

## Chapter 47

# Sustainability in Smart Cities: The Case of Vitoria–Gasteiz (Spain) – A Commitment to a New Urban Paradigm

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### ABSTRACT

*Cities play an important role in the development of economies, generating wealth and well-being for citizens, providing better, energy efficient and sustainable services and giving residents their rightful place as the cornerstone of city management. Spain has a quite unique example of a smart city, Vitoria-Gasteiz. This is an emblematic city for Europe, which awarded this municipality the title of European Green Capital 2012. This paper seeks to analyse the best sustainable practices through a case study based on content analysis of this city's website. In the social dimension, the results highlight the promotion of resident participation through municipal services, to ensure public debate and transparency. In the environmental dimension, the city has a sustainable mobility plan that aims to reverse the trend towards an increased use of private vehicles by promoting the use of buses, trams and bicycles. Finally, in the economic dimension, the findings underscore the city's economic rigour, transparency in management and economic recovery.*

### INTRODUCTION

In recent years, social and economic challenges have arisen from population growth and expanded urbanisation. The growth of the world's population, in general, and cities, in particular, is now exponential (Enerlis, Ernst and Young, Ferroviario & Madrid Network, 2012). This urban population growth has not emerged through natural processes (i.e. more births), but, instead, people have migrated from less economically favoured areas to more developed regions. In short, cities all over the world are in a state of flux, exhibiting increasingly complex dynamics (Caragliu, Del Bo & Nijkamp, 2009).

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This growing influx of people into cities requires new thinking about how to meet the demand for public services, which have to meet more and more citizens' needs. At the same time, the trend towards urbanisation is intensifying, so policymakers must address the need to provide more services to more people. Clearly, this dramatic increase in population has created a number of problems, such as difficulties in social organisation, complex territorial management and environmental degradation (Chourabi et al., 2012; Enerlis et al., 2012). The purpose of public government is to preserve the wellbeing of its citizens, but many cities' infrastructure and existing resources are stretched beyond their capacity. Problems associated with urban agglomerations are normally solved through creativity, human capital and cooperation among stakeholders, as well as with bright scientific ideas – in a nutshell, 'smart solutions' (Caragliu et al., 2009). All this has led experts to conclude that, currently, city management is a difficult task due to high population density and a large number of different interconnected issues (Cardone et al., 2013). In this context, Belanche, Casaló and Orús (2016) observe that the increasing use of urban services enhances the efficiency of urban management and favours social, environmental and economic sustainability.

Urban living, by its very nature, already creates major challenges in residents' daily lives. Currently, more than 400 cities exist with more than 1 million inhabitants, as well as 23 megacities (i.e. metropolitan areas with a population of more than 10 million), mainly in Asia (UN, 2012). The United Nations (UN) Population Fund forecasts that, by 2030, approximately 60% of the world's population will live in an urban environment, while 27 megacities with more than 10 million residents are projected to appear (Vlacheas et al., 2013). Cardone et al. (2013) affirm that large cities are already extremely important in social development. A full 50% of the world's population lives in cities, the top 100 urban centres account for 25% of the global gross domestic product and, by 2050, the total urban population will be almost 6.4 billion people. In developed countries, this percentage is even higher (i.e. more than 86%). Global urbanisation is taking place at an unparalleled speed. In 1970, there were just two megacities (i.e. Tokyo and New York). In 1990, there were 10, in 2011, 23, and, by 2025, there will be 37 megacities (Van Leeuwen & Sjerps, 2016). Given this situation, global resources must be treated as limited and scarce, and a growing population implies pressures on these, creating a higher demand for water and energy.

From a social perspective, the tightly knit collaborative communities of cities promote a free flow of ideas, leading to exponentially greater innovation. In this context, an example of just such innovative measures is how governments have undertaken 'smart city' (SC) initiatives to bring better services that respond to the demands of an increasingly urban population. Therefore, SCs enable a set of initiatives that city leaders can undertake that lead to a better use of resources. These measures imply different innovations based on the use of information and communication technologies (ICTs) in order to develop more efficient services (Vlacheas et al., 2013). In this way, governments have instituted innovations in education, healthcare, public safety, utilities, administration and other areas.

This chapter seeks to examine the best practices in sustainability applied in the Spanish city of Vitoria-Gasteiz, through a case study based on an analysis of the contents of the city's website. The methodology used consisted of, first, a literature review of studies that have examined the topic of SCs, followed by a second phase of an analysis of the selected city's website (Moneva & Martín, 2012; Navarro, Alcaraz & Ortiz, 2010; Navarro, Ruiz Lozano, De los Ríos Berjillos & Tirado Valencia, 2011; Nevado, Gallardo Vázquez & Sánchez Hernández, 2013; Pina, Torres & Acerete, 2007; Rodríguez, Caba & López, 2006, 2007). The results reveal that resident participation has been boosted through municipal services created

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