

# Knowledge-Based Urban Development



**Tan Yigitcanlar**

*Queensland University of Technology, Australia*

## INTRODUCTION

The changing and challenging conditions of the 21st century have been significantly impacting our economy, society and built and natural environments. Today generation of knowledge—mostly in the form of technology and innovation—is seen as a panacea for the adaptation to changes and management of challenges (Yigitcanlar, 2010a). Making space and place that concentrate on knowledge generation, thus, has become a priority for many nations (van Winden, 2010). Along with this movement, concepts like knowledge cities and knowledge precincts are coined as places where citizenship undertakes a deliberate and systematic initiative for founding its development on the identification and sustainable balance of its shared value system, and bases its ability to create wealth on its capacity to generate and leverage its knowledge capabilities (Carrillo, 2006; Yigitcanlar, 2008a). In recent years, the term knowledge precinct (Hu & Chang, 2005) in its most contemporary interpretation evolved into knowledge community precinct (KCP). KCP is a mixed-use post-modern urban setting—e.g., flexible, decontextualized, enclaved, fragmented—including a critical mass of knowledge enterprises and advanced networked infrastructures, developed with the aim of collecting the benefits of blurring the boundaries of living, shopping, recreation and working facilities of knowledge workers and their families. KCPs are the critical building blocks of knowledge cities, and thus, building successful KCPs significantly contributes to the formation of prosperous knowledge cities. In the literature this type of development—a place containing economic prosperity, environmental sustainability, just socio-spatial order and good governance—is referred as knowledge-based urban development (KBUD). This article aims to provide a conceptual understanding on KBUD and its contribution to the building of KCPs that supports the formation of prosperous knowledge cities.

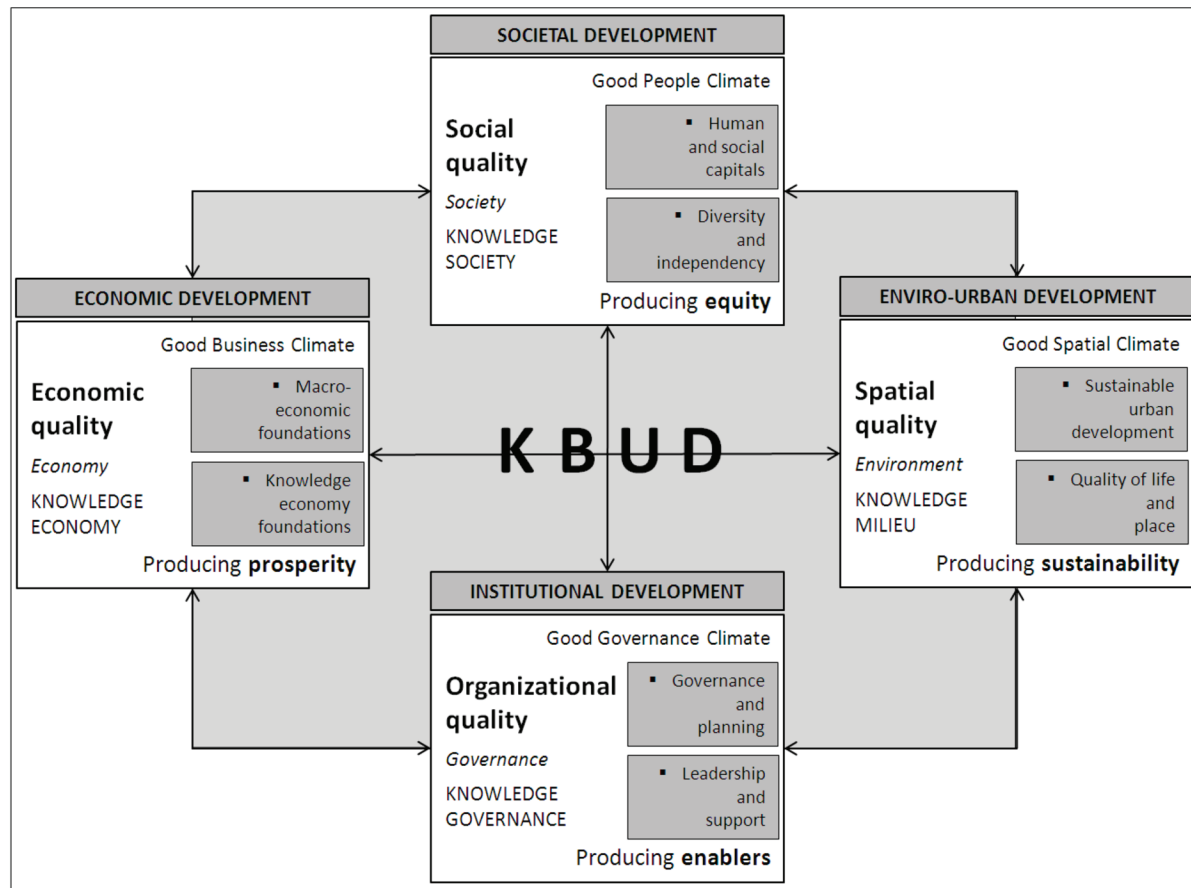
## BACKGROUND

To date, the development of most knowledge cities has proceeded organically as a dependent and derivative effect of global market forces (Cooke & Leydesdorff, 2006). Urban and regional planning has responded slowly, and sometimes not at all, to the challenges and the opportunities of the knowledge city (May, 2011). That is changing, however. KBUD brings both economic prosperity and a sustainable socio-spatial order, as its goal is to generate conditions to produce and circulate abstract work—i.e., knowledge generation—to achieve a sustainable urban development that is a development type that improves the quality of life in a city, including ecological, cultural, political, institutional, social and economic components without leaving any burden (Yigitcanlar, 2010a, 2010b). In other words, with KBUD the knowledge city (trans) formation can be planned, engineered and orchestrated.

The globalization of the world in the last decades of the 20th century was a dialectical process. On one hand, as the tyranny of distance was eroded, economic networks of production and consumption were constituted at a global scale (Huggins, 2010). At the same time, spatial proximity remained as important as ever, if not more so, for KBUD. Mediated by information and communication technology (ICT), personal contact, and the medium of tacit knowledge, organizational and institutional interactions are still closely associated with spatial proximity (Cooke, 2002). The clustering of knowledge generation is essential for fostering innovation and wealth creation (Yigitcanlar, 2011c).

The social benefits of KBUD extend beyond aggregate economic growth (May & Perry, 2011). On the one hand, the possibility of a particularly resilient form of urban development secured in a network of connections is anchored at local, national, and global coordinates. On the other, quality of place and life—defined by the level of public service and by the conservation and development of the cultural, aesthetic and ecological

Figure 1. Conceptual framework of KBUD (Yigitcanlar &amp; Lonnqvist, 2013, p.359)



values give cities their character and attract or repel the creative class of knowledge workers—is a prerequisite for successful KBUD. The goal is a secure economy in a human setting: in short, smart growth or sustainable urban development (Yigitcanlar, 2010b, 2010c).

According to Yigitcanlar (2011a) KBUD is “the new development paradigm of the knowledge [economy] era that aims to bring economic prosperity, environmental sustainability, a just socio-spatial order and good governance to cities, and [as an end product] produces a city purposefully designed to encourage the production and circulation of knowledge in an environmentally conserved, economically secure, socially just and well-governed human setting, a knowledge city” (p.354). KBUD consists of four major development domains (Figure 1).

KBUD’s economic development perspective aims to place endogenous knowledge assets in the heart of economic activities as it sees knowledge as a locally

embedded strategic and vital resource rather than exogenous, imported and supplementary (Lever, 2002; Huggins & Strakova, 2012). It works towards building a knowledge economy within an urban region producing prosperity achieved through strong ‘macro-economic’ and ‘knowledge economy foundations’, and thus, forms a good ‘business climate’.

KBUD’s socio-cultural development perspective aims to increase skills and knowledge of residents as a mean for individual and communal development and societal high-level of achievements (Ovalle et al., 2004). It works towards building a knowledge society within an urban region producing social equity achieved through strong ‘human and social capitals’, and ‘diversity and independency’, and thus, forms a good ‘people climate’.

KBUD’s environmental and urban (enviro-urban) development perspective aims to promote conservation, development and integration of both natural and

9 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/knowledge-based-urban-development/112448](http://www.igi-global.com/chapter/knowledge-based-urban-development/112448)

## Related Content

---

### Exploration and Exploitation Capabilities

César Camisón-Zornoza, Montserrat Boronat-Navarro and Beatriz Forés-Julián (2015). *Encyclopedia of Information Science and Technology, Third Edition* (pp. 587-598).

[www.irma-international.org/chapter/exploration-and-exploitation-capabilities/112372](http://www.irma-international.org/chapter/exploration-and-exploitation-capabilities/112372)

### Mathematical Representation of Quality of Service (QoS) Parameters for Internet of Things (IoT)

Sandesh Mahamure, Poonam N. Railkar and Parikshit N. Mahalle (2017). *International Journal of Rough Sets and Data Analysis* (pp. 96-107).

[www.irma-international.org/article/mathematical-representation-of-quality-of-service-qos-parameters-for-internet-of-things-iot/182294](http://www.irma-international.org/article/mathematical-representation-of-quality-of-service-qos-parameters-for-internet-of-things-iot/182294)

### E-Commerce Model Oriented to Cloud Computing and Internet of Things Technology

Guanghai Tang and Hui Zeng (2021). *International Journal of Information Technologies and Systems Approach* (pp. 84-98).

[www.irma-international.org/article/e-commerce-model-oriented-to-cloud-computing-and-internet-of-things-technology/278712](http://www.irma-international.org/article/e-commerce-model-oriented-to-cloud-computing-and-internet-of-things-technology/278712)

### Sentiment Analysis of the Consumer Review Text Based on BERT-BiLSTM in a Social Media Environment

Xueli Zhou (2023). *International Journal of Information Technologies and Systems Approach* (pp. 1-16).

[www.irma-international.org/article/sentiment-analysis-of-the-consumer-review-text-based-on-bert-bilstm-in-a-social-media-environment/325618](http://www.irma-international.org/article/sentiment-analysis-of-the-consumer-review-text-based-on-bert-bilstm-in-a-social-media-environment/325618)

### Diagnosing and Redesigning a Health(y) Organisation: An Action Research Study

Christoph Rosenkranz, Marcus Laumann and Roland Holten (2009). *International Journal of Information Technologies and Systems Approach* (pp. 33-47).

[www.irma-international.org/article/diagnosing-redesigning-healthy-organisation/2545](http://www.irma-international.org/article/diagnosing-redesigning-healthy-organisation/2545)