

## Chapter 8.8

# An Advanced Triple–Helix Network Model for Smart Cities Performance

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### ABSTRACT

*Focusing on a subset of European cities belonging to the SmartCities (inter) Regional Academic Network (SCRAN), i.e. Bremerhaven, Edinburgh, Groningen, Karlstad, Kortijk, Kristiansand, Lillesand, Osterholz, Norfolk, this chapter will offer a decision network model built around an analytical hierarchy able to verify whether the development of cities within the North Sea Region is smart. It aims to offer a profound analysis of the interrelations between the components of smart cities, including the human and social relations connecting the intellectual capital, wealth, and governance of their regional development.*

*The chapter demonstrates that the inclusion of the abovementioned relations in the analytical hierarchy framework is significant, as it allows, for the first time, the opportunity for this network model to capture the triple helix of a smart urban or regional development and to verify whether the transformation of cities it ushers in is not merely based on an index of intellectual capital, but also on a measure of wealth creation whose standards of governance are smart.*

## INTRODUCTION

The past centuries have shown an increasing dominance of cities in the global economic landscape. But it is not the sheer population of members that count, but the functional leadership of cities in a modern world. Cities are not just geographical settlements of people, they are also the ‘home of man’ (Ward 1976). They reflect the varied history of mankind and are at the same time contemporaneous expressions of the diversity of human responses to future challenges. A great example of the way urban architecture reflects and shapes the future can be found in Dubai, a city that has deliberately left behind its old history and has decided to shape and pursue a spectacular new urban design offering improvements in lifestyle, ‘livability and economic viability’. In doing so, it tries to find a balance between economy, technology, society and culture by deploying new urban cultural space as an open innovation action platform for future greater efficiency (by facilitate and support better planning and decision making, improving processes) and accelerated socio-economic growth. Innovations, efficiencies and growth that in turn lay down the foundations for continuous improvement by way of and through the smart governance of culturally-diverse lifestyles in the city. Dubai intends to become a symbol of creative architecture, a really smart city.

Dubai is not an exception, but acts as a trend setter. Actually, modern urban planning shows an avalanche of varying initiatives focused on creative urban development, in particular by centering on culture and acts as multi-faceted cornerstones for innovative development of the city. Consequently, it has become fashionable to regard cultural expressions like arts, festivals, exhibitions, media, communication and advertising, design, sports, digital expression and research as signposts for urban individuality and identity and departures for a new urban cultural industry (see Florida 2002, Scott 2003). ‘Old’ cities like London, Liverpool, Amsterdam, Berlin, Barcelona, New

York, San Francisco, Sydney or Hong Kong witness a profound transformation based on smart and creative cultures. This new orientation does not only provide a new dynamism for the city, it also has a symbolic value by showing the historical strength of these places as foundation stones for a new and open future. Clearly, blueprint planning of the city has become outdated. Hence, the creative sector has become an important signpost for modern urban planning and architecture, with major implications for both the internal workings of the city and their external image. Smart cities may act as a catalyst for change in a complex society and replace outdated development functions with fit-for-purpose designs.

Since Florida’s (2002) ideas on the creative class, the creative industry and the creative city, an avalanche of studies has been undertaken to study the features and success conditions of creative environments (see e.g., Fusco Girard *et al.*, 2009; Gabe, 2006; Heilbrun and Gray, 1993; Hesmondhalgh, 2002; Landry, 2003; Markusen, 2006; Power and Scott, 2004; Pratt, 1997; Scott, 2003; Vogel, 2001). Despite several empirical studies, however, an operational conceptualization of creative infrastructures has as yet not been developed and calls certainly for more profound applied research.

In responding to this call, the authors of this chapter want to suggest a city is “smart”: “when investments in human and social capital, traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources realizes [by way of] and]through participatory governance.” (Caragliu *et al.*, 2011,). Furthermore, cities can become “smart” if universities and industry support government’s investment in the development of such infrastructures.

In moving towards such a representation of smart cities, this chapter’s attempt to operationalize the concept of creative infrastructures will take on the notion of triple helix as a starting

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