance**

15/11/2016 11:30-12:30

MODERATOR:
Mathias Reddman / Policy and Project Officer, DG CONNECT - European Commission - Brussels - Belgium

SPEAKERS:
Andrew Collinge / Smart City Lead and Assistant Director, Intelligence and Analysis - Greater London Authority - UK
Ruthbea Yesner Clarke / Research Director, Smart Cities - IDC - Boston - USA
Yukimasa Otani / Director General - Kobe City - Japan
Eddie Copeland / Director, Innovation Lab - Nesta - London - UK
Chen-Yu Lee / Director - Taipei Smart City PMO - Taipei City Government - Taiwan

From traffic flow and energy consumption to waste production and air quality, city governments are now able to collect and access an increasing number of data that help them to make better decisions. Data and new digital technologies can in fact really help cities deliver smarter, more responsive and more efficient public services, as Mathias Reddman pointed out to start off the session. Andrew Collinge followed up by explaining how London is dealing with city data governance. 'We basically try to keep it simple and related to outcomes,' he pointed out. Yet there are some barriers to overcome. The first and foremost is extracting the value from the overwhelming amount of data produced in the city while protecting personal and sensitive information, he highlighted.

Ruthbea Yesner Clarke recalled 'all great changes are preceded by chaos', as city leaders must think about Smart City deployments from physical infrastructure and devices to the worker. However, she emphasized the need for cities to think about data architecture and data strategy to overcome the risks associated with connected information and data growth. Yukimasa Otani and Chen-Yu Lee explained their experiences in using city data in Kobe (Japan) and Taipei (Taiwan), respectively. Lastly, Eddie Copeland stressed the importance of solving widespread public dissatisfaction with services supply by involving citizens into city decision making using data analytics and new digital technologies. Finally, all the speakers stressed the need for more cooperation among public institutions, the private sector and individuals in order to make data a useful tool for a smarter city.

'The promise of Smart Cities rests on data.'
Ruthbea Yesner Clarke

Parallel Sessions
Smart Regions & Communities Addressing Urban Challenges

⚪ **Governance**

15/11/2016 12:45-13:45

MODERATOR:
Jaime Medina Maestro / Innovation Manager - Ametic - Madrid - Spain

SPEAKERS:
Daniel Marco / Director of Smart Catalonia - Government of Catalonia - Barcelona - Spain
Pierre Maillot / Senior Technological Advisor - Bosch - San Francisco - USA
Giuseppe Mantero / Managing Director - Linea Comune Firenze - Italy
Alberto Donaire / System Analyst and Project Manager - Consortium Fernando de los Ríos - Granada - Spain
Graham Colclough / Partner - UrbanDNA - London - UK

More than half of the world's population lives in urban areas today, and the number is expected to increase, putting pressure on cities' resources, mobility and the environment, among others. How can smart initiatives on a regional scale overcome these challenges? Daniel Marco presented the initiatives that the Catalan region has implemented with regards to city-to-city mobility and stressed the key role of digital platforms in connecting people, local governments and companies. Giuseppe Mantero showcased Tuscany's regional initiatives in Italy and underlined the importance of understanding what services citizens require both in bigger and smaller cities across the region.

Along with Pierre Maillot, he also underlined that cities need collaboration with the private sector to improve their mobility, healthcare and environment. On the other hand, regional communities face the pressing challenge of the digital divide between big cities and small towns and villages across the region. In this regard, Alberto Donaire shared his experience regarding smart regional initiatives developed in Spain's Andalusia region, where most population still live in rural areas. Finally, Graham Colclough concluded that 'a gap is widening between the big and the small places' and asked for more collaboration within the region as well as larger and smarter investments in small and medium-size cities. For Colclough, a possible solution would be the European Innovation Partnership for Smart Cities, which fosters a collaborative marketplace where opportunities are beginning to emerge.

'Being a smart country is a way to develop our economy.'
Daniel Marco

Parallel Sessions
Implementing the New Urban Agenda

○ **Governance**

15/11/2016 14:00-15:00

MODERATOR:
Tom Dallessio / President, CEO and Publisher - Next City - Philadelphia - USA

SPEAKERS:
Kumaresh Misra / Deputy-Secretary-General Habitat III Conference - United Nations - New York - USA
Costly Chanza / Director of Town Planning and Estates Services - Blantyre City Council - Malawi
Edgardo Bilsky / Director of Research - United Cities and Local Governments - Barcelona - Spain
Nicholas You / Director, Global Partners and programs - Guangzhou Institute for Urban Innovation - Nairobi - Kenya
Sri Husnaini Sofjan / Senior program Administrator & Strategist - Huairou Commission – Women, Homes & Community - Brooklyn, New York City - USA

'If we really want to leave no one behind, we need to implement the new Urban Agenda.'
Kumaresh Misra

The New Urban Agenda is the outcome document agreed on at the Habitat III cities conference in Quito, Ecuador, in October 2016. It will guide the efforts surrounding urbanization for a wide range of actors for the next 20 years. Kumaresh Misra started off the session by stressing that the world has actually become 'a global city'. Informal settlements and poverty have increased too, however. Focus must therefore be put on education to help the most fragile sectors. Costly Chanza criticized the New Urban Agenda as potentially being too fragmented

and highly specific. In the opinion of this expert, the document needs to be an inspirational vision to guide local and regional governments. Edgardo Bilsky followed up by underscoring that 'it is not possible to stop urbanization', and therefore authorities need to focus on how to transform financing mechanisms to drive social equity. Everyone should make a commitment based on equity and inclusion. This idea is summarized in the Right to the City concept, which should be included in subsequent New Urban Agendas. Nicholas You insisted that a different kind of city has to be developed, such as one that could be entrepreneurial as well as inclusive. All stakeholders would need to come into play, and local authorities should seek cooperation with national institutions to add regional and territorial singularities as strengths. Finally, Sri Husnaini Sofjan emphasized the gender responsive perspective of the New Urban Agenda. Tom Dallessio closed the session with a simple message: 'The implementation of the New Urban Agenda is up to you.'

Parallel Sessions
Open Innovation and Crowdsourcing Enabling Urban Development

○ **Governance**

16/11/2016 11:45-12:45

MODERATOR:
Esteve Almirall / Director of the Center for Innovation in Cities - ESADE Business & Law School - Barcelona - Spain

SPEAKERS:
Young-sook Nam / Secretary General - WeGO - Seoul - South Korea
Catalina Aguilar Oropeza / General Manager - Consejo Ciudadano de Seguridad y Justicia - Puebla - Mexico
Fiario Hernández de la Rosa / Office Manager - Secretaria de Innovación Digital y Comunicaciones - Puebla - Mexico
Chris Gourlay / Founder & CEO - Spacehive - London - UK
Steven Fifita / Executive Director - City Digital, UI LABS - Chicago - USA

What is the role of open innovation and crowdsourcing in city development and how is it possible to implement these concepts in daily urban operations? According to Young-sook Nam, 'open innovation is a primary paradigm for building smart cities'. Organizing partnerships in the form of a quadruple helix and providing open access to data contributes to the creation of innovation, she added. Seoul was described as a case study of a city currently implementing crowdsourcing policies and opening its data to citizens and companies. Promoting citizen participation is crucial for local government in Puebla, stated Catalina Aguilar Oropeza. There, local authorities use WhatsApp as a tool for communication and have created a platform to collect citizen petitions. As Fiario Hernandez de la Rosa put, 'smart doesn't have to be just technology', but a way of communicating with citizens to understand their needs. Chris Gourlay elaborated on funding, which is a big problem for cities, as there are few business models. Technology may allow for civic crowdfunding

'Open Innovation is a missing link between technology and people and has the potential to make cities fully smart.'
Young-sook Nam

processes, however. Steven Fifita focused on the necessity of building cross-sectoral collaboration to deliver innovation and new business models for cities, as well as unique combinations of technologies and processes. Panelists concluded that the integration of various urban actors may facilitate open innovation in cities.

Parallel Sessions
Benchmarking City Performance: Indicators, Metrics, Standards
○ Governance

16/11/2016 13:00-14:00

MODERATOR:
Manu Fernández / Founder - Ciudades a Escala Humana - Getxo - Spain

SPEAKERS:
Jennifer Belissent / Principal analyst - Forrester Research - Levallois-Perret - France
Marek Banczyk / CEO - Cityglobe Inc. - New York - USA
Marlyn Zelkowitz / Director of Future Cities & IoT - SAP - Washington, DC - USA
Jean-Marc Seigneur / Smart City Digital Management Director - University of Geneva - Carouge – Switzerland
Paul Wilson / Smart City Trusted Advisor - TM Forum - Bristol - UK

An important aspect in reporting the success of global cities over long timeframes is the commitment to evaluate the quality and cost of the services provided. To achieve this, cities need standardized metrics to benchmark their performance in all urban dimensions. How, then, can decision makers in cities assess sectoral performance or the impact of ongoing projects to improve services and quality of life for citizens? Jennifer Belissent spoke about the importance of having strong data leadership within cities to foster the data-driven capabilities of organizations. Marek Banczyk questioned whether national economic systems could determine the performance of economies. In measuring the performance of cities, Banczyk explained that the focus should not be on the flows of capital or other asset-related matrices, but rather purely on the performance measured by processing aggregation and exchanging information. Marlyn Zelkowitz elaborated more on four different pillars of sustainability that were closely interlinked with ISO standards and that cities could use as performance indicators, for example Society, Economy, Environment and Security and Safety. To achieve these, cities need to break down silos and get people to work together. Jean-Marc Seigneur pointed out that quantitative online reputation is a good way to see which cities are excelling the most at implementing smart city initiatives. Finally, Paul Wilson presented a comprehensive online app in which different smart city-related standards are integrated for city managers to benchmark their performance.

'The need for collaboration among cities on sorting indicators is very real.'
Paul Wilson

Parallel Sessions
Intelligent Platforms to Promote Open Data and Service Management
○ Governance

16/11/2016 14:15-15:15

MODERATOR:
Katalin Gallyas / Founder & CEO - Civic Tech Amsterdam - Amsterdam - Netherlands

SPEAKERS:
Concepción Gamarra / Mayor - Logroño City Council - Logroño - Spain
Arvind Satyam / Managing Director, S+CC Business Development - Cisco - San Francisco -USA
Wesam Lootah / CEO - Smart Dubai Government - Dubai - UAE
Kathryn Willson / Director, Microsoft CityNext - Microsoft, Worldwide Public Sector - Redmond - USA

The idea of opening up data to improve public services has already spread to major cities' authorities all around the world. However, one big question remains unanswered: how can this be done in an intelligent way? While witnessing a continuously growing collection of useful information, how can we make sure the shared part of this collection will actually generate value for society, in addition to maintaining high security and privacy standards? In order to give that question its critical importance, Kathryn Willson brought up an estimate from McKinsey: there are roughly $3 trillion dollars in value to society to be unlocked from public data sets up to 2025. Panelists agreed that building up a centralized platform for all public services is the way to go. However, both Arvind Satyam and Wesam Lootah admitted that breaking down the silos in public administration is much easier said than done. Successful examples are abundant in Copenhagen, Dubrovnik and Zagreb, in areas such as air quality, transport and security. Wesam Lootah, who pointed out that data is the fuel for Dubai transformation, and Concepción Gamarra showed that their cities are especially committed to the subject. Rather than having technology as an end, both focus on giving the city back to the citizens. Kathryn Willson ended up the session by insisting that open government data is crucial to improve education, healthcare, transport and electricity, among other areas.

'Without managing data, we are not making real and smart changes.'
Arvind Satyam

Parallel Sessions
Public-Private-People Partnerships and New Forms of Collaboration

○ **Governance**

16/11/2016 15:30-16:30

MODERATOR:
Miquel Rodriguez / Manager - PPP for Cities, Public-Private Sector Research Center - IESE - Barcelona - Spain

SPEAKERS:
Paul Copping / Smart Cities Advisor - Digital Greenwich - Royal Borough of Greenwich - London - United Kingdom
Almudena del Rosal / Deputy Director General of Corporate Engagement - Madrid City Council - Madrid - Spain
Ricardo López de Haro / Regional Director - Ferrovial - Madrid - Spain
Craig Driver / VP, Public Private Partnerships - Mastercard - New York - USA
Fernando Rayón / Business Innovation Manager - Suez Spain - Barcelona - Spain
Isaac Martín / General Director - ICEX – Madrid - Spain

'We have to adopt a shift where citizens are decision makers.'
Ricardo López de Haro

The 21st century is the century of cities, as Miquel Rodríguez stressed to start off the session. Yet, as urbanization is rapidly growing, cities face pressing challenges that require new strategies and solutions. Public-private-people partnerships (P4) is a process framework that puts people as a major stakeholder for implementing PPP schemes, thus embracing bottom-up participative strategies and making public engagement clearly visible. Almudena del Rosal opened the session by stressing that with PPPP frameworks decision-making power can deviate from policy makers, who traditionally hold the ultimate decision-making authority, towards citizens through proactive engagement. Ricardo López de Haro followed up by demystifying the common confusion between PPP and privatization. He pointed out that rather than discussing the model, city leaders should concentrate on the outcomes for society. Craig Driver showed how Mastercard is using payment data to improve urban planning. During his turn, Fernando Rayón spoke about Sity, an innovative acceleration program that supports entrepreneurs who want there to be a better quality of life in cities. Isaac Martín mentioned that Spain is a country with a great array of smart city initiatives developed by companies that have adopted a citizen-centered approach. He also pointed at collaboration as a key enabler for the smart evolution of urban areas and pointed out that some results can only be seen in the long term. Finally, Paul Copping presented Digital Greenwich and emphasized the need for collaborative development.

Parallel Sessions
The Public Sector's Open and Agile Services

○ **Governance**

16/11/2016 15:30-16:30

MODERATOR:
Martin Brynskov / Chair - Open & Agile Smart Cities - Brussels - Belgium

SPEAKERS:
Anna-Kaisa Ikonen / Mayor - City of Tampere - Tampere - Finland
Olavi Luotonen / Program Officer EU Policies, IoT - European Commission - Brussels - Belgium
George Burciaga / Managing Director, Global Government Development & Innovation - CIVIQ Smartscapes - Milford - USA
Daniel Michel / VP International Business Development - T-Systems International - Munich - Germany

How can open standards enable the development of the smart city? Anna-Kaisa Ikonen started the session by explaining Tampere's perspective on urban development. She affirmed that Tampere, which has 230,000 inhabitants, has become a city of digitization and the Internet of Things (IoT). The smart strategy of the Finnish city, called Smart.Grow.Together, aims to develop public-private partnerships (PPP) and a whole ecosystem to foster smart industry, smart governance, smart energy, smart health and smart mobility to improve the quality of life in Tampere. Olavi Luotonen introduced a three-step action plan on how to connect citizens with their cities and stressed how important it is that smart cities are being built from a human-centered standpoint. He particularly emphasized the fact that 'standards are important for the birth of a market and for the market to be good for all'. During his turn, George Burciaga offered some ideas on how to create this market. He underlined that 'the heartbeat of every city is its people.' So, technology should think and react to its people. He followed up by presenting CIVIQ Smartscapes, an open business building ultra-connected smart communications infrastructure for cities across the world, while monitoring useful data. Daniel Michel pointed out that citizens need to think about what they

'Open and agile' is having additional data to help solve new problems.'
Daniel Michel

really want out of their smart city. Finally, he suggested that city leaders should have many sensors integrated into many solutions that make the city smart, but that data should be sent back to just one platform, with one language, making it possible to take better decisions.

Parallel Sessions
Solutions to Measure City Performance and Achieve Collaborative Governance
○ Governance

17/11/2016 10:00-11:00

MODERATOR:
David Solomon /ThinkingCiti.es - Founder - Barcelona - Spain

SPEAKERS:
Raquel Sánchez / Mayor - City of Gavà - Spain
Jaime Ruiz / Technical Officer - ALEM, Local Energy Agency of Murcia City Council - Spain
Diego Camps / General Director of Smart City Projects - Government of the City of Buenos Aires - Argentina
Pascual Berrone / Associate Professor of Strategic Management - IESE Business School - Madrid - Spain
Roger Olivet / Product Director - BIID - Barcelona - Spain
Berrin Benli / Co-Founder - NOVUSENS Innovation and Entrepreneurship Institute - Ankara - Turkey
Maria Håkansson / Global Head of Industry Practices - Ericsson - Kista - Sweden
Marcelo Arnolfo Cossar / Lawyer - Municipality of Cordoba - Argentina

Now more than ever, public managers need to be aware of how to attain performance measurements to evaluate, budget, control, promote and improve services, as David Solomon highlighted to start off the session. Panelists showed a broad portfolio of solutions to address this issue. Raquel Sánchez presented the initiative Junts Fem Barri, aimed at powering participation processes and giving citizens the opportunity to decide what to do in public spaces. Jaime Ruiz followed up with the Roadmaps for Energy Project developed in Murcia and aimed at designing the city of the future. Diego Camps talked about the MiBA project designed to achieve a multidimensional overview of the city of Buenos Aires. Next, Pascual Berrone considered the result of the IESE Cities in Motion Index 2016, making it possible to have insights on the growth and capacity of various urban environments. He also stressed that decision makers need to be aware that changes are slow and that there is no single model of success. Roger Olivet introduced BIID, a mobile identity platform that enables smartphone users to secure digital transactions and ensure legal validity. Berrin Benli briefed the audience about a smart city assessment report in Turkey. Maria Håkansson talked the fact that digitalization is not only a solution for innovation and growth, but also the result of the citizens' wishes. Lastly, Marcelo Cossar remarked that cities are now more eager to share more data, but sometimes this data has little to do with citizens' needs. Hence, it is crucial for governments to properly identify and manage the interests and the needs of their constituents.

'The perfect city does not exist.'
Pascual Berrone

Parallel Sessions
Creative Cities: Unlocking the Potential of Produsage and Co-creation
○ Governance

17/11/2016 14:10-15:10

MODERATOR:
Cristina Garrido / Consultant - Anteverti - Barcelona - Spain

SPEAKERS:
George Gillespie / Assistant Director of Land and Environmental Services - Glasgow City Council - UK
Daniele Quercia / Head of Social Dynamics - Nokia Bell Labs - Cambridge - UK
Shain Shapiro / CEO - Sound Diplomacy - London - UK
Eckart Hertzsch / CEO - Joanes Foundation - Berlin - Germany
Peter Bjørn Larsen / Director City Data Exchange - Hitachi Insight Group - Copenhagen - Denmark

One of the most exciting and promising changes in modern societies could come from the enormous potential of produsage and co-creation. Having millions of citizens actively participating, adapting and producing in their best interest can transform society and how our cities are built. This session raised many examples on how to foster this almost unlimited source of innovation. George Gillespie opened by showing how Glasgow is preparing itself to face the future challenges of the city. Operations Center, Open Glasgow and Future Cities Demonstrators are three coordinated initiatives that have been approached as benchmarking in Scotland. Daniele Quercia showed how cutting-edge technology and creative use of social media can identify urban beauty in the eyes of citizens, capturing smells and sounds and creating new original city maps. Even what people consider a good or bad smell can be included in his platform, which correlates this data with the air quality in different parts of the city. The urban music scene was also highlighted by Shain Shapiro as a good opportunity for co-creation. Helping local artists to find music venues in their own cities can foster culture and tourism, amongst other benefits. 'Music contributes to citizens' quality of life,' he said. Eckart Hertzsch gave some guidelines on unleashing social energy for the benefit of our cities. Finally, Peter Bjørn Larsen closed the session by underlining the importance of city data exchange between data suppliers and data consumers as an example of co-creation.

'The fastest-growing cities in the world are those with vibrant music and entertainment ecologies.'
Shain Shapiro

Parallel Sessions
Urban Innovation Areas Underpinning Economic Growth
⊙ **Economy**

15/11/2016 12:45-13:45

MODERATOR:
Josep Miquel Piqué / Executive President - La Salle Technova - Barcelona - Spain

SPEAKERS:
Zhang Aiping / Vice director - Shanghai Pudong Economy and Informatization Committee - China
Eytan Schwartz / CEO - Tel Aviv Global - Israel
Kiev Gama / Professor - CESAR/CIn-UFPE - Recife - Brazil
David Belt / Co-Founder - Macro-Sea/New Lab - New York - USA

Josep Miquel Piqué started the session by pointing out that talent is the real raw material of the new economy. But how can cities make the most of it while balancing the personal and professional life of its citizens? Zhang Aiping presented the experience of Pudong, the eastern area of Shanghai (China) that has turned into a new, modern state-level area in just five years thanks to government investment in the e-government cloud, integrated information, IoT and the use of big data. Eytan Schwartz spoke about the challenges tackled by Tel Aviv in Israel, which has positioned itself as a start-up nation and has the highest concentration of accelerators in Europe. This ecosystem is unique but needs support, he said. During his turn, Kiev Gama talked about what Brazil is doing with young talents that are developing apps for the city by creating living labs where they can solve issues according to the needs of their cities. Lastly, David Belt introduced New Lab, a Brooklyn Navy Yard-based community of hardware-centric designers, engineers and

'Involving users in the innovation process requires a mindset shift and that takes time.'
Eytan Schwartz

entrepreneurs leveraging advanced technologies to create meaningful new products, such as rucksacks with solar energy, medical robots, nanotronics imaging and a universal translator, among others. 'We are looking for companies that are creating products that make cities better. We want to be their best resource,' he concluded.

Parallel Sessions
Financial Tools to Fund Smart Cities Initiatives
⊙ **Economy**

15/11/2016 14:00-15:00

MODERATOR:
Hila Oren / CEO - Tel Aviv Foundation - Israel

SPEAKERS:
Ellis J. Juan / Division Chief Housing and Urban Development - Inter-American Development Bank - Washington - USA
Holly Vineyard / Deputy Assistant Secretary of Commerce for Global Markets - US Government - Washington DC - USA
Andrew McIntyre / Manager Future Cities program - Asian Development Bank - Mandaluyong - Philippines
María José Perea / Global Account Director - Energy Management and Industry Finance - Siemens Financial Services - Munich - Germany

Public-private partnerships, loans, equity, social impact bonds, crowdfunding and city coins were some of the financial tools mentioned in the panel to face the challenge of financing smart cities initiatives. Yet funding smart cities goes beyond the financial instruments, as agreed by the panelists. María José Perea started by commenting that Siemens Financial Services understands the holistic spectrum of Smart City initiatives, and highlighted how smart financing unleashes technology solutions and helps scale up Smart Cities. Andrew McIntyre talked about the fastest urbanizing region in the world, Asia, which expects to have 3.3 billion people by 2050, and the initiatives the Asian Development Bank is carrying out to attract additional funding and knowledge partners. Holly Vineyard pointed out the importance of such institutions to help find the right partners, and to support the import/export processes for smart city products and services. Finally, Ellis J. Juan explained that migrating from a traditional to a smart way of managing a city is a process that requires careful planning and even more careful execution. He also underlined that it is necessary to monetize efficiency gains to be able to develop new financing schemes. Lastly, he concluded that it is important to avoid investing in smart components until the non-smart ones have been covered.

'There are many instruments for funding Smart Cities, but in the end, it is about risk and return.'
Ellis J. Juan

Parallel Sessions
Business Ecosystems Enabling Innovation in Cities

○ Economy

16/11/2016 11:45-12:45

MODERATOR:
Jose Manuel Leceta / Chairman and co-founder - Insight Foresight Institute - Madrid - Spain

SPEAKERS:
Kate Daly / Senior Vice President - New York City Economic Development Corporation - USA
Miranda Sharp / Head of Smart Practice - Ordnance Survey - Southampton - UK
Brandon Davito / Vice President, smart cities & street lighting - Silver Spring Networks - San Jose - USA
Toomas Türk / ICT sector manager / Smart City cluster development manager - Tallinn Science Park Tehnopol - Tallinn - Estonia
Tim Turitto / General Manager, Government Industry - Microsoft Worldwide Public Sector - Redmond - USA

'Stressors and challenges in the city mean there are more opportunities.'
Kate Daly

José Manuel Leceta started off the session by recalling that 'innovation has to do with people' and that cities are laboratories of innovation. But what are the ingredients to develop an entrepreneurship ecosystem contributing to improve citizens' life? Kate Daly gave some background on New York's growing tech economy, stressing that more than 300,000 New Yorkers work in that sector. She also highlighted that the city wants to match its goals of reducing greenhouse gas emissions by 80% by 2050 with drivers and incentives, so that urban innovators can meet the demands through cross-pollination across all sectors. Miranda Sharp brought up an uncomfortable truth related to

cities: the private sector needs to make money and the public sector needs to be careful with that money. In this context, mapping makes it possible to see where problems may be concentrated to address issues and find unique solutions for every city. During his turn, Brandon Davito spoke about open platforms that allow for innovation, new device ecosystems and partner ecosystems, changing the way citizens experience the city. He gave some examples of successful partnerships, such as Copenhagen. Toomas Türk described the Estonian start-up program to attract talent and capital, endorsing public-private partnerships and building an ecosystem-like value chain. To conclude, Tim Turitto described the importance of trust for an ecosystem to be successful, as well as the need to have a purpose to drive innovation and keep it sustainable. Panelists agreed that governments will need to understand their connections to surrounding environments and realize that citizens are the ones who drive change.

Parallel Sessions
Harnessing the Potential of the Social and Sharing Economy

○ Economy

16/11/2016 13:00-14:00

MODERATOR:
Mayo Fuster / Professor and director of Dimmons.net Collaborative economy research - IN3-UOC - Barcelona - Spain

SPEAKERS:
Silvano Aversano / Community Participation Manager - Smart Barris - La Fàbric@ sccl - Barcelona - Spain
Margarita Padilla / Computer programmer - Smart Barris - Barcelona - Spain
Gracia Vara / Expert - EIPA - Barcelona - Spain
Sten Tamkivi / CEO - Teleport - Tallinn - Estonia
Jose Antonio Ondiviela / Member - City Protocol Society - Madrid - Spain

The rise of the sharing economy is changing the face of business and cities, creating opportunities for new entrants, challenges for incumbent players and searching questions for all stakeholders. Silvano Aversano and Margarita Padilla spoke about their work in accessibility and equal opportunities for everyone through training and consulting, as well as mediation and community work. Gracia Vara laid out policy options for innovation: either the EU legislation is applied, prohibiting new things, or new rules are created that are tailored to a new form of economy. In this sense, copying and

pasting policies into a sharing community model will not work, so cooperation between platforms as well as negotiations are important to prevent innovations from operating in a black market, she said. Sten Tamkivi talked about how governments rarely acknowledge that they are competing for citizens. That is in fact the reason why they should create the regulations that give citizens and the collaborative economy increasing choices, he said. Finally, José Antonio Ondiviela brought up the 'decision-making triangle', that is, the emotional, performance and economic corners that point to how a city's attractiveness is defined. But what is relevant for citizens, according to this expert, is the 'city profitability' concept, which describes the relationship between the services they get and the real impact on their pocket. In the end, the panelists agreed that cooperation between platforms and authorities is probably the best way forward.

'The sharing and collaborative economy has an impact on the redistribution of people on the planet.'
Sten Tamkivi

Parallel Sessions
4YFN How Start-ups Are Innovating Cities

⭕ **Economy**

17/11/2016 14:10-15:10

MODERATOR:
Juan Alvarez de Lara / Founder and CEO - Seed&Click - Barcelona - Spain

SPEAKERS:
Liora Shechter / CIO - Tel Aviv municipality - Israel
Niksa Vlahusic / Professional Associate - City of Dubrovnik Development Agency - Croatia
Philipp Bouteiller / CEO - Tegel Projekt GmbH - Berlin - Germany
Fernando Rayón / Business Innovation Manager - Suez Spain - Barcelona - Spain

Start-ups are a constant source of new products and services, thus contributing to fostering innovation and creativity. What are the actions cities can take to enhance start-up activity? Liora Shechter presented the experience of Tel Aviv, which has positioned itself as a start-up nation. The city prepared a framework for start-up support allowing for municipality data to be shared, workspace to be provided and tax reductions to be offered. Tel Aviv is therefore promoted as a smart city, and quality of life is increased as projects emerge such as Sentidio – developing social skills for autistic children. Niksa Vlahusic introduced the Smart Community project in Dubrovnik as well as the local application Dubrovnik Eye. 'You need to connect real needs of the city with the project you want to do,' he explained. During his turn, Philipp Bouteiller pointed out that start-ups need financing. He added that although technology is not a remedy for all problems, it may facilitate change. Investments in start-up industry are needed to boost innovation and attract foreign capital, he insisted. To conclude, Fernando Rayon

'*Cities can be active shareholders of start-ups.*'
Phillip Bouteiller

described Sity, an urban corporate incubator in Barcelona that is part of an incubation program. This incubator brings together different urban stakeholders, city experts and the unique Barcelona atmosphere. Panelists agreed that start-ups work faster than companies, and therefore they need more investment.

Parallel Sessions
4YFN Awards 2016 Smart City Edition – Final

⭕ **Economy**

17/11/2016 15:20-16:20

MODERATOR:
Juan Alvarez de Lara / Founder and CEO - Seed&Click - Barcelona - Spain

SPEAKERS:
Liora Shechter / CIO - Tel Aviv municipality - Israel
Niksa Vlahusic / Professional Associate - City of Dubrovnik Development Agency - Croatia
Philipp Bouteiller / CEO - Tegel Projekt GmbH - Berlin - Germany
Fernando Rayón / Business Innovation Manager - Suez Spain - Barcelona - Spain

For the second year running, 4YFN hosted an award at Smart City Expo World Congress to globally expose emerging companies that have created high-impact mobile solutions to enhance the well-being of citizens in their urban environments. Five innovative start-ups, covering different key areas, were short-listed for this year's awards: Comodule, which supplies connected vehicle technology for bicycle and scooter manufacturers; Vessla, which has created a completely cordless IoT screen that supports wireless communication; CitizenLab, which provides a civic engagement platform that allows citizens to co-create their city with the city itself; Energy Elephant, which builds and explores energy data using artificial intelligence; and WesmartPark, which is like an AirBnB for drivers wishing to park their cars in the city.

Each start-up had five minutes to present their project and convince the jury. The jury had a tough job in deciding on the winner, who was the Barcelona-based firm WesmartPark. Having fewer cars looking for parking definitely improves the city in many ways: there is less traffic, less pollution, better use of existing real estate assets, incremental income and lower parking prices.

Lastly, Pau Gargallo, the 4YFN Awards 2015 Smart City Edition winner, presented the innovative solution Mapillary, capturing street-level photos from every angle with a 360° camera and establishing the high standards required to compete for this prize.

Parallel Sessions
Walkable and Cyclable Cities

⊙ Mobility

15/11/2016 11:30-12:30

MODERATOR:
Robert Stüssi / CEO - Perform Energia - Dafundo - Portugal

SPEAKERS:
Erion Veliaj / Mayor - Municipality of Tirana - Albania
Robert Cervero / Professor and chair of city & regional planning - University of California, Berkeley - Lafayette - USA
Salvador Rueda / Director - BCNecologia - Barcelona - Spain
Priya Prakash / Founder - D4SC - Design For Social Change - London - UK
Waleed Al Saadi / Utilities Director & Smart City Project - Lusail Real Estate Development Company (LREDC) - Lusail - Qatar

With cities realizing the inefficiencies and harmful effects of private vehicles, spaces that encourage walking and cycling are increasingly being placed at the forefront of mobility strategies. Claiming that 'transit-oriented development is really pedestrian-oriented development', Robert Cervero introduced factors on how to create these strategies, such as compact mixed land use, high connectivity and good urban design. These factors were echoed by Salvador Rueda in describing how Barcelona, already noted as an example by the previous speaker, aims to further improve its walkability and cyclability through the creation of superblocks. These superblocks are intended to expand the pedestrian and public space network by limiting motorized vehicle access and adding green spaces on a large percentage of roads in the city, allowing citizens to 'gain new rights in the public space'. During her turn, Priya Prakash spoke about a participative approach in working with the government and contractors and presented an app called Changify, which taps into the power of people and local businesses to prototype better cities. Erion Veliaj emphasized the need for cultural change through a strong commitment from the government and likewise support from the citizens. Waleed Al Saadi presented how new cities, in this case Lusail in Qatar, can use technology to improve mobility. In the end, panelists agreed that focusing on pedestrians increases social interaction, better business opportunities and lower crime.

'As people get out of cars and start walking and cycling, they get more engaged and involved in the city.'
Robert Cervero

Parallel Sessions
Implementing Flexible and Multi-modal Transport Services

⊙ Mobility

15/11/2016 14:00-15:00

MODERATOR:
Mohamed Mezghani / Deputy Secretary General - UITP Advancing Public Transport - Brussels - Belgium

SPEAKERS:
Pieter Litjens / Deputy Mayor for Traffic and Transport - City of Amsterdam - Netherlands
Álvaro Nicolás / Mobility Advisor - Barcelona City Council - Spain
Jesús Padilla / President - Asociación Mexicana de Transporte y Movilidad (AMTM) - Mexico City - Mexico
Ian Slater / SVP, Enterprise Partnerships - Mastercard - London - UK

Mohamed Mezghani started the session by pointing out that mobility is a key factor in the development of Smart Cities. To make it 'easy, comfortable and safe' for people to move, it is essential to offer multi-modal door-to-door mobility, he added. But how can cities respond to the emerging trends regarding transport? Peter Litjens highlighted the challenges of integrating innovative mobility and logistics options in an old city like Amsterdam that already has a complex and dense road network, emphasizing the need to have a combination of available transport options to citizens. During his turn, Álvaro Nicolás presented Barcelona's 2013-2018 urban mobility plan, focusing on intermodality and aimed at creating safe, sustainable, equitable and efficient transport in the city, as well as reducing traffic noise and improving air quality. Jesús Padilla followed up on the benefits for smaller cities from restricting the use of cars as much as possible and investing in the increasing bicycle use instead. Ian Slater ended by underscoring the reasons to have smarter ticket options to avoid disruption for both citizens and operators using cash on public transport as 'cash is slow and prone to fraud,' he said.

'Transport is a long-term effort, starting now to get the city of the future.'
Mohamed Mezghani

Parallel Sessions
Innovative Ideas to Move People Around Cities

⚙ **Mobility**

16/11/2016 11:45-12:45

MODERATOR:
Francis Pisani / Independent Journalist and Writer - Le Monde - Barcelona - Spain

SPEAKERS:
Àngel López / Electrical Vehicle Director, Urban Ecology Area - Barcelona City Council - Spain
Aníbal Gaviria / Visiting Scholar Berkeley and Former Mayor of Medellin - University of California, Berkeley - Medellin - Colombia
Jesús Pajares / Machinery Department Director - FCC - Barcelona - Spain
Fabian Simmer / Digital Officer - SEAT - Barcelona - Spain

'The electric vehicle must park where it charges; not charge where it parks.'
Àngel López

After big data, mobility is probably the biggest challenge for smart cities. Along with reducing car usage within the city's boundaries, the common solution is electrifying transport, as proposed by Àngel Lopez and Jesús Pajares. Fabian Simmer added to two other mega-trends of the automotive industry focused on the mobility sector, namely autonomous driving and connectivity of the car fleet. However, new technologies cannot solve everything. Urban designs need to change the way the people move around cities. In this sense, Aníbal Gaviria explained that the new mobility plan helps the city of Medellin not only improve the mobility of its citizens, but also reduces violence, inequity and poverty. He mentioned that it is crucial to connect citizens and build their environment through and around public spaces. Fabian Simmer predicted that, in the near future, cars will have a SIM card enabling new technologies such as a smart parking finder, social navigation and smart traffic lights. Nonetheless, three pillars turn out to be more important when it comes to developing a mobility plan: adaptation, interaction and cooperation. Àngel Lopez added that a car solution must be distinguished from a mobility solution. In any case, public-private partnership and cooperation are the only ways to address the infrastructure issue.

Parallel Sessions
Shared & On-Demand Mobility Services

⚙ **Mobility**

16/11/2016 14:15-15:15

MODERATOR:
Ramon Pruneda / CTO - Barcelona Metropolitan Area (AMB) Information and Services- Barcelona - Spain

SPEAKERS:
Sabine Flores / Managing Director - Metropolitan Region Hannover-Braunschweig- Göttingen-Wolfsburg - Hannover - Germany
Sofia Civeira / Head of Transport - Greater Zaragoza Transport Authority - Spain
Jordi Ortuño / ICT Mobility and Infrastructure - Barcelona City Council - Spain
Christoph Wäller / Head of Innovation and Alternative Mobility - SEAT - Barcelona - Spain
Carlos Mier-y-Teran / Director of Mass Transit - Banobras - Mexico City – Mexico

Mobility as a service is an important challenge for cities, as Ramon Pruneda stated to start the session. Shared and on-demand mobility solutions can improve citizens' mobility demands on an 'as-needed' basis. Sabine Flores presented a model of carsharing 'in tandem' through which employers and employees share a car. She also highlighted the growing use of smart technologies to assist with mobility options, for example using smartphones to operate vehicles. Sofia Civeira spoke about the improvements Zaragoza has been making with the integration of smart transit cards and how the resulting big data analytics can inform better decisions for other areas. Christoph Wäller highlighted that the future lies in the collaboration between cities and cars, and presented the CARNET initiative, created by SEAT, Barcelona and the Polytechnic University of Catalonia, to adapt products to the needs of the city. Jordi Ortuño followed, highlighting that the successful introduction of innovation such as geolocation services or novel urban platforms requires collaboration with stakeholders across

'The intelligence about connected mobility does not lie in the car or the manufacture of the car but in the software.'
Christoph Wäller

different sectors. Finally, Carlos Mier-y-Teran underlined that public transport in Mexico cannot be developed due to the lack of resources. Traffic jams are therefore difficult to solve there.

Parallel Sessions
ITS Managing Complex Mobility Networks

○ **Mobility**

16/11/2016 15:30-16:30

MODERATOR:
Hans Jeekel / Professor, Societal Aspects of Smart Mobility and Chair of the Board - Eindhoven University of Technology and Association for European Transport - Eindhoven - Netherlands

SPEAKERS:
Bob Randsdorp / Product Manager TomTom City - TomTom - Amsterdam - Netherlands
Ayman Smadi / Director of the Middle East and North Africa (MENA) - UITP and Center for Transport Excellence - Dubai - UAE
Enrique Dominguez / Founder - CTO - ElParking - Barcelona - Spain
Irantzu Allende / Marketing Analyst Executive of Government and Entreprise Business - ZTE Corporation - Shenzhen - China
Rayleigh Ping-Ying Chiang / Vice President - Kang-Ning University - Taipei - Taiwan

ITS offers a variety of means to manage the road and public transport network in a coordinated manner. Bob Randsdorp explained that traffic management 1.0 was focused on collecting data and controlling drivers, and envisioned a different scenario for the future. He presented the TomTom City platform, covering 52 cities, aimed at providing real-time traffic information to help traffic management. During his turn,

'*It's going to take a lot of time before we have a road network that has all self-driving vehicles.*'
Bob Randsdorp

Ayman Smadi talked about how to address future mobility in the Middle East and North Africa and presented several initiatives, such as the Bus Rapid Transit Project (BRT) and the EV Initiative aimed at promoting the use of electric cars. Enrique Dominguez explained how the Elparking application improves mobility by accelerating and simplifying the parking process. Irantzu Allende agreed that smart parking is a good way to ease the mobility issue and suggested cities should install sensors and detectors to make parking quicker. Finally, Rayleigh Ping-Ying Chiang warned of the potential risk of sleep disorders when talking about mobility, and demonstrated the possibilities wearable technology brings to avoid this problem.

Parallel Sessions
Data Collection & Management for Efficient Urban Mobility

○ **Mobility**

17/11/2016 10:00-11:00

MODERATOR:
Jaume Barceló / inLab.FIB - UPC - Barcelona - Spain

SPEAKERS:
Carlos Urriola / National Coordinator of Planning and Development - Ministry of Transports and Telecommunications - Santiago de Chile - Chile
Kesami Jotaki / Executive Director, Site ation Department of Housing & Urban Planning Bureau - Fukuoka City Government - Japan
Ralph Muehleisen / Principal Building Scientist - Argonne National Laboratory - Lemont - USA
Fréderic Passaniti / Tech Evangelist and Consultant - OpenDataSoft - Paris - France
Albert Isern / CEO - Bismart - Barcelona - Spain

'*Predictive models can help reduce up to 7% marketing campaigns budgets in the private sector.*'
Albert Isern

Urban mobility data used to be scarce and very expensive. Technology has changed this scenario, as Jaume Barceló explained at the start of the session. But how can new flows of data be handled and correctly processed so they can help improve mobility? Carlos Urriola shared the Chilean strategy to prioritize public transport and non-motorized means of transport. He also emphasized the need for a cultural shift in the public sector to adopt new data analysis tools.

Kesami Jotaki showcased two projects to improve sustainability in Fukuoka. The first was based on sewage-powered cars; the second on the creation of an innovative area with great potential to transform transport. Ralph Muehleisen followed up by asking how cities can have more insights and introduced an open platform for intelligent and attentive sensors, called Waggle, and a science-driven instrument for urban measurement, developed jointly with the University of Chicago. Fréderic Passaniti highlighted the need to make public transport data truly open and gave some examples of its use, such as STAR, a system to find out real-time bus positions. Finally, Albert Isern presented a predictive big data solution to decrease traffic fatalities by helping emergency services in pinpointing when, where and under what conditions accidents will occur.

Parallel Sessions
Solutions to Improve Urban Mobility and Achieve Sustainable Development

○ **Mobility**

17/11/2016 15:20-16:20

MODERATOR:
Nicky Keefe / Chief Executive - ViewPoints Media - Barcelona - Spain

SPEAKERS:
Alessandro Caviasca / Founder and CEO - SIARQ Solar Innovation for Zero Emission Cities - Barcelona - Spain
Thomas Hohenacker / CEO - Cleverciti Systems GmbH - Munich - Germany Paolo Ferri / CEO and Cofounder - Wecity - Modena - Italy
Angel Ros / Automation Research - ITE - Paterna - Spain
Alex Mateo / Sales & Operations Planning and Industry Manager Smart Cities - Libelium - Zaragoza - Spain
Oren Ezer / CEO - ElectRoad - Rosh Haain - Israel
Laurent Guennoc / Data analyst - Eco-Counter - Lannion - France
Frank van Os / Co-founder & CEO - Smart Mile Solutions - De Meern - Netherlands
Xavier Peich / President - SmartHalo - Montreal - Canada
Gernot Lenz / Research Engineer - AIT Austrian Institute of Technology - Vienna - Austria

The use of smart technologies while encouraging behavioral changes is giving rise to ground-breaking solutions for reducing traffic and CO_2 emissions, as Nicky Keefe pointed out to start the session. Panelists showcased some of these solutions. Alessandro Caviasca explained SIARQ works for zero-emission cities by integrating solar energy in the urban landscape and presented Solar HUB, an open collaboration program. Thomas Hohenacker described efficient sensor systems that can be easily installed on buildings or lamp posts, which enable citizens to know right away where to park. Paolo Ferri

'Biking will become the most important mode of transport in the 21st century.' *Xavier Peich*

displayed an app where citizens can earn CO_2 credits to get discounts on real products. During his turn, Angel Ros spoke about the CEI program, which aims to measure the energy resources of a city. Alex Mateo followed with the IoT projects developed by the Zaragoza-based company Libelium, that have three common elements: sensors, wireless communication protocols and cloud platforms. Oren Ezer highlighted that pollutants will cause about 8 million global fatalities by 2020 and stressed the need for a shift to electric mobility. Laurent Guennoc presented Eco-Visio maps, which can provide a good analysis of bicycle traffic in the city. Frank van Os presented a novel urban delivery platform that reduces traffic and pollution. During his turn, Xavier Peich introduced SmartHalo, a device that can be installed on bike handlebars to turn it into a full-fledged smart bike. Finally, Gernot Lenz talked about Tram-In-Tack, a detection and prevention system to prevent public transport corridor blockages by parked vehicles. At the end, bringing the talk full circle, the panelists agreed that innovations should move ahead hand-in-hand with behavioral change.

Parallel Sessions
Improving Cities Through Education and Culture

○ **Society**

15/11/2016 11:30-12:30

MODERATOR:
Giorgio Prister / President - Major Cities of Europe - Rome - Italy

SPEAKERS:
Israel Singer / Mayor - Ramat Gan Municipality - Israel
Miguel Sangalang / Executive Officer, Budget and Innovation - City of Los Angeles - USA
Enrique Marumoto / Chief Innovation Officer - Municipality of Leon - Mexico
Dirk Petrat / Director General for Central Services - Ministry of Culture / Free and Hanseatic City of Hamburg - Hamburg - Germany
ChunLan Jiang / President - Hebei Digital Education Collaborative Innovation Center - Hebei - China

One essential challenge for cities is to rethink the way that technology can be used to improve the sharing of culture and education. To start off, Miguel Sangalang explained how Los Angeles, a city of four million people, has become an Open Data sharing center thanks to agreements between the government, universities and companies. Similarly, in Leon, Mexico, the Master Plan of Smart Human Municipality has six priority areas fostering education, security, sustainability and inclusion among the rural population and poverty polygons, as Enrique Maramuto stressed. The continuation of these initiatives is guaranteed through Lab Leon and Emprende Leon applied to knowledge industries. In Europe, there are different challenges and opportunities. Dirk Petrat presented a cultural app that encourages people to interact with the history of the city in a dynamic way. During his turn, ChunLan Jiang underlined the power of Augmented Reality and Virtual Reality to bring the best of culture and education to remote communities across the Hebei Province. Finally, Israel Singer explained

'Equity in education is about sharing the same vision of the future.'
ChunLan Jiang

how Ramat Gan is using big data to get patterns that help give solutions to teachers. The result is an open space with latest technology called the Hub.

Parallel Sessions
Enhancing Civic Engagement in the Digital Age

⭕ **Society**

15/11/2016 14:00-15:00

MODERATOR:
Marcos García /Director - Medialab-Prado - Madrid - Spain

SPEAKERS:
Gala Pin / Councillor of Participation and Districts - Barcelona City Council - Spain
Pablo Sarrias / CEO - OpenSeneca - Civiciti - Barcelona - Spain
Angelica Alvaray / COO - CITIVIVA - Weehawken - USA

Participation rates in civic engagement and participatory democracy are still just average today, affirmed Pablo Sarrias. Some of the reasons why this is happening are related to politics and people's perceptions of its impact on their life. Others are related to social and operational causes, such as using the wrong tools or having budget problems. Sarrias was confident that this situation could be reversed with the second generation of participatory platforms. Similarly, Angelica Alvaray presented CITIVIVA, another platform for citizen participation launched in 2015 in Montevideo (Uruguay), and also stressed that citizen engagement is key for cities to reach desired levels of quality of life. She also pointed out that there is no smart solution unless citizens are an active part of the equation. Participation rates in civic engagement and participatory democracy are still just average today, affirmed Pablo Sarrias. Some of the reasons why this is happening are related to politics and people's perceptions of its impact on their life. Others are related to social and operational causes, such as using the wrong tools or having budget problems. Sarrias was confident that this situation could be reversed with the second generation of participatory platforms.

Similarly, Angelica Alvaray presented CITIVIVA, another platform for citizen participation launched in 2015 in Montevideo (Uruguay), and also stressed that citizen engagement is key for cities to reach desired levels of quality of life. She also pointed out that there is no smart solution unless citizens are an active part of the equation.

'Democracy is smart.'
Gala Pin

Parallel Sessions
Integration and Engagement of Women in Urban Development

⭕ **Society**

16/11/2016 11:45-12:45

MODERATOR:
Zaida Muxí / Director of Urban Planning, Housing, Public Space, Ecology and Environment - Santa Coloma de Gramenet City Council - Spain

SPEAKERS:
Edna Pasher / Founder and chair - Israel Smart Cities Institute - Tel-Aviv - Israel
Eva Fabry / Director - European Center for Women and Technology (ECWT) - Oslo - Norway
Sri Husnaini Sofjan / Senior program Administrator & Strategist - Huairou Commission - Women, Homes & Community - Brooklyn, New York City - USA
Chelsea Gauthier / Associate Director - Center for the Living City - Salt Lake City - USA

Although the Smart City movement has been maturing, the role of women is still small. Zaida Muxí introduced the session by asking the overarching question of how technology can lead to more equal cities. Eva Fabry started off by describing different initiatives of the European Center for Women and Technology (ECWT) in championing women working with technology through measures such as gender action plans. Edna Pasher described some of the challenges women face working in the 'smart' sector, such as inclusion, employment, engagement and well-being, and called for more gender-sensitive programs. This sentiment was echoed by Sri Husnaini Sofjan, who said 'it's not about the cities being smart; it's about the people being smart-- men and women'. Women do not have to justify their role in urban development because they are integral members of society and can strongly affect homes and communities. They should be provided with critical information, knowledge, and technology, for example through the app SafetiPin, a personal safety companion to take safer decisions. Similarly, Chelsea

'Social media cannot make a city smart. Only people can be smart and we have to make sure we engage them.'
Chelsea Gauthier

Gauthier advocated for the creation of portals for engagement, especially of marginalized groups such as women. She particularly concentrated on the value of young women and promoting their interactions with urban space through Jane Jacob Walks. The speakers concluded that women still need these affirmative actions to be granted equal opportunities to fully participate in shaping smart cities.

Parallel Sessions
Co-Cities Advancing Collaborative Urban Development
◐ **Society**

16/11/2016 13:00-14:00

MODERATOR:
Joan Subirats / Faculty Member - Institut de Govern i Polítiques Públiques - Universitat Autònoma de Barcelona - Spain

SPEAKERS:
Gregorio Planchuelo / Director of Citizen Participation - Madrid City Council - Spain
Mahadhir Aziz / General Manager - Cyberview Sdn Bhd - Cyberjaya - Malaysia
Mara Balestrini / Research Director - Ideas for Change - Barcelona - Spain
Matteo Kalchschmidt / Professor - University of Bergamo - Bergamo - Italy
Stefano Andreani / Research Associate - Graduate School of Design, Harvard University - Cambridge - USA

The increasing challenges faced by urban areas call for a new approach on how cities can move forward. Joan Subirats started the session off by calling for a shift from competition to collaboration in problem diagnosis up to implementation through collaborative cities, or co-cities. However, he brought up concerns regarding responsibility, power relations and the role of expertise in co-cities. Gregorio Planchuelo shared how collaboration is exercised in Madrid through participatory budgeting that allows any citizen to make proposals. Mahadhir Aziz described how Cyberjaya has built two initiatives into its city management system where citizens can collaborate: living labs and smart city. Mara Balestrini spoke of the contributive city in which every citizen has 'the right to contribute' and illustrated this through the Bristol approach, which involves citizens from problem identification to outcomes. Participation from citizens can be more easily tapped into and sustained if they are involved in something they believe is important. For Matteo Kalchschmidt and Stefano Andreani, collaboration can be steered by a design-driven approach and discussion with local stakeholders. Kalchschmidt ended emphasizing the fact that cities' smartness comes from the creativity of the community.

'Collaboration with key stakeholders is the smarter way to develop a smart city.'
Mahadhir Aziz

Parallel Sessions
Collaborative Platforms for Digital Social Innovation and Sustainability
◐ **Society**

16/11/2016 14:15-15:15

MODERATOR:
Francesca Bria / Chief Technology and Digital Innovation Officer - Barcelona City Council - Spain

SPEAKERS:
Fabrizio Sestini / Senior Expert for Digital Social Innovation - European Commission - Brussels - Belgium
Peter Baeck / Head of Collaborative Economy Research - Nesta – London - UK
Monique Calisti / Executive Director - Martel Innovate - Zurich - Switzerland
Tomás Diez / Instigator - Fab City Research Laboratory - Barcelona - Spain
Mayo Fuster / Professor and director of Dimmons.net, Collaborative economy research - IN3- UOC - Barcelona - Spain

Digital social innovation is key to generating a systemic change leading to the common social good. Over the last 20 years, investments and research on digital innovation have focused on the military and the private sector, and although opportunities of investing in social innovation are huge, this has not happened as broadly as desired. Thus, the questions are: What are the existing grassroots movements and what conditions do they need to thrive and scale up? Fabrizio Sestini highlighted the multidisciplinary aspects and great involvement of communities in the CAPS (Collective Awareness Platforms for Sustainability and Social Innovation) initiative developed by the European Commission. Tomás Díez focused on FabLabs, a global network of labs that gives access to digital fabrication and experimentation to everyone, empowering citizens and preventing the concentration of power by means of open knowledge, open data, open source and open hardware. Peter Baeck, Monique Calisti and Mayo Fuster outlined key points to foster such initiatives. They stressed the need to support grassroots movements, to generate evidence of their appropriateness to engage not only policy-makers and funders but also citizens, to scale initiatives and to create platforms to aggregate existing grassroots movements, structure them and facilitate the sharing of knowledge. Financial sustainability and community sustainability were also brought up as issues to be addressed. As Mayo Fuster put it, 'local production does not mean not sharing information and data globally'.

'We are moving to a model in which containers don't travel around the world - only information does.'
Tomás Diez

Parallel Sessions
Scaling-up Social Innovation Through Living Labs

⊙ **Society**

16/11/2016 15:30-16:30

MODERATOR:
Tuija Hirvikoski / President and Chair of the Council - ENOLL (European Network of Living Labs) - Vantaa - Finland

SPEAKERS:
Stéphane Goyette / Chief Digital Officer, Smart and Digital City Office - Montreal - Canada
Wim De Kinderen / International Project Manager - Brainport Eindhoven EU Office - Eindhoven - Netherlands
Artur Serra / Deputy Director i2Cat Foundation, ENoLL Vice President - ENoLL (European Network of Living Labs) - Barcelona - Spain
Mark Saunders / UK Projects Director, Center of Excellence for Cities - Ferrovial Services - Birmingham - UK
Hans Schnitzer / Professor - CityLAB - Graz - Austria

'People don´t resist change, they resist being changed'
Hans Schnitzer

Twenty-first century innovation is cyclic, non-linear and social as it involves citizens, SMEs and the third sector. What is the role of living labs in the up-scaling of social innovation? Stéphane Goyette presented the case study developed in Montreal where a library is now a co-creation and experimentation space to take on both technological and non-technological challenges with accessibility and inclusiveness as its core. Wim de Kinderen explained how he is working to create a smart Eindhoven that ensures the quality of life of its citizens and allows different people to evolve at different speeds. His goals are thus to

make the city a living lab through open data and partnership with academia. Artur Serra pointed out that today, the second wave of development in ICT is connecting the technology that has been created pver the last decades to society. He then emphasized the connection the Cat-lab is trying to enhance with the inter-lab network, connecting existing labs to one another. Mark Saunders showed how innovation in urban services can support social development in UK. He put emphasis on the UK model, which puts citizens at the heart, and works very closely with city councils and local authorities, academia, solution providers and workers. Hans Schnitzer spoke in similar terms and pointed out that social innovation is needed in processes, products and systems to 'do the best thing' and not just to do 'things better'. In his opinion social innovation is human-centered, open, collaborative, experimental and iterative and should invite all stakeholders to design roadmaps on specific topics.

Parallel Sessions
Bridging the Urban Divide: Building Cities for All

⊙ **Society**

17/11/2016 10:00-11:00

MODERATOR:
Josep M. Coll / Associate Professor & Program Director - EADA Business School - Barcelona - Spain

SPEAKERS:
Jeff Merritt / Director of Innovation - City of New York - USA
David Quirós / Deputy Mayor for Culture and Social Innovation - L'Hospitalet City Council - L'Hospitalet de Llobregat - Spain
Sergio Meza / Municipal Manager - Municipalidad Distrital de Miraflores - Lima - Peru
Shikha Jain / Principal Project Coordinator - MMCF (Maharana of Mewar Charitable Foundation), Udaipur - Gurgaon - India

In classical Greece, Plato said that 'any city, however small, is in fact divided in two'. Today, the gap is getting bigger, warned Josep M. Coll to start off the session. In this sense, Jeff Merritt highlighted that equity has become a guiding principle in NYC under Mayor de Blasio. He added that technology is a key enabler and that the digital divide between the technology 'haves' and 'have-nots' must be tackled to provide opportunities. That is why in the next five years, more than $1 billion will be invested in connectivity and new technologies. During his turn, David Quirós explained that the city is a territorial ecosystem in which multiple intelligences with infinite potentials and talents coexist, and stressed that L'Hospitalet is leading a cultural revolution for social inclusion. 'Cities that address their challenges in a holistic way, analyze their environments and make the most of the value of their potential will become the smart cities of the 21st century', he stated. Sergio Meza

'Equity means equal access to opportunities.'
Jeff Merritt

followed up with the experience of Miraflores, which has developed equity policies for people with disabilities, including the use of sign language or a protocol for caring for deaf people. Eventually, Shikka Jain focused on the importance of including living traditions and rituals in the Smart City plan, as they are central to residents' health and identity. She concluded that heritage is now accepted in India as a cross-cutting theme for all urban sectors to achieve a city for all.

Parallel Sessions
Solutions for More Inclusive and Participative Cities
○ Society

17/11/2016 14:10-15:10

MODERATOR:
André Gomyde / President of the Brazilian Human Smart Cities Network, Member of the Science and Technology Council of the Presidency of Brazil, President of the Vitoria Development Company - Brazilian Human Smart Cities Network - Vitoria - Brazil

SPEAKERS:
Teresa Ferrer-Mico / STEM coordinator - St Peter's School - Barcelona - Spain
Faustino Cuadrado / CEO - Mass Factory Urban Accessible Mobility - Cerdanyola del Vallès - Spain
Michael Gould / Professor - Universitat Jaume I - UBIK - Castellón - Spain
Zvi Weinstein / Researcher & Lecturer - Israel Smart Cities Institute - Tel Aviv - Israel
Linda Chandler / Smart Cities Lead, Asia Pacific - Microsoft - Singapore
Huann-Shiuh Shy / Advisor/Director, strategy planning group - OurCityLove Social Enterprise/ITRI - Taipei - Taiwan
Miriam Alarcón / Curator and project manager - Rebobinart - Barcelona – Spain

'*Smart Cities must leave no one behind.*'
Linda Chandler

This practical session showcased a myriad of successful experiences to foster participation. Teresa Ferrer-Mico explained how St Peter's School has introduced the smart city concept in the curriculum with an educational approach based on what she called 'Community of Inquiry' including a visit to Smart City Expo World Congress for students so that they could discover their path for the future. Faustino Cuadrado talked about adapted transport for people with disabilities and a solution called App&Town, allowing users to plan routes on bus, optimizing the time of their urban journeys. Michael Gould spoke about mobile apps encouraging green living. Zvi Weinstein elaborated on Smart Cities from A to Z and his goal to create a common language to cope with the global smart city phenomena in rapid urbanized world. 'We must technology', he said. Linda Chandler explained the Microsoft collaborative research program Cities Unlocked aimed at exploring the potential technology has in order to enable people living with sight loss to get out and about, independently and confidently, in towns and cities. Chandler stated that the solution not only creates value for citizens but also for the organizations and the partners involved. Huann-Shiuh Shy showcased another cloud-based platform to help visually impaired people, amounting 1 billion in the world. Eventually, Miriam Alarcón spoke about the 'Murs Lliures' initiative, the Wallspot network and the potential of artistic intervention in the city. She ended up by stating that graffiti, when managed, is no longer a problem but 'a great way to boost civic engagement'.

Parallel Sessions
The Future of Artistic Communities in the Democratization of Cities
○ Society

17/11/2016 15:20-16:20

MODERATOR:
José Luis De Vicente / Curator specialized in digital culture, art and technology - Sónar+D - Barcelona - Spain

SPEAKERS:
Peter Friess / Media Policy Directorate - Media Convergence and Social Media, DG Connect - European Commission - Brussels - Belgium
Pere Obrador / Open Innovation program Manager - Telefonica R&D - Barcelona - Spain
Natalie Jeremijenko / Engineer specialized in new environmental proposals for the urban fabric and Artist - Barcelona - Spain
Chris Salter / Research Chair in New Media, Technology and the Senses - Concordia University - Montréal - Canada

José Luis De Vicente started off the session by asking why artists are being embedded in innovation environments and how they can contribute to think about new models of cities. Peter Friess stressed that the intersection of art and technology is the catalyst for the 21st century and talked about the EU STARTS initiative encouraging synergies between the Arts and innovation for technology and society by promoting the inclusion of artists in Horizon 2020 projects. The challenge is to accelerate and intensify the collaboration of artists and creative people with entrepreneurs and technologists with the ambition to enable the STARTS ecosystem. Pere Obrador explained the Open Challenge Telefónica has developed with Laboral Centro de Arte y Creación Industrial in Gijón (Spain), and the projects resulting from that partnership, such as Mapache, a posh toy connected through 3G; Flone, an open source drone project, or Next Things Personal, which transforms the internet traffic in a poetic way. Natalia Jeremijenko underlined the opportunity technology provides

'*Art is a better investment strategy than your pension trust.*'
Natalie Jeremijenko

for social transformation and gave some hints on her work in terms of the 'environmental health clinic', a project to redesign citizens' relationship with natural systems. Finally, Chris Salter emphasized that technology is an indispensable tool for realizing an experimental collectivism and stated that fortunately artists' imagination is not tied to an 18-months-to- market strategy. panelists agreed that artists bring inspiration to innovation departments where engineers don't usually have time to look out the window and see what's going on outside.

Parallel Sessions
Holistic Approaches to Urban Development and Resilience

O **Sustainability**

15/11/2016 11:30-12:30

MODERATOR:
Joan Caba / Architect, Urban Planning Services - Metropolitan Area of Barcelona (AMB) - Spain

SPEAKERS:
Norihiko Nomura / Director General for Climate Change Policy Headquarters - City of Yokohama - Japan
Magnus Qvant / Secretary General - Resilient Regions Association - Malmö - Sweden
Bruno Hervet / Executive Vice President Smart & Resourceful Cities - Suez - Paris - France
Asha Kaushik / Senior Research Associate - Integrated Research and Action for Development (IRADe) - New Delhi - India

Building inclusive, safe, resilient, and sustainable cities requires intensive policy coordination and investment choices. How to promote urban development and encourage resilience in a holistic and effective way? Norihiko Nomura showcased an energy management system combining fuel cells and storage batteries in

'Sustainable management of resources will be the 21st century's challenge.'
Bruno Hervet

condominiums to achieve a low-carbon society and a system of basins as a measure of flood control, which have help Yokohama move towards a sustainable city management. Magnus Qvant advocated for further collaboration between the public and private sectors and proposed a network of resilient communities to tackle urban development challenges. Building inclusive, safe, resilient, and sustainable cities requires intensive policy coordination and investment choices. How to promote urban development and encourage resilience in a holistic and effective way? Norihiko Nomura showcased an energy management system combining fuel cells and storage batteries in condominiums to achieve a low-carbon society and a system of basins as a measure of flood control, which have help Yokohama move towards a sustainable city management. Magnus Qvant advocated for further collaboration between the public and private sectors and proposed a network of resilient communities to tackle urban development challenges.

Parallel Sessions
Addressing Urban Growth Through City Planning

O **Sustainability**

15/11/2016 11:30-12:30

MODERATOR:
Mike Lake / President & CEO - Leading Cities - Boston - USA

SPEAKERS:
Gaetan Siew / Chairperson - Construction Industry Development Board - Port Louis - Mauritius
Alexei Novikov / President, Founder - Habidatum - New York City - USA
Stefan Webb / Head of Projects - Future Cities Catapult - London - UK
Susanne Seitinger / Global Sub-Segment Manager for Open Spaces in Professional Systems - Philips Lighting - Eindhoven - Netherlands

The position of the planner has remained largely stagnant over the past several decades. Speakers explored how the planning profession can and should evolve to match innovation in other sectors and foster smart growth. The importance of access to data and advantages of real-time processing to make the unseen visible were reiterated through the panel. Gaetan Siew showed how Mauritius uses culture and innovation to boost its urban economy. Stefan Webb demonstrated the tools, data and information that planners can use to digitally design, plan and build cities. He also emphasized the need to fall back on experimentation to inform city plans the same way other industries do. The position of the planner has remained largely stagnant over the past several decades. Speakers explored how the planning profession can and should evolve to match innovation in other sectors and foster smart growth. The importance of access to data and advantages of real-time processing to make the unseen visible were reiterated through the panel. Gaetan Siew showed how Mauritius uses culture and innovation to boost its urban economy.

'Linking IT and culture can bring a lot of positive things to the city.'
Gaetan Siew

Stefan Webb demonstrated the tools, data and information that planners can use to digitally design, plan and build cities. He also emphasized the need to fall back on experimentation to inform city plans the same way other industries do.

Parallel Sessions
Cities at the Front of the Climate Change Battlefield
O **Sustainability**

15/11/2016 14:00-15:00

MODERATOR:
Christopher Swope / Managing Editor - Citiscope - Washington DC - USA

SPEAKERS:
Cristina Miclea / Project Manager - C40 Cities Climate Leadership Group - London - UK
Klaus Heidinger / Head, City IT Applications - Siemens, Center of Competence Cities - London - UK
Ellen Fang Liang Hu / Expert, eco-civilization development and research team - China City Development Academy - Beijing - China
Barbara Kreissler / Director B2G professional lighting, Public and Government Affairs - Philips Lighting - Eindhoven - Netherlands

One thing that has been remarkably consistent over the last ten years is the commitment that cities and their mayors are making to doing their part on climate change, as Christopher Swope put to start off the session. Cristina Miclea followed up by reminding how important the next three years will be and how necessary it is to commit and act. She explained how the world's megacities are working together to tackle climate change through the C40 network, which address key topics such as transport, buildings, waste or finance. She also pointed out that the Paris agreement is a great step in the right direction but will not deliver what is needed to keep warming well below 2ºC. One thing that has been remarkably consistent over the last ten years is the commitment that cities and their mayors are making to doing their part on climate change, as Christopher Swope put to start off the session. Cristina Miclea followed up by reminding how important the next three years will be and how necessary it is to commit and act. She explained how the world's megacities are working together to tackle climate change through the

C40 network, which address key topics such as transport, buildings, waste or finance. She also pointed out that the Paris agreement is a great step in the right direction but will not deliver what is needed to keep warming well below 2ºC.

'Everything is connected to everything else, so let's work together to tackle climate change.'
Ellen Fang Liang Hu

Parallel Sessions
Housing and Open Public Spaces at the Core of Inclusive Cities
O **Sustainability**

16/11/2016 11:45-12:45

MODERATOR:
David Bravo / Editor of publicspace.org - Centre de Cultura Contemporània de Barcelona (CCCB) - Barcelona - Spain

SPEAKERS:
Costly Chanza / Director of Town Planning and Estates Services - Blantyre City Council - Malawi
Thomas Ermacora / Founder, Author - Machines Room & Recoded City - London - UK
Antonio Vargas / General Director - Corporación Amigos Parques del Río Medellín - Medellin - Colombia

Streets and public spaces define the character of a city. Yet, how can they contribute to more inclusive and integrated urban environment? Costly Chanza explained that the main problems with open public spaces in Africa are related to the fact that people do not value nor utilize them. This might be because they are too big and difficult to keep in good conditions to be perceived as safe. In this sense, Chanza underlined the need for more compact and mixed cities, where coming up with solutions for creating dynamic and healthy public spaces gets easier. He also laid emphasis on strong local partnerships to achieve this goal. Antonio Vargas followed up with the master plan carried out in Medellin for restoring the public space at the center of the city. He also highlighted the importance of this kind of plans and open projects. During his turn, Thomas Ermacora put emphasis on participatory design and open-source urbanism to develop the sense of ownership in citizens. He also underscored the value of creating and sharing data, as well as the role of Fab Labs and the maker community to allow for neighborhoods to come together and generate the momentum for smart citizenship start to hatch. Speakers concluded that it becomes essential that citizens get involved in the decision-making process to evolve public spaces.

'There is a high correlation between the fragmentation of the quality of life in cities and the quality of spaces altogether.'
Thomas Ermacora

Parallel Sessions
Cities Moving Forward on Clean Energy

O Sustainability

16/11/2016 13:00-14:00

MODERATOR:
Alex Ivancic / Senior Consultant - Aiguasol - Barcelona - Spain

SPEAKERS:
Santiago Creuheras / General Director of Energy Efficiency and Sustainability - SENER - Mexico City - Mexico
Eduard Oró / Energy Consultant - Catalonia Institute for Energy Research (IREC) - Barcelona - Spain
Miguel Ángel García-Fuentes / Researcher - CARTIF Foundation - Boecillo - Spain
Vera Nunes / Project Manager - EDP Distribuição - Lisbon - Portugal

Cities play a vital role in the transition to a clean energy future. Speakers showcased different initiatives aimed at transforming urban energy sectors. Santiago Creuheras shared the energy reform Mexico has undertaken recently and affirmed that the country expects to get 25% of clean energy generation by 2018, which is an important goal for an emerging economy, and to reduce by 42% the energy intensity in the next 30 years. He then presented some specific projects such as the one aiming at changing 42 million light bulbs in the rural area. Miguel Ángel García-Fuentes recalled data is the new oil. Yet, it still needs to be refined, distributed and monetized. He also stressed the need to involve all the stakeholders in the transformation of cities, and particularly citizens, who must be at the center of the process. During his turn, Eduard Oró explained the EU funded RenewIT project, aimed at developing advanced energy simulation tools for integration of renewable energy sources in IT data centers. He also pointed out the need for building more greener data centers as they consume a huge amount of energy and to focus on heat reuse. To end up, Vera Nunes highlighted

'If we put all the data centers in one country, it would be the sixth largest consumer in the world.'
Eduard Oró

the importance of increasing the number of smart citizens having a strong interest in building energy efficient systems. In this sense, she identified some key challenges such as better communication, cooperation between stakeholders or new market structures. Alex Ivancic closed the session by stating that citizens might need to redefine what comfort really is.

Parallel Sessions
Innovative Energy Solutions for a Carbon Constrained World

O Sustainability

16/11/2016 15:30-16:30

MODERATOR:
Eddie Bet Hazavdi / Director of Department of Energy Conservation and Smart Cities Administration - Government of Israel - Jerusalem - Israel

SPEAKERS:
Claus Habfast / Vice Chair - Metropolis of Grenoble - Grenoble - France
Andrés Flores / Project Coordinator - Centro Mario Molina - Mexico D.F. - Mexico
Bart Sloep / Project Manager - MC Automobile (Europe) N.V. - Bovenkerkerweg - Netherlands
Tim Pryce / Head of Public Sector - The Carbon Trust - London - UK

In 1997, the world energy consumption was about 1,500-million-ton oil equivalent. In 2015, this figure was up to 13,000, as Eddie Bet Hazavdi put. Is it possible to move to a new, low-carbon energy scenario? Claus Habfast made clear that 80% of the energy generated in Grenoble is from nuclear, which is a clean source of energy but evidently not a renewable one. The expert stressed that citizens play a major role in carbon footprint reduction and the district is a good scale to experiment and start to make things happen as the Climate, Air and Energy Action Plan showed. Andrés Flores explained how the Centro Mario Molina in Mexico works for reducing the carbon footprint. It has recently developed a tool to assess the sustainability of any housing project and also some indicators to compare cities and make progress. Bart Sloep put on the table how Electric Vehicles (EVs) can contribute to the electricity grid of the future. With the growth of the Internet of Things (IoT), vehicles start to communicate and so is the energy, thus a smart grid including batteries can be created through EVs, he said. Tim Pryce ended up by suggesting tax incentives to create a 'new green deal' to attract investment and foster a more sustainable use of mobility. Eddie Bet Hazavdi closed the session by asking for political leadership to lay out the path.

'The global climate finance challenge is primarily above all else a city climate challenge.'
Tim Pryce

Parallel Sessions
Technology in Resilient Recovery

○ **Sustainability**

17/11/2016 10:00-11:00

MODERATOR:
Dan Lewis/ Chief of the Urban Risk Reduction Unit - UN-Habitat - Nairobi - Kenya

SPEAKERS:
Ares Gabàs / Head of the Urban Resilience Department - Barcelona City Council - Spain
Alfonso Govela / Co-Founder - DigitalCivix - Mexico City - Mexico
Safder Nazir / Middle East Regional Vice President, Smart Cities & IoT - Huawei Technologies - Dubai - UAE
Maria-Cristina Marinescu / Senior Research Staff - Barcelona Supercomputer Center - Barcelona - Spain

'Resilience concept is clearer than smart city so we have a chance to make some kind of difference.'
Maria-Cristina Marinescu

Innovation in technology, Smart Cities, IoT or electronic devices can help scaling smart solutions and products to promote sustainable development goals as underlined in the New Urban Agenda. Ares Gabàs spoke about risk management, risk analysis and risk reduction and how these areas were taken into consideration while creating and improving Barcelona's resilient platform. The city has been working on bringing together public and private data to gather relevant information for citizens. Alfonso Govela echoed that sentiment and brought up the programs Mexico has developed while engaging children and youth to build the cities of the future. 'If we start helping them become digital citizens now, we are effectively changing what the cities could be in their inner function for the years to come', he said. Moreover, he stressed the role played by participation to enable cities to recover after critical events. During his turn, Safder Nazir pointed out that using technology in resilient recovery is important because it is the only way of assuring the information is in a safe place and won't get lost during a disaster. Eventually, Maria-Cristina Marinescu insisted that one big area in which technology can help with is response. She then presented a semantic model of the city to quickly figure out what is going to be affected by an event and thus put the resources where it matters.

Parallel Sessions
Local and Regional Cooperation to Achieve a Balanced Territorial Development

○ **Sustainability**

17/11/2016 11:10-15:10

MODERATOR:
Octavi De la Varga Mas / Executive Director - Metropolis - Barcelona - Spain

SPEAKERS:
Luis Fernando Arboleda / President - Findeter - Bogota - Colombia
Mohamed Jouahri / General Director - Casablanca Events & Animation - Casablanca - Morocco
Julio Sánchez / Director of Innovation – Sicasoft - Spain
Mohamed Lakhlifi / President - E-Madina - Casablanca - Morocco

The creation of coordinated institutional frameworks can advance a balanced territorial development. Yet, finding the key elements in cooperation is not always an easy task. Luis Fernando Arboleda introduced Findeter, a financial institution that offers integral solutions for the development of sustainable territories, and the programs it has fostered, as for example a platform to create innovation centers and to connect different cities through better public space planning. Mohamed Jouahri recalled Morocco has recently changed its administrative division to promote equity. He also emphasized the attractiveness of Casablanca, which is an important hub for investors, and the initiatives created to improve citizens' life as well as the economic development of the region. Julio Sánchez insisted on the fact that technology is an enabler to apply sustainable policies to the territory and introduced Sicasoft' tool to measure the carbon footprint, both suitable for cities and small businesses. Finally, Mohamed Lakhlifi got back to Morocco and stated that cooperation is a key enabler to the transformation of cities. Yet, the main challenge is bringing together all the stakeholders, activate it and accelerate it. The E-Madina cluster, aiming at turning Casablanca into a real smart city, was precisely built with this objective, he said. In the end, speakers agreed that citizens should know that smart projects are designed for them and not against them.

'Cooperation should be placed at the core of transformation.'
Mohamed Lakhlifi

Parallel Sessions
Real-Time Open Data Fuelling the Next Generation of Urban Services

⭘ **Data & Technology**

15/11/2016 11:30-12:30

MODERATOR:
Jarmo Eskelinen / Chief Innovation & Technology Officer - Future Cities Catapult - London - UK

SPEAKERS:
Andrey Belozerov / Deputy CIO - Moscow City Department for Information Technology - Russia
Neill Young / Smart Cities Lead - GSMA - London - UK
Juanjo Hierro / Chief Technology Officer - FIWARE Foundation - Madrid - Spain
Jin-Hyeok Yang / Senior Manager - KT Corp. - Seongnam City - South Korea
Vit Soupal / Head of Big Data strategic initiative EU - Deutsche Telekom - Cologne - Germany

The role of cities as information providers has totally changed through time because of the emergence of data and third party service providers, as Vit Soupal put. Plus, public services' efficiency is strongly affected by this scenario, added Andrey Belozerov. Today, with the raise of the big data sector, mobile operators are becoming key stakeholders since they are a great source for real-time data collection, as pointed out Neill Young. Mobile data can give a good idea of when and where people go, how they move and what they do. This information is very powerful as it can help optimize urban services, or even predict the spread of diseases. However, as Jin-Hyeok Yang pointed out, that real-time collection of data is not all, its openness also brings great challenges and requires new business models. When it comes to big data, the scale at which one can operate is very large; way greater than the city scale. Hence, this common massive resource calls for collaboration, interoperability, a common standardized language and a new paradigm of governance. There lies the role of cities towards

'The increase of data is not a problem, but a challenge.'
Jin-Hyeok Yang

real-time open data, according to Juanjo Hierro. APIs will be the common language to provide accesses to big amounts of different sources of data. Yet, standards must be established. To end up, panelists agreed that the sovereignty of data will be the crucial debate of the near future.

Parallel Sessions
Disruptive Technologies Transforming Cities

⭘ **Data & Technology**

15/11/2016 12:45-13:45

MODERATOR:
John Biggs / Editor-At-Large - TechCrunch - New York - USA

SPEAKERS:
Víctor Mulas / program Lead, Innovation Acceleration program - Innovation Lab - World Bank Group - Washington DC - USA
Tomás Diez / Instigator - Fab City Research Laboratory - Barcelona - Spain
Christian Villum / Project Manager - Danish Design Center - Copenhagen - Denmark
David Andrés / CEO - Sharge.io - Barcelona - Spain

Today, the parade of new technology breakthroughs is relentless and unfolding on many fronts. How can citizens discern the useful ground-breaking gadget from the snake oil that is not doing any good to the city? Even though Victor Mulas made clear that disruptive technologies will mostly come from the urban mobility and food sectors and David Andrés put the accent on blockchain technology, the general opinion of the panel was that the answer is at the human level. Tomás Diez showed his preference for smart citizens over smart cities, while Christian Villum favored disruptive mindsets over disruptive technologies. That said, David Andrés' story demonstrated how hard it is for a new technology to be disruptive when the only way to break through is by convincing cities with contests, hackathons, accelerators, etc. Víctor Mulas clarified that participation should facilitate

'Fab Labs are democratizing the means of production for anyone.'
Tomás Diez

bottom-up initiatives. He added that disruptive mindsets, using co-creation and strategic design can reinvent the usage of existing technologies for disruptive cities. Christian Villum hoped that cities adopt an open-by-default mentality where people can know what they want as a city. Tomas Diez dreamt of a near future where only data is transiting between cities. As for him, open 3D printing allows the democratization of the means of production for everyone by permitting data to transit freely. Inspired by Linux, he was really hoping for new governance models to emerge.

Parallel Sessions
Big Data for More Responsive and Human Cities

⭕ **Data & Technology**

15/11/2016 14:00-15:00

MODERATOR:
Esteve Almirall / Director of Center for Innovation in Cities - ESADE Business & Law School - Barcelona - Spain

SPEAKERS:
Josep Ma. Missé / Secretary of State For Economic Diversification - Government of Andorra - Principality of Andorra
Eduard Haiman / Chief Design Officer, Partner - Habidatum - New York - USA
Vadim Smakhtin / Chief Technology Officer, Partner - Habidatum - New York - USA
Jung Hoon (John) Lee / Associate Dean/Professor of Technology & Innovation Management - Graduate School of Information, Yonsei University - Seoul - South Korea
Barbara Fluegge / Cross-Industry and IoT Taskforce Lead - SAP - St. Gallen - Switzerland

'It can be a small detail that makes data smart.'
Barbara Fluegge

Cities may obtain valuable insights from analysing data collected on their territories through different devices, thus making the most of the big data sector development. Yet, how to couple algorithms with human expertise to improve citizens' life? Josep Ma. Missé started off the session by explaining the vision of the Principality of Andorra in creating a real living lab to test new technologies and develop new solutions for citizens. He also underlined an initiative to map all the Andorran businesses, the development of an autonomous car jointly with the MIT and the creation of the open Andorra Big Data Project, serving as a decision support system to make the right decisions. Vadim Smakhtim added that cities should be perceived as dynamic processes. That is the reason why Habidatum provides not only a platform for big data management but also an analytical framework. Jung Hoon (John) Lee highlighted that cities have to collect different types of data to offer diversity, create Living Labs to provide an ecosystem for big data companies and establish collaborative partnerships to share data with other cities. He concluded that open data quality management is crucial for Smart City initiatives. Finally, Barbara Fluegge pointed out that a coherent approach to urban analytics is needed for the entire ecosystem of the Smart City. Panelists agreed that cities need to know what they are looking for to most optimize the use of data.

Parallel Sessions
Translating IoT into Innovation and Better Services

⭕ **Data & Technology**

16/11/2016 11:45-12:45

MODERATOR:
Ger Baron / Chief Technology Officer - City of Amsterdam - Amsterdam - Netherlands

SPEAKERS:
Archana Vemulapalli / Chief Technology Officer - Government of the District of Columbia - Washington DC - USA
Marta Continente / Director of Innovation, Head Smart Cities - Àrea Metropolitana de Barcelona - Spain
Munish Khetrapal / Managing Director - Solution - IOT and Smart Cities - Cisco Systems - Milpitas - USA
Richard Sims / Senior Project Manager - TTP - Royston - United Kingdom
Eduardo Fernández / Innovation Director - Urbaser - Madrid - Spain

New Internet of Things (IoT) applications leverage ubiquitous connectivity, big data and analytics enabling multiple Smart City initiatives. Yet, they also introduce new challenges for cities. For Archana Vemulapalli, the starting point is understanding the city and seeing which are the issues that residents care about. As expected, when asked, citizens don't mention technology.

'Before you solve the problem, you need to know what the problem is.'
Archana Vemulapalli

Their main concerns are related to health, security and education. Yet, the key is to get them know technology and guide them to understand that IT projects are a source to improve the areas they care about. Marta Continente showed how the metropolitan government in Barcelona is developing a model on Smart City based on listening to citizens' demands to give them an adequate response. The main challenge, she said, is getting actionable information from massive streams of real-time data to develop a smarter public space. During his turn, Munish Khetrapal introduced a platform that accelerates digitalization in the city operation. Today, there are 20 billion devices generating data constantly. When correctly processed, this real-time data can be used to save lives, he said. Richard Sims followed up by introducing a smart lighting solution created for the UK and implementing a new complex device that permits metering and manages faults. Finally, Eduardo Fernandez showcased diverse IoT projects and concluded that this kind of initiatives are profitable when there is a saving of raw material.

Parallel Sessions
Data & Technology Solutions

○ **Data & Technology**

16/11/2016 13:00-14:00

MODERATOR:
Xavier Ferràs / Researcher - University of Vic - Manresa - Spain

SPEAKERS:
Athena Vakali / Professor - Aristotle University - Thessaloniki - Greece
Stefan Truthaen / CEO - hhpberlin - Berlin - Germany
Alar Vörk / Co-founder and CEO - Cityntel - Tallinn - Estonia
Veiko Raime / CEO - Mobi Lab - Tartu - Estonia
Hugo Zaragoza / CEO - Websays - Barcelona - Spain
Josep Paradells / Director - Fundació i2CAT - Barcelona - Spain
Jhon A. Manrique / CTO & Product Manager - BitDistrict Technologies - Barcelona - Spain
Bartolomé Crespí / Smart City projects - Smart Office Palma de Mallorca City Council - Spain
Piero Pelizzaro / Project Manager - Municipality of Milan - Italy
Gregory Cerallo / Co-founder - Sidekick Interactive - Montreal - Canada

Big data and state-of-the-art technologies enable to gain new insight into citizen services and rethink how city solutions are structured in new smart ways. Speakers presented diverse initiatives from the public and private sector that are creating solutions for more sustainable and inclusive cities. Athena Vakali showcased Vol4all, an interactive online platform designed to cater to the needs of volunteers. Stefan Truthaen shared the potential of One, a platform for sharing data to increase safety in cities helping police and fire departments make smarter decisions. Alar Vörk illustrated how building embedded intelligence and creating direct communication between devices can produce better outcomes than using the cloud in certain situations. Veiko Raime enhanced the importance of user experience and gave some hints on the work of Mobi Lab agency. Hugo Zaragoza pointed out that raw data needs much refinement and showcased his solution to clean social media data. Josep Paradells explained how to get new data

'Social media is the best sensor network of your city.'
Hugo Zaragoza

from cities with a sensor network installed on buses and taxis. During his turn, Jhon A. Manrique spoke about augmented reality audio tours and how sounds offer new possibilities to interact with urban environments. Bartolomé Crespí followed up with the need to offer more connectivity and why Palma is creating a vast WiFi network from the beach to the city. Piero Pelizzaro brought up the circular and sustainable projects developed at Milan enabling to test new business models. Eventually, Greg Cerallo showcased an app called Snow Sideckick aimed at making citizens' life easier during winter.

Parallel Sessions
Open, Flexible, Scalable City Platforms

○ **Data & Technology**

17/11/2016 10:00-11:00

MODERATOR:
Daniel Marco / Director of Smart Catalonia - Government of Catalonia - Barcelona - Spain

SPEAKERS:
José Antonio Belmonte / Director of Innovation Office – Tourism Institute of the Region of Murcia - Murcia - Spain
Joe So / Chief Technology Officer, Industry solutions - Huawei Technologies - Shenzhen - China
Paolo Nesi / Chair - University of Florence, DISIT Lab, Km4City - Florence - Italy
Carl Piva / Vice President Strategic programs - TM Forum's Smart City Forum - New Jersey - USA

The most valuable companies in the world, operate as digital platforms. Yet, what should a digital platform for city look like? Jose Antonio Belmonte started the session with the description of the open platform for Murcia. The platform is focused on the tourism industry but may be easily applied to any other area. Its goal is to increase competitiveness, generate information flow, communicate and disseminate products and promote the region as a Smart Destination. Joe So pointed out that the biggest challenge within the industry is the integration of existing architecture with a new one. Therefore, there is a need to build open ICT solutions to provide comprehensive smart city solutions for customers. He also mentioned that Open Labs may serve as platforms where solutions are introduced and tested.

'Open means open to any kind of customization and to any kind of data source.'
Paolo Nesi

As Paolo Nesi put, aggregation and integration of data as well as big data analysis in real time are crucial for smart city projects. Carl Piva echoed that sentiment by underlining that many businesses rely on platforms and currently 'the time has come for cities to act as platforms'. In fact, platforms are ruled by network effect, i.e. the more people use the platform, the more valuable it becomes for the users. In the end, speakers agreed that every city is unique and one-size-fits-all solutions do not exist. Nonetheless companies may help cities build and manage open, flexible and scalable smart city platforms adjusted to their needs.

Parallel Sessions
Unlocking the Potential of the Internet of People, Things and Services

⭕ **Data & Technology**

17/11/2016 14:10-15:10

MODERATOR:
Julio Navío /Vice-dean and coordinator of the Public Policy and Regulation Group - COIT - Madrid - Spain

SPEAKERS:
Svetlana Grant / Director, Future IoT Networks - GSMA - London - UK
Isabel González / Head of Projects, Thyssenkrupp Elevator Innovation Center - Thyssenkrupp - Gijón - Spain
Ignasi Oliver / Director of Superstructure Maintenance – Transports Metropolitans de Barcelona (TMB) - Barcelona - Spain
Pierre Mirlesse / Vice President Public Sector - Hewlett Packard Enterprise – EMEA - Geneva - Switzerland
Bart De Lathouwer / Director, Interoperability program - Open Geospatial Consortium - Wayland - USA

'Citizens want a frictionless engagement with the city.'
Pierre Mirlesse

The equivalent of Manhattan in cities is being built every day in a world counting more connected objects than human beings. This increasing massive internet sets the challenges for cities that need to unlock the potential of the Internet of Things (IoT), People and Services. Ignasi Oliver and Isabel González assured that IoT is at the core of mobility solutions and has clear potential to reduce the last mile problem in public transport as well as its footprint and efficiency. A planning process is necessary to overcome this challenge affirmed Svetlana Grant, but sensor standards are commonly being forgotten and

left aside. And yet, they are necessary to draw the line between private and public ownership, which is crucial to establish the security strategy and raise trust. She also warned that cities will need the capacity to patch all sensors at once in this industry 4.0, but the problem is that security is an afterthought in the excitation of developing and going forward with technologies. Eventually, Bart De Lathouwer focused on the development of urban platforms that can only work if they are based on standards to achieve interoperability. Pierre Mirlesse believed that criteria are needed to achieve a digital identity and then facilitate all services and save time, money and frictions for citizens. Panelists agreed that cities will need to be digital by default, and governments will need to modernize their leadership to permit e-governance.

Parallel Sessions
Challenges and Opportunities in the Digital Age

⭕ **Data & Technology**

17/11/2016 15:20-16:20

MODERATOR:
Rosa María Martín / IT Technical Director - inlab FIB, UPC - Barcelona - Spain

SPEAKERS:
Andy Freire / Minister of Modernization and Technology - City of Buenos Aires - Argentina
Inge Rocker / Vice president - 3DEXPERIENCE City - Waltham - USA
Frank Johannes Kresin / Research Director - Waag Society - Amsterdam - Netherlands
Josep Paradells / Director - Fundació i2CAT - Barcelona - Spain

'The living experience is more important than technologies.'
Inge Rocker

Digital era offers various opportunities but also several challenges. What are the responses that cities may offer in this regard? Andy Freire defined three main urban challenges, i.e. big data, citizens' participation and smart mobility, and stated that data helps understanding different perspectives and do things differently. Inge Rocker focused on the issue of user experience in the digital era, which provides mapping and analyzes of urban processes in a holistic manner. She pointed out that by involving communities, businesses and citizens into modelling, simulation and analytics may facilitate envisioning future urban conditions. Frank Kresin stressed that citizens have a role to play for themselves and

the others as a collectivity; hence, it is more about smart citizens than smart cities. In this sense, he showcased the Smart Citizen Lab in Amsterdam, which operates as a platform turning data into real actions. During his turn, Josep Paradells described numerous ways of getting data from the city as an opportunity in a digital age. Through deploying sensors, using mobile objects, using citizens' activity and getting citizens involvement, more information and knowledge will be created, he stated. All in all, speakers agreed that big data and data analytics may offer both challenges and opportunities in the future. Moreover, it is crucial to respect citizens' privacy and use data for the benefit of communities.

Parallel Sessions
Strategies to Protect Critical Infrastructure and Ensure Digital Safety

⭘ Safety

16/11/2016 13:00-14:00

MODERATOR:
Alfredo Pironti / Managing Consultant - IOActive Labs - Madrid - Spain

SPEAKERS:
Joe Paiva / Chief Information Officer - International Trade Administration, US Army - USA Government - Washington DC - USA
Bernard Ewah / Head of e-government - National Information Technology Development Agency of Nigeria - Abuja - Nigeria
Swadheen Kshatriya / Chief Secretary - Maharashtra State - Mumbai - India

The scale and importance at which the data-driven world has grown now requires nation-state level tools and systems to protect the networks. The first steps are to set up legal frameworks to structure the national security. Following India's plan to develop 100 smart cities, Swadheen Kshatriya argued that new threats and challenges are emerging because while technologies play a crucial role in making a city smart, they are at the same time doors for cyberthreats. Awareness is the key which explains the strong focus on school programs according to the Chief Secretary. Bernard Ewah put a strong emphasis on the need for education as citizens represent 'the weakest link in the cybersecurity chain'. In 2015, Nigeria released the Cybercrime Act 2015 that sets the legal framework at the national level. Still, the problem is that people want cheap hardware and don't think about security, said Joe Paiva. The threats are mostly in network control devices moving toward IoT devices, such as sensors, and the bottleneck is the dependence on the vendor for patches and updates. So, devices should be

'The best way to protect citizens is to educate them.'
Bernard Ewah

treated like a computer or a server, limiting who has access, having patching programs, etc. For him, the network control device of the future will move towards virtual images run somewhere in the cloud. Be as it may, he stressed that city leaders should really care about the platforms and not just the solutions as they are putting 'incredibly important stuff on them'.

Parallel Sessions
Finding the Balance Between Privacy and Security

⭘ Safety

16/11/2016 15:30-16:30

MODERATOR:
Cesar Cerrudo / CTO - IOActive - Parana - Argentina

SPEAKERS:
Eduardo Bohórquez / General Director - Transparencia Mexicana - Mexico City - Mexico
Anne Sandelin / Director, Urban Development Projects - City of Jyväskylä - Finland
Victoria Beltran / Researcher - University of Murcia - Murcia - Spain
Mohamad Amin Hasbini / Senior Security Researcher - Kaspersky Lab - Dubai - UAE

Transparency is often seen as honesty and proactivity, but they are all totally distinct concepts, as Eduardo Bohórquez clarified to start off the session. Even though people has the right to know, open data does not mean public data. It can be private. Still, 'open' means interoperability between different stakeholders through cooperation and somewhere here lays the frontier between security and privacy. According to Mohamad Amin Hasbini, a proof that we are in the need of a new paradigm for the security-privacy relationship of data is that we are always trying to define the kind of privacy needed, wanted and from whom. The security-privacy relationship is incomplete without confidence, hence the contractual liability as a neuralgic point, pointed out Anne Sandelin. Citizens must trust who provides information products or services. This is the reason why cities need to have strong and clear management models for their cybersecurity. However, the data governance makes it hard to use uniform policies because of the large-scale at which smart cities need to connect. In this sense, initiatives like Smartie presented by Victoria Beltran become crucial by creating a distributed framework to share large volumes of heterogeneous information, enabling end-to-end security and trust in information delivery for decision-making purposes and following data owner's privacy requirements. Still, the truth is that providers do not put enough focus on cybersecurity. Thus, cities should act, collaborate and learn from each other.

'The lack of security puts smart cities at risk and creates a fear of the IoT.'
Victoria Beltran

Parallel Sessions
Making Our Cities a Safer Place to Live

○ **Safety**

17/11/2016 10:00-11:00

MODERATOR:
Manu Fernandez / Founder - Ciudades a Escala Humana - Getxo - Spain

SPEAKERS:
Cesar Cerrudo / CTO - IOActive - Parana - Argentina
Samir Saini / Commissioner & CIO - City of Atlanta - USA
Javier Concha / Cloud & IoT Business Director - NEC EMEA Cloud Convergence BU - Madrid - Spain
Vartan Yegiyan / Police Administrator - Los Angeles Police Department - Los Angeles - USA

The concept of a smart city involves bringing together various technologies and solutions. Yet, often, the infrastructure develops faster than security tools do, leaving ample room for abuses and cyberthreats, as Cesar Cerrudo underlined to start off the session. No cyberattacks to cities have been seen so far, but that does not mean there are not possible, Cerrudo added. Javier Concha

followed up by amplifying on the concept of urban safety, which is a multi-dimensional issue ranging from urban crime to cyberattack activities, natural disasters and environmental quality, among others. Therefore, a multi-perspective approach is needed to create safer communities. In this regard, Samir Saini acknowledged the extreme importance of collecting and elaborating data through digital technologies to measure the degree of insecurity (or the perception thereof) to tackle it. Yet, preventing the collection and use of data for privacy reasons is a mistake, as Vartan Yegivan put. Nonetheless, it is the task of legislators and policy-makers to prevent personal information from being misused. Yegivan also underlined the importance of education in preventing urban crimes. Educating children, who are now tech-savvy and able to use data, on how to behave and how to recognize threats is essential in terms of personal safety. Finally, all Panelists acknowledged that safety and security of urban environments is a basic prerequisite for modern cities to thrive and prosper.

'We can't make our cities safer unless we first understand and quantify the degree in which they are unsafe.'
Samir Saini

Joanna Drake: Sustainable Cities are a Common Priority

○ **Circular Economy**

15/11/2016 10:30-11:00

MODERATOR:
Casper Jorna / CE100 Program Lead Ellen MacArthur Foundation - London - UK

SPEAKERS:
Joanna Drake / Deputy Director-General - Directorate-General Environment- European Commission - UK

A circular economy is restorative and regenerative by design. Joanna Drake highlighted the main challenges and opportunities of a Circular Economy in an urban context, as more than 90% of the global population will live in cities by 2050. She said that sustainable cities are a common priority. For a good reason: If society keeps on consuming resources at the same rate, by 2050 three times more material resources will be needed globally. This is simply not possible. Hence, in 2015, the European Union created the Circular Economy package with this mantra in mind. Objectives figure in the EU Environmental Action Plan and the United Nations New Urban Agenda. Cities can benefit from the triple win Circular Economy brings. From the economic standpoint, it is estimated that increasing resource productivity 30 % by 2030 could boost GDP by an extra 1%, while creating 2 million jobs. In addition, EU businesses could save €600 Billion from waste prevention, reuse and similar measures. Environmentally speaking, it could reduce the pressure over resources and diminish greenhouse gases emissions by 2-4%. The third advantage is social, as a cleaner environment improves health and boost job creation. For Drake, this is a crucial contribution to address global environmental challenges and climate change. The EC Deputy Director-General finally underlined that innovation has to be at the

'Shifting to a more resource-efficient Circular Economy offers the potential to significantly improve our competitiveness.'
Joanna Drake

central stage of the Circular Economy, as it should bring about the new technologies and the new business models in order to make it happen on the ground.

Circular Economy, Social Innovation, Fab City, Collaborative Society: How Paris is Using New Economies to Change the City

○ Circular Economy

15/11/2016 11:00-11:20

MODERATOR:
Casper Jorna / CE100 Program Lead Ellen MacArthur Foundation - London - UK

SPEAKERS:
Antoinette Guhl / Deputy Mayor - Paris City Council - Paris – France

The Club of Rome estimates that Circular Economy could reduce up to 70% of greenhouse gases emissions and decrease substantially the extraction of natural resources. Antoinette Guhl stressed that Paris thinks it won't be any ecological transition without economic transition. That is the reason why in 2014 France decided to turn to a Circular Economy. The strategy was based on collective collaboration. More than 200 actors participated, and 25 collectivities worked all together in the Circular Economy Convention for defining that strategy. As a result, 65 proposals were published in a White Paper of Circular Economy for Greater Paris, which is an important part of Paris Smart City Plan.

For the last couple of years, Paris has been implementing Circular Economy initiatives, and these are starting to bring positive results. The city council undertakes 15 new actions each year. Among them is a plan against food waste including initiatives of in-situ composting, or methanization. Moreover, facilitating places where goods are repaired and resold at cheaper prices is another initiative, as well as an ambitious and responsible public procurement policy. This year the city council is creating incubators for circular economy, and focuses on actions for in situ production to improve the urban metabolism, among other new actions. Antoinette Guhl sustained that society is facing a big change. Big cities can influence on international policies, and can drive the change to an inclusive and circular economy.

'Smart Cities are Inclusive Cities.'
Antoinette Guhl

Designing a Circular City

○ Circular Economy

15/11/2016 11:20-12:35

MODERATOR:
Ashima Sukdiev / Cities and Regions Lead - Ellen MacArthur Foundation

SPEAKERS:
Chris Grantham / Circular Economy Portfolio Director - IDEO - UK
Owen Zachariasse / Innovation and Sustainability - Delta Development – Netherlands
Steve Bowyer / Chief Executive Opportunity - Peterborough – UK

What does design for a Circular City mean? Ashima Sukdiev started off the session by reminding that a circular economy offers a chance to rethink how to design and operate urban systems. Chris Grantham stressed that the whole point of the circular economy is thinking about a regenerative economic system not just a transactional one and note the need for clearing away any preconceptions on the fact that sustainability takes longer and is more expensive. He was convinced that circular cities will be connected internationally in terms of design communities and data base communities, but then also kind of localized. During his turn, Owen Zachariasse showcased the Park 2020 project, developed with the Cradle to Cradle® guiding principles, which are 'the design paradigm for the circular economy', according to him. Hence, the project optimized the function and characteristics of the square meters as well as the building and residual value. Finally, Steve Bowyer explained that the approach of Peterborough, a city of 190,000 population, to circular economy is very much people based and bottom-up. Peterborough is also focusing on cultivating the DNA of the city, where fostering local creations is important not only to help tackle challenges but to create a unique economy. Speakers agreed that to foster the value of a circular economy focus must be placed not only on technology but on truly improving people's quality of life.

'We have to build wise buildings rather than smart buildings.'
Owen Zachariasse

Association of Cities and Regions for Sustainable Resource Management

○ Circular Economy

15/11/2016 12:50-13:10

MODERATOR:
Casper Jorna / CE100 Program Lead Ellen MacArthur Foundation - London - UK

SPEAKERS:
Françoise Bonnet / Secretary General - ACR+ - Brussels – Belgium

ACR+ is an international network of cities and regions who share the aim of promoting smart resource consumption and sustainable management of waste through prevention at source, reuse and recycling. Françoise Bonnet stressed that the network was born with two main ideas: reducing the waste production and work on a more multi-stakeholder approach. Yet, since 2014, its vision is much broader as it's not about 'a system optimization but a system change'. Hence, in addition, the network promotes 'the local aspects' and the short cycle to minimize environmental impacts and 'boost local economy', whenever it's possible. ACR+ works at local and regional levels and pays attention both to the demand side and the supply side. In that sense, Bonnet highlighted that promoting green products equals boosting new business models and being an example for citizens. On the supply side, she stressed the importance of a well-shaped infrastructure environment, as well as fiscal and economic instruments, and a strong legal framework.

'Circular economy is everywhere and we still believe that if we are together we are stronger.'
Françoise Bonnet

With this philosophy, in 2014, ACR+ created the Circular Europe Network to help local authorities to implement Circular Economy strategies in their territory. The speaker also emphasized the key role public authorities have in putting together producers and consumers and the need to educate people, not only citizens but also other stakeholders like businesses, to really close the loop.

Making Things Happen: Taking Forward Scotland's Ambition for a Circular Economy

○ Circular Economy

15/11/2016 13:10-13:30

MODERATOR:
Casper Jorna / CE100 Program Lead Ellen MacArthur Foundation - London - UK

SPEAKERS:
Iain Gulland / Chief Executive - Zero Waste Scotland - Stirling – UK

Iain Gulland started off the session by presenting Zero Waste Scotland (ZWS), an organization working with businesses, communities, individuals and local authorities to help them reduce waste, recycle more and use resources sustainably. ZWS was set up in 2010 and is aligned with the Scottish Government's policies on waste, resources, energy efficiency, the circular economy and climate change. Gulland made clear adopting more circular practices could bring huge benefits as well as 11 million tons CO2 saving, which is quite significant. He also mentioned that the organization has involved many stakeholders in the debate around the idea of Circular Economy. He then showcased various examples of companies and initiatives around Circular Economy, such as the whiskey industry turning whiskey into high-value fuel and other protein substitutes. In fact, SMEs are coming together wanting to share and collaborate on several projects in Scotland and take those forward, he insisted. ZWS is also collaborating with several institutions to foster repairing and developing new professional skills which will be much needed when the Circular Economy really takes off in 10-15 years' time. In Glasgow, ZWS made a city scan to understand the flows of materials and glean new business opportunities. Gulland ended up by stating that what really makes Circular Economy happen is the fact that 'people will come together and collaborate.'

'Collaboration is the word we should really shout about.'
Iain Gulland

Connecting Technical Resources in Cities

◯ Circular Economy

15/11/2016 14:45-16:00

MODERATOR:
Joel Curado / Technology Strategist - CISCO SYSTEMS - Geneva - Switzerland

SPEAKERS:
Katharine Tomoff / Vice President Shared Value - Deutsche Post DHL Group - Bonn - Germany
Julio Sánchez / Innovation Manager - Sicasoft – Spain
Jeff Merritt / Director of Innovation - City of New York – USA

Katharine Tomoff started off the session by explaining why logistics play a key part in the Circular Economy and why information technologies can make logistics smarter and cheaper, bearing in mind that the physical infrastructure is also needed to make this happen. Julio Sánchez brought up the perspective of a small company focusing on intelligent management of energy, water and climate change. He presented the case of La Coruña (Spain), where the company collected information on the carbon and water footprint from various businesses to improve it. At this turn, Joel Curado stressed that infrastructure is also needed to hook things up and jumped on the occasion to underline the advantages of Cisco's Fog Computing solution enabling to process data at the edge, thus directly from sensors or cameras. Finally, Jeff Merritt talked about the complexity of implementing IoT solutions at scale in a large city like New York, with 8.5 million people. 'We're talking about buying a lot of technology and the technology industry is not necessarily built on the Circular Economy', he pointed out. Hence, he wondered whether technology itself can evolve over time and be transformed to find a balance between using it to increase efficiency and making sure that doesn't undermine the entire goal of Circular Economy. In this sense, New York is developing some guidelines for the Internet of Things rooted in best practices from cities around the world. 'We need to be thinking of building for tomorrow and not just for today', he concluded.

'There is an incredible amount of promise with IoT when it comes to Circular Economy.'
Jeff Merritt

Creating Restorative and Regenerative Systems in Cities

◯ Circular Economy

15/11/2016 17:15-18:15

MODERATOR:
Andrew Morlet / Chief Executive - Ellen MacArthur Foundation

SPEAKERS:
Joel Curado / Technology Strategist - CISCO SYSTEMS - Geneva - Switzerland
Owen Zachariasse / Innovation and Sustainability - Delta Development - USA
Iain Gulland / Chief Executive - Zero Waste Scotland - United Kingdom
Anita Ravlic / DEBE - Agence d'Écologie Urbaine – France

Collaboration is said to be the key factor for circular economy to flourish, but which are the main stakeholders, what is their role and how can they get involved? Panelists shared their vision on stakeholder engagement from their different perspectives and experiences. At city level, Anita Ravlic mentioned the 'old but effective way' of gathering in working groups organized by topics to make the action plan more concrete. Iain Gulland added the idea of setting a 'very broad picture' and giving free space for people to interact and explore instead of focusing on fulfilling targets and regulation. Both Ravlic and Gulland agreed that SMEs and entrepreneurs play a key role in developing new solutions for the administration and in interconnecting people. Joel Curado was convinced that 'there is room for big organizations to help SMEs', for instance, inviting them to work in their innovation centers. From a company perspective, Owen Zachariasse highlighted the importance of engaging with supply chains. In that sense, a more shared vision approach instead of a more cost-oriented one would certainly make the business more effective and efficient and would enable innovation. Public circular procurement is a big opportunity to accelerate circular economy but more information and collaboration at this level is needed. Finally, panelists agreed it is still necessary to bring all the stakeholders together to collectively share ideas, needs, risks and visions to identify solutions.

'No one has written the rule book on how to turn the city into a circular city.'
Iain Gulland

Circular Lighting

O Circular Economy

16/11/2016 10:40-11:00

MODERATOR:
Roy Vercoulen / Co-Founder - CircularIQ - Amsterdam - Netherlands

SPEAKERS:
Anton Brummelhuis / Senior Director Sustainability - Philips Lighting - Eindhoven - Netherlands

'If you provide an identity to materials you can do a better job in recovering and re-purposing them.'
Anton Brummelhuis

Population growth, limited resources and the increasing digitalization have an impact on the lighting sector; they result in an increased demand for light, digital light and energy efficiency. Anton Brummelhuis explained the sustainability vision of Philips and how the company has shift to a circular lightning business model, focusing on building dedicated luminaires 'optimized for a circular economy', say easily upgraded and disassembled, easily maintained, modular from nature and including elements easily recovered so that no waste is leaked to landfill. Phillips Lighting also decided to offer lighting as a service. A good example of this is its collaboration with Schiphol airport in Amsterdam, which didn't buy luminaires but a 'light performance', meaning that the airport pays an annual fee and the maintenance and the energy costs are Philips' responsibility. This concept is a novelty. Hence, having an open dialogue and exchanging knowledge was crucial to define the service. A service like this only makes sense when both partners win, said Brummelhuis. Floor Felten joined the conversation to enhance that Schiphol aims at being a zero-waste airport by 2030 and despite the fact that it takes effort for people to engage in a different path, it is worth.

Future Positive Products, powered by Cradle to Cradle®

O Circular Economy

16/11/2016 11:00-11:20

MODERATOR:
Roy Vercoulen / Co-Founder - CircularIQ - Amsterdam - Netherlands

SPEAKERS:
Lewis Perkins / President - Cradle to Cradle Products Innovation Institute - San Francisco – USA

What would it look like if products had a positive impact on the environment and humanity? Lewis Perkins shared how the Cradle to Cradle® vision and the Cradle to Cradle Certified™ products program is instrumental in making sure that materials, components and products that can be perpetually cycled are effectively created. He started off by reminding that the mission at the Cradle to Cradle Products Innovation Institute, which works with 350 companies currently, is 'turning the making of things into a positive force for people and planet.' In this sense, the Cradle to Cradle point of view is based on three principles: waste as nutrient either for technical or biological cycle; the circularity of energy from clean sources and the celebration of abundance.

Perkins also noted that the concept of safe materials to be perpetually cycled should be embraced. This perspective really moves beyond screening out bad known chemicals such as carcinogens, mutagens or reproductive toxicants. It's also about optimizing materials for their intended use and where they're going next. Hence, material health and material re-use is about the designer being able to choose what materials have highest potential to go into future cycles. The President of Cradle to Cradle Products Innovation Institute made a call for action so that the building blocks going into Circular Economy are also made with clean energy, clean water and clean social practices. He ended up by asking the industry to start working together to create these solutions.

'Our issues around production and consumption may really be a design flaw that we can now address.'
Lewis Perkins

Financing Transition Towards Circular Economy in Cities

○ **Circular Economy**

16/11/2016 11:20-12:35

MODERATOR:
Jamie Butterworth / Director - Circularity Capital – Edinburgh - UK

SPEAKERS:
Gerald Naber / Vice President Sustainable Finance - ING Bank - Amsterdam - Netherlands
Frido Kraanen / Principal Director Societal Impact PGGM - Zeist - Netherlands
Wayne Hubbard / Chief Operating Officer - London Waste and Recycling Board – London - UK
Massimiano Tellini / Head of Circular Economy - INTESA SANPAOLO – Turin - Italy

The transition to Circular Economy needs capital and investments at some significant scale. Furthermore, to move the whole economy to a circular state, 'capital markets themselves need to change', as Jamie Butterworth put to start off the session. Yet, why would one be interested in investing in the Circular Economy? Gerald Naber acknowledged that people perfectly understands the sustainability concept and see the opportunity. Frido Kraanen further added that sustainable business models adapt much better to new conditions. Wayne Hubbard explained that London is trying to move faster to the Circular Economy, as 'recycling is not enough' and the city needs to be 'more systemic in its use of resources'. To that purpose, it has identified some key sectors where the transition to circular models can be accelerated. These are the built environment, food, textiles, plastics and electrics.

Getting lots of businesses innovating in those areas starts to generate a system that is 'regenerative by design', he stressed. Massimiano Tellini followed up by insisting that 'productivity can be boosted thanks to circular business models' and that financial institutions should re-think and refresh the concept of risk, as technology allows to reduce it. As for financing a product-as-a-service system, Gerald Naber acknowledged that the shift from selling a product to rental or leasing is not simple at all. In this sense, Frido Kraanen saw changes coming in the insurance sector. In the end, panelists agreed that more incentives are needed to go away from linear economy to embrace circular models.

'*Circular Economy is a great opportunity to rethink the concept of risk in the financial industry.*'
Massimiano Tellini

New Plastics Economy in Cities

○ **Circular Economy**

16/11/2016 12:35-13:50

MODERATOR:
Rob Opsomer / New Plastics Economy Lead, Ellen MacArthur Foundation

SPEAKERS:
Jean Marc Boursier / Group Senior Executive Vice President - SUEZ
Wayne Hubbard / COO - LWARB - UK
Jorge Serrano / Companies & Eco-design Manager Ecoembes – Spain

Plastics are all around us. We all benefit from them. Yet, just 14% of global plastic packaging is recycled and nearly a third leaks into ecosystems. As Rob Opsomer put to start off the session, plastics are one of the most iconic example of 'take, make and dispose' linear economy. The New Plastics Economy Initiative has born to tackle this issue and move towards a plastic system that works, he added. Cities and municipalities play an essential role in this debate. Wayne Hubbard explained that London has 33 municipalities and each one has its own waste collection authority. They are currently collaborating with boroughs to harmonize the collection system, because that helps to get an economy of scale. Jean-Marc Boursier remarked that in Europe the goal is to recycle 55 % of plastics by 2025. Yet, today, manufacturing recycled plastic remains tricky as the heterogeneity of the material recovered makes complex to recycle it. Plus, buying recovered plastic is still about 20% more expensive than virgin. In fact, only 7% is coming from recycled polymer, which indicates a high need for policy tax and collection incentives. During his turn, Jorge Serrano explained how Ecoembes works on maximizing recycling of household packaging waste in Spain. The company prioritizes eco-design of packaging to increase its recyclability, to include some recycled material in it, and to avoid the mixing of materials in the same packaging. It also is starting to test online monitoring of the filling levels of the waste containers and localization of vehicles. Eventually, panelists agreed that it is critical to take measures that make recycled material cheaper than virgin, and to foster collaboration between companies, population and administrations.

'*Cities are innovation hubs for the New Plastics Economy.*'
Rob Opsomer

Symbiotic Urban Industries

○ Circular Economy

16/11/2016 15:00-16:15

MODERATOR:
Alba Cabañas / Technical Area Director - Foment, Confederation of Business of Catalonia - Barcelona - Spain

SPEAKERS:
Rachel Lombardi / Director, Business Development / International Synergies Ltd – Birmingham - UK
Peer Olander Nørgaard / Head of Communication - Symbiosis Center Denmark - Kalundborg, Denmark
Alfred Vara / Head of the Prevention Department - ARC - Barcelona - Spain

'Connections for industrial symbiosis are built and based on trust.'
Peer Olander Nørgaard

Industrial symbiosis is a tool for Circular Economy which is delivering results in every country. Rachel Lombardi, who's been doing industrial symbiosis for 15-20 years, started off the session by acknowledging that the industrial symbiosis concept is not a useful communication although the reality behind it brings lots of opportunities. The most important part about it, said Lombardi, is working across sectors. '20% of your opportunities are within your sector, the other 80% are outside your sector', she stated. The idea is finding a new use for the stuff you can't use in your own process. Peer Olander Nørgaard recalled that industrial symbiosis cases do not arise by themselves, so they need support. Hence, the Symbiosis Center Denmark is trying to inspire others 'to create more for less'. Nørgaard emphasized the importance of commitment and trust in industrial symbiosis, as partners have to find a common solution. Yet, 'if you don't have the good business case, you probably not going to have the commitment', he added. During his turn, Alfred Vara acknowledged that the Confederation of Business of Catalonia is just taking off in the field of industrial symbiosis and presented some ongoing projects, such as the one taking place in Manresa and gathering various actors from the public and the private sector. In the end, panelists agreed that the strategy development of industrial symbiosis in cities is fascinating and can improve the use of resources.

Emerging Innovation in SMEs

○ Circular Economy

16/11/2016 16:15-17:30

MODERATOR:
Catherine Joce / Circular Economy Lead - Knowledge Transfer Network - Huntingdon - UK

SPEAKERS:
Kate Daly / Senior Vice President - New York City Economic Development Corporation - New York - USA
Eric Logtens / CEO – ECOR Europe – Netherlands
Mariona Sans / Business Innovation Manager - ACCIÓ - Barcelona - Spain
Enrique de Villamore / Director - SCP/RAC - Barcelona – Spain

Catherine Joce started off the session by stating that 'SMEs and start-ups can work as a powerful engine for change'. She then introduced the Knowledge Transfer Network (KTN), an organization funded by the UK government essentially acting as a networking service for businesses and supporting innovative ideas. KTN brings together over 500 innovators and has helped more than 70 companies access grant funding to do circular economy projects. Kate Daly talked about New York City's efforts to integrate Circular Economy into some of the thinking of emerging innovation, as the city creates 24,000 tons of waste every day. Daly highlighted that the city is very focused on fostering a both resilient and diverse economic growth strategy. So, it works across multiple sectors with different tools to create hubs for cross-pollination of emerging technologies within diverse sectors. During his turn, Eric Logtens underlined that cities should 'initiate, facilitate and catalyze' SMEs journey to Circular Economy and explained ECOR's vision to enable more types of waste to be recycled. Mariona Sans followed up by presenting some figures from the Baròmetre de la Innovació, revealing that 400 companies are offering diverse

'The Mediterranean region is one of the leading regions in the transition to green and Circular Economy.'
Enrique de Villamore

solutions related to Circular Economy and the total turnover is about €4,000 M. Finally, Enrique de Villamore presented the Regional Activity Center for Sustainable Consumption and Production based in Barcelona and working for the cooperation of the 21 Mediterranean countries. Catherine Joce closed the session by saying that 'we are far from circular perfection. Now, it's more about how we get there.'

The Inclusive Economy

O Circular Economy

16/11/2016 17:30-18:30

MODERATOR:
Roy Vercoulen / Co-Founder - CircularIQ - Netherlands

SPEAKERS:
Catherine Joce / Circular Economy Lead - Knowledge Transfer Network - Huntingdon – UK
Kate Daly / Senior Vice President - New York City Economic Development Corporation - New York – USA
Peer Olander Nørgaard / Head of Communication - Symbiosis Center Denmark - Kalundborg, Denmark
Massimiano Tellini / Head of Circular Economy - INTESA SANPAOLO – Turin – Italy

'Cooperation is the main driver for new value creation in the sharing and Circular Economy.'
Massimiano Tellini

Roy Vercoulen kicked off the session with a paradox: 'We have more and more technology to connect with others. Yet, it seems we are more and more disconnected'. Hence, he asked the speakers for examples of opportunities to collaborate and connect with others in supply chains or communities to accelerate the transition towards a Circular Economy. Kate Daly noted that there is inevitably a reaction to the mechanization and industrialization that are results in movements that a very ecosystem building and community facing. Catherine Joce stated that it is quantified that the sharing economy is a 9 billion opportunity in the UK. She also talked about the example of

Peterborough, where there's a strange mixture of companies in one industrial area. From a financial perspective, Max Tellini stressed that Circular Economy is a powerful tool in fostering cooperation thanks to trust. He added financial institutions need to reframe the concept of opportunity and cited as good examples of cooperation car-sharing solutions and real estate. Peer Olander Nørgaard summarized his sentiment in a phrase: 'systems make it possible, people make it happen.' Yet, he put on the table the divide between young and elderly people in understanding Circular Economy concepts. Kate Daly followed up by highlighting that the global maker movement is one way to link people together and addressing this divide. Max Tellini concluded that 'we don't need to re-engineer human beings but go back to what human beings are, collectively and working together.' panelists agreed that alternative models such as the Circular Economy empower both individuals and entrepreneurs.

How to transition from linear to circular. From the 'big data' to the 'right' data

O Circular Economy

17/11/2016 10:00-10:20

MODERATOR:
Lewis Perkins / President - Cradle to Cradle Products Innovation Institute - San Francisco - USA

SPEAKERS:
Roy Vercoulen / Co-Founder - CircularIQ - Amsterdam – Netherlands

Roy Vercoulen started off the session by underscoring that connectivity is paramount and that without interaction and collaboration there will be no progress. Yet, support systems for such connectivity between companies, customers, the supply chain and other stakeholders are crucial to facilitate change. Another notion he put forward is that for every individual there are different aspects of Circular Economy that could be important. The third notion he pointed out is that Circular Economy is not just about washing machines or light as a service. 'It's about human health, environmental health, this is about us, about working towards restorative and regenerative systems', he said. Despite technical connectivity, people are immersed in their individual tracks. Yet for this model to really reap benefits on a system level, people need to transcend individual ambitions and work towards collaboration. Hence, connectivity is key. The Internet empowers individuals and foster togetherness, insisted Vercoulen. On the other hand, the Co-Founder of CircularIQ stated that exaggerated consumerism is ending and people are starting to get aware of that. In addition, data in itself is meaningless. Hence, it's very important to think what

dataset is relevant before collecting any information and what reliability can be assured. Using Internet in an efficient way to collect and get data from suppliers becomes more and more important, he insisted. Indeed, CircularIQ has created a platform to collect data that is relevant to the user, he concluded.

'Exaggerated consumerism is ending, people are becoming aware it's not sustainable.'
Roy Vercoulen

100% Circular - Towards a Sustainable Fashion Future

O Circular Economy

17/11/2016 10:25-10:45

MODERATOR:
Lewis Perkins / President - Cradle to Cradle Products Innovation Institute - San Francisco - USA

SPEAKERS:
Cecilia Brännsten / Sustainability Business Expert H&M - Stockholm - Sweden

Cecilia Brännsten made it clear from the very beginning: '100% circular is the only way forward towards a more sustainable fashion future.' The sustainability business expert at H&M, which is present in more than 62 countries with more than 4,000 fashion stores, stated that sustainability is embedded in the company's idea. Yet, that means promoting 'a systemic change in the way fashion is made and used', as currently more than half of the 90 million tons of textiles produced each year end up in landfills.

H&M wants to lead this change towards a circular fashion industry using recycled or sustainable sourced materials, introducing a more sustainable way of production and more long-last products, repairing clothes and giving tips and tricks to users through the website. 'We want to make fashion In 2013, H&M started to collect clothes and home textiles in all its stores worldwide, regardless of brand and condition to reuse and recycle. So far, the company has globally collected 38,000 tons of materials for H&M collections. Moreover, the fashion firm aims at using only sustainable cotton by 2020 and is working on several innovation programs. For instance, H&M Foundation has partnered with The Hong Kong Research Institute of Textiles and Apparel to develop technologies to recycle clothes made from textile blends into new clothes. To foster that change, the company is also promoting a Global Change Award. Cecilia Brännsten concluded by insisting that circularity will be the key for future success in the fashion industry.

'We want to make fashion sustainable and sustainability fashionable.'
Cecilia Brännsten

The Circular Economy: Achieving Sustainable Benefits

O Circular Economy

17/11/2016 10:50-11:10

MODERATOR:
Lewis Perkins / President - Cradle to Cradle Products Innovation Institute - San Francisco - USA

SPEAKERS:
Marcus Gover / CEO - WRAP - Banbury – UK

Marcus Gover started off the session by explaining that the Waste and Resources Action Program (WRAP) was established in 2000 in the United Kingdom to achieve a circular economy through helping individuals and communities reduce waste, develop sustainable products and use resources in an efficient way. That is the reason why WRAP focuses on food, drink, textiles and electronics, as they account for 25% of UK's carbon footprint, 80% of water footprint and 40% of household waste. To tackle these issues, WRAP concentrates on the three 'R's', i.e. Re-inventing design and production, Re-thinking consumption and use, and Redefining re-use and recycling, which are often integrated in European programs such as REBus (Resource Efficient Business Models) or ECAP (European Clothing Action Plan).

Gover presented several initiatives and companies following those principles, such as Alexander Wood, who is supplying clothing designed to last; Miele, which is selling washing machines tested to last for 20 years, or a laundry service to remove the need for the washing machine itself. For the citizens, it's all about buying what they really need, using what they have, repairing goods and using things for longer. A dramatic increase in recycling, manufacturing and service models would create three million jobs and reduce unemployment by half a million, said WRAP CEO. Europe could really benefit from that, Gover added. Moreover, going on to the Circular Economy package represents nearly 500 million of Gross Value Added (GVA) to the economy in Europe. That is a big economic prize, he concluded.

'Circular economy is an opportunity for economic growth and employment.'
Marcus Gover

From Ownership to Service

○ Circular Economy

17/11/2016 11:15-12:30

MODERATOR:
Arnau Queralt / Director - Advisory Council for the Sustainable Development of Catalonia, CADS - Ministry of Transparency and Foreign and Institutional Relations and Affairs - Barcelona - Spain

SPEAKERS:
Ramón Arratia / Sustainability European Director - Interface EMEA - Scherpenzeel - Netherlands
Arturo Fernández / CEO - Grupo Construcía - Sant Cugat del Vallès - Spain
Malin Nordin / Development leader - IKEA of Sweden AB; Inter IKEA group - Älmhult – Sweden

New business models such as sharing and leasing redefine the relationship between people and companies. Yet, adopting them constitutes an important challenge. Ramón Arratia, working at a company manufacturing modular carpets, started off the session with a confession: his firm failed at introducing a leasing model. Why? 'Nobody wants to rent or lease the wheel of a car. Our product is the wheel of a building', he admitted. Hence, the company provides other services, such as concept design services, installation services and recycling services to keep on striving for sustainability values. In developing this model, Construcía aims at becoming the first company to use about 70 to 80% of C2C Certified products by 2020. Malin Nordin followed up by explaining how consumers' behavior is impacting a company like Ikea in the context of circularity. She stressed that Circular Economy is the enabler to reach the company's vision, i.e. to create better life for people. She also noted that consumers are changing and becoming very concerned with throwing things away. Ikea wants to help these consumers who don't want to be wasteful. Panelists echoed this sentiment.

'We need to design cities which are modular.'
Ramón Arratia

Keeping Nutrients in Cities

○ Circular Economy

17/11/2016 12:45-14:00

MODERATOR:
Henry Saint Bris / Senior Vice President Marketing & Institutional Relations - SUEZ - France

SPEAKERS:
Teresa Guerrero / Head of Organic Matter Department Agència de Residus de Catalunya - Barcelona - Spain
Silvio Elías / General Director VERITAS - Spain
Joan Rieradevall Pons / Professor Chemical, Biological and Environmental Engineering Department ICTA Researcher - UAB - Spain

Henry Saint Bris started off the session by noting that cities are nutrient concentrators with little return to agricultural system. Only 10% of the municipal solid waste collected in OECD countries in 2013 was composted or anaerobically disposed. Teresa Guerrero said that it is fundamental to have a good and harmonized collection system. An especially successful one is the door-to-door system. As an example of circularity, she also introduced Revolta, a local project where a school and a restaurant provide their food waste to an agricultural cooperative, which dries and compost it, obtaining a fertilizer for its crops. Vegetables and fruits are then sold to the school and the restaurant. Joan Rieradevall followed up by recalling that cities import huge amounts of food and that has a big impact. A possible solution to this problem is urban agriculture, he said. Growing food in cities reduces pressure to fertile soil, and decrease distribution distances and costs. Some supermarkets in the United States are already offering products grown on their own roof. Rieradevall also talked about Fertilecity, an urban rooftop farming project that investigates the integration of greenhouses in roofs. During his turn, Silvio Elías showcased La

'There is a need for harmonization of the collection system from one city to another.'
Henry Saint Bris

Cuina Project, aimed at cooking and recovering spoiled fruits and vegetables that customers usually refuse to buy. He explained how Veritas has trained its employees for that purpose and concluded by underlining the necessity of implementing a new system of taxing which stimulates sustainable initiatives.

Circular Innovative Initiatives

⬡ Circular Economy

17/11/2016 15:15-16:15

SPEAKERS:
Adrian Griffiths / Founder and CEO - Recycling Technologies - Swindon - UK
Jordi Oliver / CEO - Inèdit - Barcelona - Spain
Marta Ruiz / Construction Manager - Graphenstone - Spain

Speakers presented diverse initiatives to cut resource use, reduce waste and boost recycling, thus making the economy more sustainable and competitive. Adrian Griffiths started off the session by acknowledging that plastic is 'a fantastic material', but it's pretty shocking to find out what it happens to it at the end of its life. Shockingly, 40% of it ends up in landfill and 32% of it ends up in the ecosystem. To address this issue, Recycling Technologies UK introduced a system converting unsorted residual plastic waste into a valuable low sulphur hydrocarbon. Each machine does a ton an hour and has 20-25 years, explained Griffiths. This brings a lot of possibilities. Yet, he concluded, 'mechanical recycling can be done much better than it currently is.' Speakers presented diverse initiatives to cut resource use, reduce waste and boost recycling, thus making the economy more sustainable and competitive. Adrian Griffiths started off the session by acknowledging that plastic is 'a fantastic material', but it's pretty shocking to find out what it happens to it at the end of its life. Shockingly, 40% of it ends up in landfill and 32% of it ends up in the ecosystem. To address this issue, Recycling Technologies UK introduced a system converting unsorted residual plastic waste into a valuable low sulphur hydrocarbon. Each machine does a ton an hour and has 20-25 years, explained Griffiths. This brings a lot of possibilities. Yet, he concluded, 'mechanical recycling can be done much better than it currently is.'

'By 2025, there will be 1 ton of plastic in the oceans for every 3 tons of fish and that's shocking.'
Adrian Griffiths

Circulab. Circular Economy Workshop

⬡ Circular Economy

17/11/2016 16:30-18:00

ORGANIZED BY:
Creafutur and Group381

INTRODUCED BY:
Charlotte Bouchet / Managing Director - Creafutur - Barcelona - Spain

The Circulab game is a business game that helps organizations seize the economic, social and environmental opportunities of the Circular Economy. Charlotte Bouchet made a brief introduction on the differences between the linear and the Circular Economy model and the importance of reusing materials, repairing, remaking the products and recycling. She also gave some examples of successful Circular Economy models, such as the electric car of BMW or the recycled clothes of the Spanish company EcoAlf, and pointed out at the social opportunities brought by this new model. Then, three main key points of the game were highlighted: to need for thinking out of the box, the importance of collaboration and the integration of Corporate Social responsibility (CSR) in the process, and participants start to play. They worked with a specific business case, called 'The Silver Economy Case,' based on a company delivering meals at home to elderly and dependent people, which was provided by the organization. Participants had to solve different circular challenges with the help of a facilitator who walked around the tables to assist them. The team of Creafutur and Group381 guided the participants through the whole process. Eventually, Charlotte Bouchet encouraged participants to define their own challenges in their companies and reminded them of the need for collaboration to implement ideas.

'Building a better world is within our reach.'
Charlotte Bouchet

Fira Barcelona

CITIES

CITIZENS

Sharing Experiences

Ziv Lautman / Breezometer

'We believe that this conference is the flagship of all the smart city conferences worldwide. I can say that this is by far the best one out there.'

Juanjo Hierro / Fiware

'I think this event is clearly becoming the event of reference for the smart cities worldwide. It's growing every year and I think I also would highlight we are seeing more and more actual products, actual experiences of cities deploying solutions.'

Hugo Santos Pinto / ZTE

'Smart City Expo World Congress is the place to be if you want to meet potential partners, potential customers, collect trends and also promote your solutions.'

Xavier Alabart / U-Smart Toys

'I recommend coming to the Smart City Expo to anybody that is willing to embrace this new model of making cities human again.'

Dante Ricci / SAP

'I would recommend coming to the Smart City Expo. You're going to be able to collaborate with city leaders, vendors who are going to be partners with cities, universities which are doing a lot of research around the area and citizens are actually coming in. So, you have a whole ecosystem here.'

Rosalía Simón / Telefónica

'For the vendors, it's a great place to do networking with municipalities from everywhere. I also believe it is a place to create better ecosystems of companies.'

José Antonio Ondiviela / Microsoft

'It's the must-attend event across the world in terms of knowing the leading-edge and the latest state-of-art in technology dedicated to smart cities.'

Klaus Heidinger / Siemens

'This is the place where you see the important cities, where you see all important players in the field, so you have a huge network in one place where you can connect with many experts and people within three days.'

Eytan Schwartz / Tel Aviv Global

'The Smart City Expo really became an amazing Mecca for companies and for groups and organizations dealing with the Smart City issue. Really in the world that we're living, you know, if there is a place that you have to be once a year it's in Barcelona for the Smart City Expo [...] You can't always necessarily implement everything you see here, but you have to know where the world is going to know what your citizens will be expecting from you.'

Bruno Hervet / SUEZ
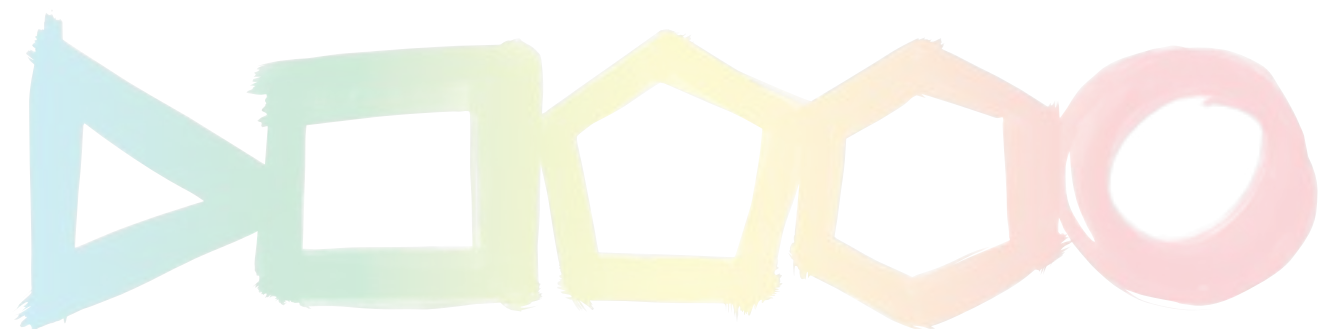
'That's such a great place for showing what you have in mind, for discovering what other people have in mind, for meeting people... Energy is very strong here, so this is a very nice place.'

Merran Wrigley / Philips Lighting

'I think coming to something like the Smart City Expo in Barcelona is a really good way to become educated around all the companies and all the cities and what they're doing. I think It's also a way of meeting new people and getting inspired.'

Edwin Diender / Huawei Enterprise

'If you're not in this game and you want to understand what it's about, you have to be at Smart City Expo World Congress.'

See you next edition
14-16 November 2017

Watch all the sessions on our YouTube Channel and website:

You Tube **SmartCityExpo**

www.smartcityexpo.com

smart city expo
WORLD CONGRESS

Fira Barcelona

CITIES FOR CITIZENS

Global Partners:

amazon web services

CISCO

FCC Environment

ferrovial services

FIWARE Open APIs for Open Minds

HUAWEI

mastercard

Microsoft

PHILIPS

SAP

SEAT

SIEMENS Ingenuity for life

suez

Telefónica

ZTE

Hosted by:

Ajuntament de Barcelona

Organized by:

Fira Barcelona

Supporting Organizations:

European Commission

GOBIERNO DE ESPAÑA MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD · ICEX España Exportación e Inversiones

Generalitat de Catalunya

Diputació Barcelona

AMB Àrea Metropolitana de Barcelona

ELLEN MACARTHUR FOUNDATION

WORLD BANK GROUP

IMPLEMENTING THE NEW URBAN AGENDA · United Nations

IDB

GSMA Connected Living

MOBILE WORLD CAPITAL BARCELONA

UCLG United Cities and Local Governments

Event Partners:

BOSCH Invented for life

cellnex driving telecom connectivity

civiciti

DASSAULT SYSTEMES

T··

elparking

HABIDATUM

Hewlett Packard Enterprise

PARTNER COUNTRY

MITSUBISHI MOTORS

Orchestrating a brighter world NEC

saba

SicaSoft Sustainability Management Technologies

Silver Spring NETWORKS

thyssenkrupp

urbaser

www.smartcityexpo.com