Editorial: Knowledge-based development of cities – a myth or reality?

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Last several decades have witnessed major economical, technological, social and environmental changes that significantly impacted the patterns of urbanisation, human activities and lifestyles. During the past few years, challenges of globalisation, knowledge economy, climate change, network society, transportation technologies, information and communication technologies, global division of labour force, rapid urbanisation, and shrinkage of cities have become important topics of discussion (Yigitcanlar, 2010a). Particularly, the need for new spatial arrangements for cities to better cope with these challenges, and the necessity of adjusting city structures in order to become more compatible with the knowledge economy are among the most popular issues, and heavily occupied the agendas of scholars, decision-makers and practitioners. These issues surfaced the need for developing and adopting new urban planning, development and management mechanisms to foster sustainability of cities and also making them resilient to change (Yigitcanlar, 2010b).

In recent years, we have also witnessed the birth of new concepts and paradigms that started to effect urbanisation to ease the impacts of abovementioned change and challenges. Carrillo (2004) categorised these new concepts and paradigms under four groups: dematerialisation (i.e., a lesser volume of material inputs and outputs);

environmentalism (i.e., a greater concern with sustainability); experience upgrade (i.e., the capacity to attain the same results without the conventional means of space and time), and; essentialism (i.e., the understanding and pursuit of ever more fundamental values).

Up until recently urbanisation has been viewed primarily from the perspective of urban planning with a focus on the physical form and built environment of cities (e.g., on land use zoning, building and infrastructure), and very little consideration has been given to the knowledge resources or the cultures that produce knowledge. Traditionally, the emphasis has always been on attracting tangible forms of production (i.e., labour, land and capital), and knowledge as an intangible asset is often ignored (Knight, 2008). With the advent of aforementioned challenges, concepts and paradigms, now a greater attention needs to be shown in restructuring of cities to house more knowledge-based activities and making knowledge as a major source for local development (Metaxiotis et al., 2010).

The types of environment, which need to be developed for knowledge-based activities, differ significantly from those developed by commodity-based activities, and call for different development strategies. The most immediate impact of the knowledge economy in relation to the urban environment is the reduction in displacements made possible by the telecommunication technologies (i.e., changing working, schooling and shopping patterns). According to Graham (2002), present configuration, organisation and lifestyle of urban centres are more of inheritance of tribal, hierarchical and material production patterns than good examples of urban design with a strong culture fit for the knowledge society.

One of the crucial tasks for cities in the era of knowledge economy, which characterised by globalisation, is that cities need to develop environments where knowledge resources are valued, create conditions conducive to their development, and ensure knowledge resources are securely anchored (Yigitcanlar et al., 2008a). In this perspective important conditions that are contributing to the development of cities of knowledge are outlined by Knight (1995) as: the community able to define, perceive and value knowledge as a form of wealth; the city acknowledge the importance and contribution of knowledge worker; the city able to make the public understand the nature and role of knowledge; place knowledge resources at regional terms; give priority to improve knowledge infrastructure; ensure all members of society have access to careers in knowledge-based activities; promote city as a centre of excellent; offer incentives and mechanisms favouring investment in local knowledge resources; futuristic vision emphasising on knowledge and other immaterial factors, and; develop civic leadership.

The rationale to develop or transform cities as 'cities of knowledge' or 'knowledge cities' is widely accepted in the wider circles of scholars, decision-makers, practitioners and developers (Carrillo, 2006; Van Winden et al., 2007; Yigitcanlar et al., 2008b; Ergazakis et al., 2009). However, traditional urban planning and development approaches do not provide a clear picture of: how to form new development strategies that are knowledge-based, and; how to use urban planning mechanisms effectively to realise knowledge-based development of cities. These vital questions put urban planning under microscope and scrutinised its compatibility with the new conditions of the era of knowledge economy.

The rise of knowledge economy has become the new main driver of global and local economic development, and to achieve a sustainable development – by creating a strong urban core, harnessing its economic strength and addressing social exclusion, and

avoiding physical and environmental dereliction – has been the aim of urban planning in the era of knowledge economy (Yigitcanlar, 2009). However, traditional normative urban planning lacks the vision and capacity to deliver a sustainable and knowledge-based development. To date, the structuring of most of the cities has proceeded organically: in essence, as a dependent and derivative effect of global market forces. Urban planning has either responded slowly or not responded at all to the challenges and the opportunities of the global knowledge city (Yigitcanlar et al., 2008c). A decade into the new century the economic success of knowledge-based development policies in a number of cities and nations have led urbanists to think of whether similar policies could be applicable for the knowledge-based development of cities – in other words whether knowledge-based development can be planned. This has led, in recent years, urban planning to consolidate its interest in the paradigm of post-modern social production under the rubric of' knowledge-based urban development' that is a new form of development for establishing cities that bring economic prosperity and environmental sustainability with a just socio-spatial order (Yigitcanlar and Velibeyoglu, 2008; Velibeyoglu and Yigitcanlar, 2010). Today examples around the globe (Yigitcanlar, 2009) confirm that it is possible to develop cities as or transform cities into knowledge cities, as long as appropriate and tailored knowledge-based urban development policies developed and implemented successfully.

References

Carrillo, F.J. (2004) 'Capital cities: a taxonomy of capital accounts for knowledge cities', *Journal of Knowledge Management*, Vol. 8, No. 5, pp.28–46.

Carrillo, F.J. (Ed.) (2006) 'The century of knowledge cities', in *Knowledge Cities: Approaches, Experiences, and Perspectives*, pp.11–15, Butterworth-Heinemann, New York.

Ergazakis, E., Ergazakis, K., Metaxiotis, K. and Charalabidis, Y. (2009) 'Rethinking the development of successful knowledge cities: an advanced framework', *Journal of Knowledge Management*, Vol. 13, No. 5, pp.214–227.

Graham, S. (2002) 'Bridging urban digital divides: urban polarisation and information and communications technologies', *Urban Studies*, Vol. 39, No. 1, pp.33–56.

Knight, R. (1995) 'Knowledge-based development: policy and planning implications for cities', *Urban Studies*, Vol. 32, No. 2, pp.225–260.

Knight, R. (2008) 'Knowledge-based development: the challenge for cities', in Yigitcanlar, T., Velibeyoglu, K. and Baum, S. (Eds.): *Knowledge-Based Urban Development: Planning and Applications in the Information Era*, pp.13–25, Information Science Reference, Hersey, PA.

Metaxiotis, K., Carrillo, F.J. and Yigitcanlar, T. (Eds.) (2010) *Knowledge-Based Development of Cities and Societies: An Integrated Multi-level Approach*, Information Science Reference, Hersey, PA.

Van Winden, W., van den Berg, L. and Pol, J. (2007) 'European cities in the knowledge economy: towards a typology', *Urban Studies*, Vol. 44, No. 3, pp.252–550.

Velibeyoglu, K. and Yigitcanlar, T. (2010) 'An evaluation methodology for tangible and intangible assets of city-regions: the 6K1C framework', *International Journal of Services Technology and Management*, Vol. 14, No. 4, pp.343–359.

Yigitcanlar, T. (2009) 'Planning for knowledge-based development: global perspectives', *Journal of Knowledge Management*, Vol. 13, No. 5, pp.228–242.

Yigitcanlar, T. (Ed.) (2010a) *Rethinking Sustainable Development: Urban Management, Engineering and Design*, Information Science Reference, Hersey, PA.

Yigitcanlar, T. (Ed.) (2010b) *Sustainable Urban and Regional Infrastructure Development: Technologies, Applications and Management*, Information Science Reference, Hersey, PA.

Yigitcanlar, T. and Velibeyoglu, K. (2008) 'Knowledge-based urban development: local economic development path of Brisbane, Australia', *Local Economy*, Vol. 23, No. 3, pp.197–209.

Yigitcanlar, T., Velibeyoglu, K. and Baum, S. (Eds.) (2008a) *Knowledge-Based Urban Development: Planning and Applications in the Information Era*, Information Science Reference, Hersey, PA.

Yigitcanlar, T., Velibeyoglu, K. and Baum, S. (Eds.) (2008b) *Creative Urban Regions: Harnessing Urban Technologies to Support Knowledge City Initiatives*, Information Science Reference, Hersey, PA.

Yigitcanlar, T., O'Connor, K. and Westerman, C. (2008c) 'The making of knowledge cities: Melbourne's knowledge-based urban development experience', *Cities*, Vol. 25, No. 2, pp.63–72.