Sharing Cities

Summary

The challenges that cities face are now well documented and rehearsed: the effects of demographic change, notably global population growth and ageing of people; ageing also of city infrastructures; resource availability and affordability; waste and the adverse environmental impacts of it; social fragmentation and demand for inclusion and participation; austerity, and the counter challenge of retaining a vibrant economy – and more.

These challenges are also typically growing in intensity, and the inter-dependent relationships between them are becoming more evident and vexing. For instance, the dependence between mobility habits, pollutants and health; decisions on place-making investments and interventions that can make a difference now and in future years, with value and risk metrics that are hard to equate; complex dependencies throughout the energy chain. Resolving these requires working across disciplines, organisations, and sectors – challenging conventional ways of working.

The combination of technological advancements and changes to business models in particular is having profound effects in a number of sectors. Digitisation and new forms of peer-to-peer collaboration can fundamentally change travel, accommodation, food, living and much more in cities; for instance, Bla-Bla Car, Uber or AirBnB. In such cases, appropriate regulations and regimes are deficient or absent. Early days, yet such disruptions create real opportunity for transformation. They bring scale benefits; and dis-benefits. And it is at times hard to forecast which, and how they will emerge. The result can be fear and paralysis. Or innovations.

Set such change alongside a web of profound challenges and the key question is how best to respond. Responding in an efficient, intelligent and inclusive way is the path to smart cities. That is doing smart cities properly.

Sharing Cities represents the start of a movement, built upon the collaboration of a number of significant cities, industry, and research partners that commit to address these challenges together and prove new innovative and better ways to smarten European cities

The "Sharing Cities" Lighthouse European project, with a consortium of 35 partners led by three European cities (London, Milan and Lisbon) ambitions to achieve a wide scale deployment of smart cities solutions, shift the thinking to decarbonized and local renewables, demonstrating and assessing how the innovative use of technologies can improve city life and the lives of its inhabitants. Furthermore, the project ambitions to promote the improvement of urban mobility, energy efficiency in buildings and
carbon emissions by successfully engaging citizens in the transformation of their living context and fostering local level innovation, creation of new businesses and jobs. Figure 1 presents the "10 Audacious Goals" that were developed and which will be addressed by the Sharing Cities Programme.
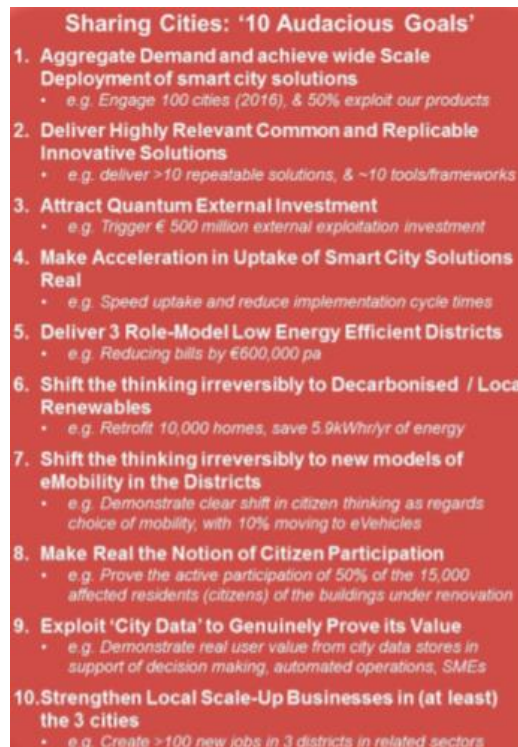

Figure 1. Sharing Cities "10 Audacious Goals".

The Sharing Cities project will deliver its vision, and objectives through the implementation of a number of measures, supported within eight work packages, three of which form the core content of the proposal: People, Place, Platform. These core work packages focus on: 1. PEOPLE – Deploy approaches and tools to develop a deep understanding of society, and the means by which they actively participate in making their districts better places, through sharing services, delivering better outcomes. 2. PLACE – Comprising four main themes that address city infrastructures that support low energy districts, electrification of mobility, and integration of infrastructures and processes. They include: Building Retrofit; Sustainable Energy Management System; Shared eMobility; and Smart Lampposts. 3. PLATFORM – an urban sharing platform (USP) that manages data from a wide range of sources including sensors as well as traditional statistics; built using common principles, open technologies and standards. This builds on London's DataStore analytics expertise, Milan's work on an API marketplace & the public use of data, and Lisbon's work on sensor data and gateways. Figure 2 presents the Work Programme and its interdependencies. CERIS participate in WP3 – Building Retrofit.

Project Reference

691895

Leading Institution

GLA – Greater London Authority (United Kingdom)

Partners

Royal Borough of Greenwich (United Kingdom), Concirrus (United Kingdom), Mastodon C (United Kingdom), Danfoss (Denmark), Kiwi Power (United Kingdom), TfL – Transport for London (United Kingdom), Câmara Municipal de Lisboa (Portugal), Lisboa e-Nova – Agência de Energia e Ambiente de Lisboa (Portugal), EMEL – Empresa Municipal de Mobilidade e Estacionamento de Lisboa (Portugal), IST – Instituto Superior Técnico (Portugal), Reabilita (Portugal), CEiiA – Centre of Engineering and Product Development (Portugal), INTELI – Inteligência em Inovação, Centro de Inovação (Portugal), EDP Distribuição Energia (Portugal), CNET – Centre for New Energy Technology (Portugal), Altice Labs (Portugal), Comune di Milano (Italy), AMAT (Italy), ATM (Italy), PoliMI – Politecnico di Milano (Italy), Fondazione Politecnico di Milano (Italy), CEFRIEL (Italy), Poliedra (Italy), Legambiente (Italy), RSE Ricerca – Sul Sistema Energetico (Italy), Kiunsys SRL (Italy), NeaHeliopolis (Italy), Teicos Group (Italy), Future Energy (Italy), A2A (Italy), Unareti (Italy), A2A Smart City (Italy), Siemens SPA (Italy), Bordeaux (France), Obshtina Burgas (Bulgaria), Miasto Stołeczne Warszawa (Poland), Instytut Energetyki (Poland), Eurocities (European Union), Future Cities Catapult (United Kingdom), Imperial College London (United Kingdom), Urban DNA (United Kingdom), Siemens UK (United Kingdom)
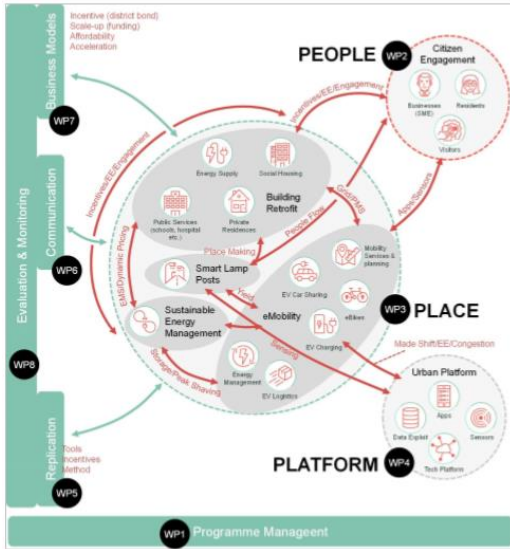
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Figure 2. Sharing Cities Working Programme.

The project objectives and its Working programme will be implemented through a portfolio of 'digital first' and interconnected measures in three smart city districts: The Royal Borough of Greenwich in London, Porta Romana / Vettabbia in Milan, and the Downtown area of Lisbon.

London, Lisbon and Milan all display significant political and city authority-level commitment to smart cities, and more particularly to collaborate on this programme. Each has strong and complementary attributes, which when taken together, point to significant opportunity to further exploit smart city technology.

These cities will collaborate deeply seeking to develop common designs, and implement solutions across all areas. Figure 3 presents the selected demonstration areas for each city in which the project measures will be implemented. These areas were selected due to their strategic importance to the cities given their high leadership visibility. They combine an appropriate mix of infrastructures, socio-economic features such that they will provide excellent sites to both evidence the value of the measures and provide springboards for exploitation within and across follower and scale-up cities.

Figure 3. Sharing Cities demonstration areas.

The project has a duration of 60 months, of which three years are dedicated to the development and implementation process of the measures followed by two final years dedicated to monitoring and evaluating the benefits achieved.

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