Chapter IX
Towards Ubiquitous City: Concept, Planning, and Experiences in the Republic of Korea

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ABSTRACT

The rapid development of information and communication technologies had a significant effect on contemporary urban and regional planning. Ever since Mitchell (1999) envisaged a vision of “E-topia,” a development of robust delivery system for the digital network into knowledge-based urban development has been rigorously challenged. Information and communication technologies are evolving cities from virtual city, which reproduces urban elements inside the virtual computer world, to ubiquitous cities, where the ubiquitous computing amongst urban elements, such as people, buildings, infrastructure, and urban space is available. Nevertheless, a strategic ubiquitous city planning is yet to be addressed in an integrated manner by planners and regional analysts because the technologies and applications still need to be fully developed. The Republic of Korea has recently had some experience in developing the ubiquitous city concept and planning principals as a means of knowledge-based urban development. This chapter introduces key ubiquitous technologies, and discusses implications of the ubiquitous city concept into planning and design schemes for knowledge-based urban development in the Republic of Korea.
INTRODUCTION

Information and communication technologies (ICTs) had occupied their position on knowledge management and are now evolving toward the era of self-intelligence (Klosterman, 2001). In the 21st century, ICTs for urban development and planning are imperative to improve the quality of life and place. This includes the management of traffic, waste, electricity, sewerage, and water quality, monitoring fire and crime, conserving renewable resources, and coordinating urban policies and programs for urban planners, civil engineers, and government officers and administrators.

The handling of tasks in the field of urban management often requires complex, interdisciplinary knowledge, as well as profound technical information. Most of the information has been compiled during the last few years in the form of manuals, reports, databases, and programs. However, frequently, the existence of these information and services are either not known or they are not readily available to the people who need them. To provide urban administrators and the public with comprehensive information and services, various ICTs are being developed.

In early 1990s, Mark Weiser (1993) proposed the Ubiquitous Computing project at the Xerox Palo Alto Research Centre in the U.S. He provides a vision of a built environment in which digital networks link individual residents not only to other people, but also to goods and services whenever and wherever they need (Mitchell, 1999). Since then, the Republic of Korea (ROK) has been continuously developing national strategies for knowledge-based urban development (KBUD) through the agenda of Cyber Korea, E-Korea, and U-Korea.

Among above-mentioned agendas, particularly the U-Korea agenda, aims the convergence of ICTs and urban space for a prosperous urban and economic development. U-Korea strategies create a series of U-cities based on ubiquitous computing and ICTs by a means of providing ubiquitous city (U-city) infrastructure and services in urban space. The goal of U-city development is not only boosting the national economy but also creating value in knowledge-based communities. It provides opportunity for both the central and local governments to collaborate with the U-city project, to optimize information utilization and to minimize regional disparities. This chapter introduces the Korean-led U-city concept, planning, design schemes and management policies, and discusses the implications of U-city concept in planning for KBUD.

BACKGROUND: CONCEPTS AND KEY ISSUES

The U-City Concept

The aim of U-city is to create a built environment where any citizen can get any services, anywhere, and anytime through any ICT devices. Tremendous speeding in ICT development has brought the conventional city in terms of intelligence, innovation, and evolution to E-city and then to U-city.

The intelligent services, such as home banking, telecommuting, teleconferencing, telemedicine, intelligent transportation system (ITS), remote sensing, monitoring, and control of urban infrastructure are always available in U-city. It is crucial to provide high speed, convenient, and accessible information and services anytime and anywhere. U-city concept also helps realize U-democracy to encourage citizens to participate in policy decision-making, negotiation and voting. This aims to make citizens live in comfortable, convenient, secure, and healthy environments using ubiquitous technologies.

U-city refers to the environmentally friendly and sustainable smart (or knowledge) city, which makes the ubiquitous computing available amongst the urban elements, such as people, building, infrastructure, and open space. The U-city is
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