
Editorial: The smart city as an open innovation knowledge city

JinHyo Joseph Yun*

DGIST,
333 Techno Jungang Daero,
Hyeonpung-Myeon, Dalseong-Gun,
Daegu, 42988, South Korea
Email: jhyun@dgist.ac.kr
*Corresponding author

Youn Taik Leem

Department of Urban Engineering,
Hanbat University,
125 Dongseodae-ro, Yuseong-gu,
Daejeon, 34158, South Korea
Email: ytleem@hanbat.ac.kr

Biographical notes: JinHyo Joseph Yun is the President of Society of Open Innovation, Technology, Market, and Complexity (SOItmC). And he is the Editor-in-Chief of the *Journal of Open Innovation: Technology, Market, and Complexity (JOItmC)*. His main research topic is 'how do we conquer the growth limits of capitalism by open innovation and open business model?'

Youn Taik Leem is a Professor at Hanbat Korean National University. His research fields are urban and regional planning, ICTs-based urban planning include GIS and urban management systems. Currently, he is in charge of national R&D project of future city (Ubiquitous City) and Head of UCRC (Ubiquitous City Research Cluster), a global research network of future knowledge-based city planners and researchers.

In relation to the development of a capitalist economy, some urban regions have reached the limit of their economic growth and actually physically declined as a result. However, we believe that, throughout history, the construction of a great gathering space has always pushed the boundaries (Townsend, 2014). To overcome these recent obstacles, cities should be armed with knowledge and thoughts and ideas open to innovation. 'Open innovation, knowledge city and creative economy' is the theme of the Society of Open Innovation: Technology, Market, and Complexity (SOItmC, <http://www.openinnovationtmc.org>) and Knowledge City and World Summits (KCWS) 2015 Conference. Open innovation will support the knowledge city. And the knowledge city will build up the creative economy in the national innovation system with an open innovation paradigm.

The global economy is approaching its growth limits, which are, so to speak, the growth limits of capitalism. We have considered alternatives that can allow us to conquer the limits of capitalism, and have arrived at open innovation and a business model to

implement it, as well as the idea of the knowledge city, which will be a practical method and paradigm for open innovation.

Open innovation means that valuable ideas can come from inside or outside a company and can reach the market from the inside or outside of a company as well [Chesbrough, (2006), p.43]. Open business models, owing to their inclusion of a variety of external concepts, create and capture value by leveraging many more ideas. They also use a key asset, resource, or position that is not only part of the company's own business but also a part of other companies' businesses [Chesbrough, (2013), pp.2–3]. The idea of a 'business model' means a new combination based on open innovation between technology and the market. Business model innovation comes through new or creative combinations of technology and the market (Chesbrough, 2007, 2010). For all that, these creative business models appear suddenly as a kind of disruptive innovation and then the phenomenon characterising development emerges. This includes:

- 1 the introduction of a new good
- 2 the introduction of a new method of production
- 3 the opening of a new market
- 4 the conquest of a new source of supply of raw materials or part-manufactured goods
- 5 the appearance of a new creative organisation in any industry, like the creation of a monopoly position [Schumpeter, (1934), pp.65–66].

The pillars of knowledge-based urban development, such as methods to build the knowledge city, include several factors such as economic development, socio-cultural development, enviro-urban development, and institutional development [Yigitcanlar, 2011; Yigitcanlar et al., (2012), p.332]. Nowadays, the changing spatial agglomeration of knowledge-intensive industries and the formation of types of knowledge precincts are becoming the spatial core of knowledge-based urban development (Carrillo et al., 2008; Carrillo, 2015). And the importance of open innovation in knowledge is growing (Yun et al., 2015).

In this special issue, we have selected two papers that have a direct relationship with open innovation and an indirect relation with the knowledge city. These are 'Embracing networks of national policy research in future foresight' and 'Perceived innovation barriers and open innovation performance: insights from Korea'.

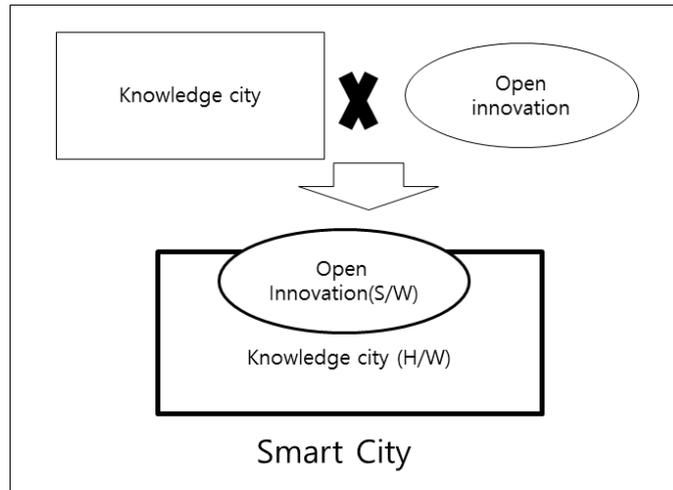
We have also selected three papers that have a direct relationship with the knowledge city and an indirect relationship with open innovation. These are 'Clustering and commuting patterns of knowledge workers. A comparative analysis of Barcelona and Helsinki metropolitan areas', 'Knowledge-based urban development potential of Turkish provinces' and 'Complex regional innovation networks and HEI engagement – the case of Chicago'.

In this special issue, we can see that open innovation can come true through a concrete knowledge city approach. And, the knowledge city can be made into a reality through an open innovation strategy.

The combination of the knowledge city and open innovation can lead to a smart city, as can be seen in Figure 1. No acknowledged definition of the term 'smart city' has existed up to now, and the several cities that define themselves as 'smart' completely lack a strategic vision of their smart futures [Dameri and Rosenthal-Sabroux, (2014), p.1]. When open innovation dynamics, which are based on knowledge city infrastructures,

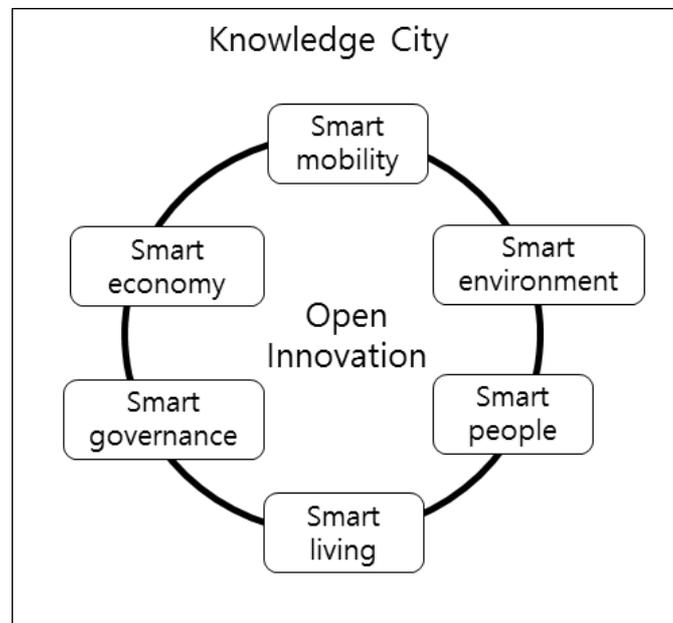
occur at the micro and macro levels, the smart city will appear and grow (Yun, 2015). We now propose the concept of smart city as a place where is more livable and economically prosperous on the basis of smart thinking and smart infrastructure such as IT-based city.

Figure 1 Smart city as open innovation knowledge city



Source: Creative development by authors

Figure 2 Smart city dimensions with open innovation and knowledge city



Source: Giffinger and Pichler-Milanović (2007) 내용 수정

The smart city as a combination of open innovation and the knowledge city can develop along several dimensions such as smart mobility, smart environment, smart people, smart living, smart governance, and smart economy, as can be seen in Figure 2. Above all, the smart city can develop from the growth of knowledge city infrastructure and from a combination of open innovation strategies and policies.

Acknowledgements

This work was supported by the DGIST R&D Program of the Ministry of Science, ICT and Technology of Korea (15-IT).

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