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Smart Cities? Society and technology on debate

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In recent years, at least since the Smart Growth Movement of the late 1990s, discussions and debates about the Smart Cities theme have involved a growing number of experts, marketing specialists, consultants, corporations, city officials, academics, practitioners and citizens. For instance, in relevant bases of indexed publications, two thirds are paper presented in Congresses and from 2014 on their numbers are increasingly relevant. That means that Smart Cities involve several, diverse and not sedimented aspects. It is difficult to find any region of the planet in which the cities have not embraced any form of Intelligent Cities initiative. Current cities are complex systems that are characterized by massive numbers of interconnected citizens, businesses, different modes of transport, communication networks, services and utilities.

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Nonetheless, there is no unanimity or consensus over the names (smart, intelligent, virtual, ubiquitous, creative, sustainable, livable or digital cities), nor a concept of Intelligent City, their scope or meaning. Many definitions of smart cities exist. A range of conceptual variants is often obtained by replacing “smart” with alternative adjectives. The label “smart city” is a fuzzy concept and is used in ways that are not always consistent. There is neither a single template of framing a smart city, nor a one-size-fits-all definition of it. That makes a question on the case of calling a Smart City really intelligent. At the time of 1990s, the focus was on the significance of new ICT with regard to modern infrastructures within cities. In this paper, the smart city should have a strong governance-oriented approach which emphasizes the role of social capital and relations in urban development. The aim is a better use of public resources, improving quality services, reducing operational costs, and in a sustainable environment. According to BSI (2014), a defining feature of smart cities is the ability of the component

systems to interoperate. Smart City is the effective integration of physical, digital and human systems in the built environment to deliver a sustainable, prosperous and inclusive future for its citizens.

According to the IESE Cities in Motion Index, from IESE Business School, Spain (2016), has been designed with the aim of constructing a “breakthrough” indicator in terms of its completeness, characteristics, comparability and the quality and objectivity of its information. It aims to help the public and governments to understand the performance of the called 10 fundamental dimensions for a city, that are: governance, urban planning, public management, technology, the environment, international outreach, social cohesion, mobility and transportation, human capital, and the economy. The common point among all

those dimensions is the fact of all of them be focused on service operations improvement, that is servitization aiming at sustainable development.

A review in the broader business environment supporting servitization, processes of market-pull and technology-push are interplaying to favor increasing servitization within those manufacturers based in industrialized nations and even in governments.

Taking a look at evidence and arguments that begin to explain a growing interest in servitization, can we reveal that from several perspectives: 1) economic (services and the aftermarket represent an alternative strategy, the installed base of



products and equipments already in the field is significant), 2) environmental (services enable dematerialization reducing embodied energy and materials and can positively impact environmental sustainability), 3) market (products sharing and new platforms for services), 4) social (fundamentally, extent of services activities is directly linked to the wealth of an economy), 5) technology innovation (information and communication technologies enable many services) and 6) knowledge (co-creation with customers is gaining traction and we need to look at service as a system of interacting parts that include people, technology and business).

As a form to adapt to the application of new technologies as ICT, Big Data and IoT, we hope information can be collected from citizens to offer new services, that is the basis of crowdsourcing. New laws are needed as companies and the government has many information about their citizens. The services have to keep on running, but with a better data protection for the people. New experiences with involvement of people and co-creation of new solutions for the city have been observed, as is the case of Medellin, Colombia.

In the era of knowledge economy, public administrations still need support to structure the concept of the smartness of a city, to capture its implications, to identify benchmarks at the international level, and to find improvement opportunities.

Aiming at clarifying the meaning of a Smart City, a categorization of the possible domains in which urban development policies are applicable can be classified as “hard” or “soft”, in relation to the importance that the ICT systems have as key enabling technologies. Specifically, hard domains refer to office and residential buildings, energy grids, natural resources, energy and water management, waste management, environment, transport, mobility and logistics. By contrast, soft domains include areas such as education, culture, policies that foster entrepreneurship, innovation and social inclusion, as well as communication between local public administrations and the citizens (e-government).

Some empirical contribution highlights that there is a negative correlation between the scope of Smart Cities interventions in hard and soft domains. Cities that are more active in the domains that are aimed at improving their capacity to “sense and act” through ICT systems are less likely to differentiate the initiatives launched for soft domains related to human capital, cultural heritage, and innovation; 2) key issues concern the influence of geographical variables, in which the observations reflects the principle that each country follows its own smartness strategy, due to the importance of its local socio-economic and cultural background. It seems possible to say that the exportation of best practices may not occur easily; 3) the number of city domains covered by smart initiatives does not seem to be correlated to the size of a city, considered in terms of

population, but it is significantly correlated to the demographic density.

All cities are unique; however, they rarely face unique challenges. The scale of the challenges they face, and the limited resources they have at their disposal, make it unlikely that their current paradigm is sustainable. Cities need to maintain a sense of individuality and pride. They need to be competitive. However, they also need to collaborate to improve how they tackle common issues, build better relationships with the supply market and so help the necessary market transformation. Fortunately, the effective use of data and new technology solutions are providing new tools and opportunities that can help overcome these challenges. The role of city leaders is to build the capacity to integrate these into the daily operations of the city.

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This article is a result from the author's ascertainment and analysis, without compulsorily reflecting CEST's opinion.