Smart cities in the making: Does urban smartness lead to sustainable outcomes?

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Over the past decade smart urban technologies have begun to blanket our cities, forming the backbone of a large intelligent infrastructure. Along with this development, dissemination of the sustainability ideology has had a significant imprint on the planning and development of our cities. Consequently, the concept of smart cities has become a popular topic particularly for scholars, urban planners, urban administrations, urban development and real-estate companies, and corporate technology firms. The concept of smart city is relatively new and can be seen as a successor of information city, digital city, intelligent city, sustainable city, and knowledge city. Despite the overwhelming popularity of this notion, there is still a lack of consensus on what a smart city is. In general, this new city brand is understood as an urban locality that makes use of information and communication technology (ICT) extensively to provide a high quality of living to its citizens. The term smart city is also used as an umbrella concept that contains a number of sub-themes such as smart urbanism, smart economy, sustainable and smart environment, smart technology, smart energy, smart mobility, smart living, and so on. In other words, the popular smart city concept symbolises a new kind of technology-led urban utopia. It is viewed as a vision, manifesto or provocation aiming to constitute the ideal city form.

The first part of the presentation focuses on the making of smart cities by providing background information on the need for smart cities, smart urban technologies, smart urban systems, and smart city best practices, along with a commentary on their challenges and opportunities in becoming a role model for the cities of the 21st century. The second part of the presentation focuses on addressing an important question of whether urban smartness leads to sustainable urban outcomes. In order to reflect on this issue the presentation concentrates on a recently completed empirical investigation that places 15 UK cities under the microscope. Presentation concludes by highlighting the key findings of this empirical study that includes: A positive correlation exists between technology adoption and sustainable outcomes; The impact of urban smartness on greenhouse gas emissions change over time; Despite to their promise, smart city practices in the UK cities have failed to make a considerable contribution to the sustainability agenda beyond the rhetoric; Findings call for further investigation and better aligning smart city strategies to lead to concrete sustainable outcomes; Importance of prospective investigations to accurately scrutinise existing smart city projects' outcomes, and emphasising the necessity of developing smart city agendas that deliver sustainability oriented outcomes; The need to mature the smart city paradigm—as a city planning and development model and emerging urban reality—that is already in continuous transformation.

Biography

Tan Yigitcanlar is an Associate Professor at the School of Civil Engineering and Built Environment, Queensland University of Technology, Brisbane, Australia. Along with this position, he also carries out an Executive Director role at the World Capital Institute, Monterrey, Mexico, and an Adjunct Professor role at the Smart Cities Lab (LabCHIS), Federal University of Santa Catarina, Florianopolis, Brazil. He has been responsible for research, teaching, training and capacity building programs on the fields of urban and regional planning, development and management in esteemed Australian, Brazilian, Finnish, Japanese and Turkish universities. The main foci of his research interests are clustered around the following three interrelated and interdisciplinary themes:

The first research theme is 'Knowledge-Based Urban Development and Knowledge Cities'. In this research area, he scrutinises the impacts of globalisation and knowledge economy on urban locations. He is one of the doyens in the theorisation and evaluation of knowledge-based urban development. His research projects in this theme focus on planning, designing, development and managing knowledge cities and their knowledge and innovation clusters.

The second theme is 'Sustainable Urban Development and Sustainable Cities'. In this theme, he investigates urban sustainability by focusing on land use and transport integration, transport accessibility and modelling, water sensitive urban design, urban ecosystems sustainability, and infrastructure resilience. His research projects in this theme employ various methods including indicator-based assessment and policy analysis and development.

The third research theme is 'Intelligent Urban Technologies and Smart Cities'. In this research area, he examines impacts of innovative urban technologies on smart, sustainable and knowledge-based development of cities. His research projects in this theme include smart cities and communities, autonomous vehicles, online planning and decision support systems, and the impacts of urban technologies on cities and societies.

He is an Editor-in-Chief of 'Elsevier's Smart Cities Book Series', the Editor-in-Chief of 'International Journal of Knowledge-Based Development', a Section Editor-in-Chief of

‘Sustainability’, a Regional Editor of ‘Journal of Knowledge Management’, and an Associate Editor of ‘International Journal of Environmental Science and Technology’, ‘Global Journal of Environmental Science and Management’, ‘Journal of Open Innovation: Technology, Market, and Complexity’, and ‘Asia Pacific Journal of Innovation and Entrepreneurship’. Additionally, he is an editorial board member of ‘Journal of Urban Technology’, ‘Knowledge Management Research & Practice’, ‘Measuring Business Excellence’, ‘International Journal of Knowledge-Based Organizations’, and ‘Urban Science’.

He undertakes the Chairman role of the annual ‘Knowledge Cities World Summit’ series, and organised conferences in many locations of the world since 2007. These locations include Monterrey (Mexico), Shenzhen (China), Melbourne (Australia), Bento Gonzalves (Brazil), Matera (Italy), Istanbul (Turkey), Tallinn (Estonia), Daegu (Korea), Vienna (Austria), and Arequipa (Peru).

He has published his research findings extensively. These publications also include over 100 journal articles and the following key reference books: ‘Geographies of Disruption’ (forthcoming), ‘Urban Knowledge and Innovation Spaces (Routledge, 2017), ‘Technology and the City (Routledge, 2016)’, ‘Knowledge and the City (Routledge, 2014)’, ‘Sustainable Urban Water Environment (Edward Elgar, 2014)’, ‘Building Prosperous Knowledge Cites (Edward Elgar, 2012)’, ‘Knowledge-Based Development for Cities and Societies (IGI Global, 2010)’, ‘Sustainable Urban and Regional Infrastructure Development (IGI Global, 2010)’, ‘Rethinking Sustainable Development (IGI Global, 2010)’ ‘Knowledge-Based Urban Development (IGI Global, 2008)’, and ‘Creative Urban Regions (IGI Global, 2008)’.