Chapter 3
Green Urban Planning and Design for Smarter Communities

Ozge Yalciner Ercoskun
Gazi University, Turkey

ABSTRACT

Information and Communication Technology (ICT) changes the concept of place and social life. Researchers should find some solutions about how to combine ICT with sustainable construction to revitalize an existing neighborhood and to create a new model for growing areas especially in small cities. The objectives of this study are to search for new ways to create sustainable communities with the sustainable use of ICTs, to discuss the advantages and disadvantages and the use of ICTs in cities, to put a new approach as 'eco-tech' city, and to explore the potential ways of creating sustainability in practice. The study summarizes the advantages and disadvantages of the use of ICTs in cities and describes smart city and eco-tech city concepts. The following part, which is consisted of a discussion of urban planning and design, incorporating ICT for the construction of sustainable communities, explores the prospect that dehumanized communication can be ameliorated through progressive, innovative and green urban planning and design strategies.

INTRODUCTION

"We are convinced that sustainable human life on this globe cannot be achieved without sustainable local communities. Cities are key players in the process of changing lifestyles, production, consumption and spatial patterns" (The Aalborg Charter, 1994). The big question is how to meet the needs of urban systems. Is there any way to incorporate ICT in urban planning and design to construct sustainable communities? Can ICTs be employed to develop a prototype for a smart or ecological and technological (eco-tech) city? This chapter attempts to find some solutions to such questions.

ICT is a tool only however if it is not taken seriously and dealt with professionally, it can be a 'bastion to the denial of reality' in urbanism. ICT causes spatial changes in an urban area. Basically, it

transforms some facilities into telespaces, such as bookstores to bitstores, galleries to virtual museums, schools to virtual campuses, banking chambers to ATMs, department stores to e-shopping and work in offices to telework (Drewe, 2000). The remarkable power of ICTs in supporting new types of information flow, communication, transaction and cultural experience can be mobilized and shaped in various ways, which can have positive impact on cities. The challenge is to design local ICTs, which are equitable and supportive of a genuine community and civic dialogue (Arifoglu, 2004). New models of social innovation are needed to bridge urban digital divides and to improve skills in different groups of community (Graham, 2002). Harvey points out social divide. For him, community often means enhancing privilege on the already privileged and leaving the underprivileged to their own devices. Since the 1950s, the nature of planning and zoning laws have fostered the separation of economic classes, destroyed open space, and eroded the sense of community and care for the common good. In this climate, public discourse degenerates into competitive clashes over resources pitting the suburbs against downtowns and the rich against the poor. Harvey argues that the direct effects of this polarization of rich and poor are: Division and fragmentation of the metropolitan space, loss of sociality across diversity, and localized defensive posture towards the rest of the city. He notes that global income inequalities are causing large-scale environmental devastation, cultural destruction, and the undermining of social cohesion. If policy created the situation, perhaps policy can alter it. He advocates the renewal of utopian dreaming as a hope. "As we collectively produce our cities, so we collectively produce ourselves. We need projects concerning what we want our cities to be are, therefore, projects concerning human possibilities, who we want, or, perhaps even more pertinently, who we do not want to become" (Harvey, 2000:200). Once again Harvey encourages us to engage in imagining utopias of urban space where the role of designer are assigned.

Urban designers should use new technical tools offered by new technological instruments. There should be balance between real spaces and digital spaces. Urban designers play a prominent role as a weaver between different groups and organizer of public places (Velibeyoglu, Gencel, 2001). Additionally, a new urban design approach should be generated for the cities of the future.

The symbolic importance of labeling and branding cities with 'cyber', 'intelligent', 'digital' or 'smart' prefixes is stressed around the world (Graham & Marvin, 1999). The solution proposed here is an 'eco-tech' (ecological and technological) city model to contribute to the better sustainability of small cities supporting localities in the globalized world. Such urban strategies shape face-to-face interactions in place in parallel with electronically mediated ones in eco-tech cities. Some kinds of technology can be useful in eco-tech cities (Bogunovich, 2002): Environmental technologies, which encompass technologies of energy, water and waste; ICTs, which include computer based hardware and software that enable the transfer of data; the environmental sensing technologies in wired or wireless environments, and finally, GIS, where geo-referenced data is stored, transformed, visualized, queried and reported (Bandyopadhyay, 2001).

The objectives of this study are 1) to examine the question of how to create sustainable communities with the sustainable use of ICTs 2) to discuss the advantages and disadvantages and the use of ICTs in cities 3) to put a new approach as 'eco-tech' city, and 4) to explore the potential ways of creating sustainability in practice.

The first part of this chapter states the advantages and disadvantages of the use of ICTs in cities and makes a description of smart city and eco-tech city concepts. The following part discusses urban planning and design approaches that incorporate ICT into the construction of sustainable communities. Developing new approaches and techniques for appropriate design outcomes is the main challenge to be explicated about how

Related Content

Case Study Reclaimed the Greener Way: A Proposed Supply Chain Model for the Reclaimed Lumber Industry
John Kaliskiand Queen Booker (2010). *International Journal of Social Ecology and Sustainable Development (pp. 54-61).*
www.irma-international.org/article/case-study-reclaimed-greener-way/47396

A Modified-SCD for Optimize Performance Rate at Polar Code
 Prakash K Mand G S. Sunitha (2019). *International Journal of Green Computing (pp. 1-21).*
www.irma-international.org/article/a-modified-scd-for-optimize-performance-rate-at-polar-code/232692

Investigating the Measurement of Consumer Ecological Behaviour, Environmental Knowledge, Healthy Food, and Healthy Way of Life
Norazah Mohd Suki (2014). *International Journal of Social Ecology and Sustainable Development (pp. 12-21).*
www.irma-international.org/article/investigating-the-measurement-of-consumer-ecological-behaviour-environmental-knowledge-healthy-food-and-healthy-way-of-life/112111

Functions of the Performance Appraisal System: Analyses and their Impact on Level of Employees' Motivation
Bahrija Umihanicand Mirela Cebic (2012). *International Journal of Sustainable Economies Management (pp. 1-15).*
www.irma-international.org/article/functions-performance-appraisal-system/63018

Role of Images in Constructing Public Opinion About Environmental Matters in Malaysia
Mohamad Saifudin Mohamad Saleh, Harald Heinrichsand Nik Norma Nik Hasan (2021). *International Journal of Social Ecology and Sustainable Development (pp. 115-130).*
www.irma-international.org/article/role-of-images-in-constructing-public-opinion-about-environmental-matters-in-malaysia/266253