Preface

In the rapidly growing knowledge economy, the talent and creativity of those around us will be increasingly decisive in shaping economic opportunity. Creativity can be described as the ability to produce new and original ideas and things. In other words, it is any act, idea, or product that changes an existing domain or transforms an existing domain into a new one. From an economic perspective, creativity can be considered as the generation of new ideas that is the major source of innovation and new economic activities. As urban regions have become the localities of key knowledge precincts and knowledge clusters across the globe, the link between a range of new technologies and the development of 'creative urban regions' (CURs) has come to the fore. In this sense, creativity has become a buzz concept in knowledge-economy research and policy circles. It has spawned 'creative milieus,' 'creative industries,' 'creative cities,' 'creative class,' and 'creative capital.' Hence, creativity has become a key concept on the agenda of city managers, development agents, and planners as they search for new forms of urban and economic development. CURs provide vast opportunities for knowledge production and spillover, which lead to the formation of knowledge cities. Urban information and communication technology (ICT) developments support the transformation of cities into knowledge cities. This book, which is a companion volume to *Knowledge-Based Urban Development: Planning and Applications in the Information Era* (also published by IGI Global) focuses on some of these developments. The Forward and Afterword are written by senior respected academic researchers Robert Stimson of the University of Queensland, Australia, and Zorica Nedovic-Budic of the University of Illinois at Urbana-Champaign, USA. The book is divided into four sections, each one dealing with selected aspects of information and communication technologies and creative urban regions.

PART I: KNOWLEDGE, ECONOMY, CREATIVITY, AND URBAN REGIONS

The five chapters in Part 1 consider the broad connections between the general theme of knowledge development, urbanization, and the performance of cities. In Chapter 1, Phil Heywood introduces the discussion of knowledge and the performance of cities (and regions) by specifically considering the role of integrated planning in coping with the issues associated with knowledge-based urban development and the quest for sustainable regional and metropolitan outcomes. Noting that planning of metropolitan and creative urban regions faces a range of repeated challenges in producing sustainable outcomes, Heywood identifies a range of currently promising responses to these challenges and then develops a fourfold path towards sustainable outcomes. Significantly, the framework developed provides an effective planning tool in the context of rapid change often associated with knowledge-based urban development.

The second chapter by Ahmed Driouchi focuses on understanding the links between urbanization in developing economies and knowledge. In particular, Driouchi considers how cities in the developing

world can be major sources and drivers for spatial and temporal generation and diffusion of knowledge, and how the development of such knowledge is important for the creation and distribution of prosperity in these countries. The analysis presented illustrates the existence of potential for improved urban quality of life through the acceleration of education, research, and innovation. However the evidence produced suggests that a significant hurdle exists in economies that lack appropriate monitoring of the extent of knowledge development.

The third chapter, by Cristina Martinez-Fernandez and Samantha Sharpe, focuses on intellectual assets and knowledge vitality in urban regions. Drawing on a study of the intellectual dynamics of a university's knowledge generation, transmission, and transfer activities into the broader urban region, the chapter asks the question of how universities can best contribute to the intellectual vitality of the cities and regions in which they are embedded. Martinez-Fernandez and Sharpe present a case study of the University of Western Sydney, Australia and the way it imbeds its knowledge generation into the broader regional economy and society it represents. Critically, the authors identify the role that an integrated approach that includes institutions at all levels, university and government, has in ensuring that knowledge transmission, generation, and transfer results in positive local regional economic development outcomes.

The fourth chapter by Katariina Ala-Rämi focuses on understanding social networking and knowledge transfer, considering a case study of technology firms in Oulu, Finland. The chapter focuses on the new challenges facing the region as larger firms move manufacturing production offshore, and discusses the limitations of distant collaboration and the city's urban scale and diversity in developing growth clusters. Ali-Rämi uses a specific case as an example to explore knowledge transfer in product development and studies social networking in collaborative product development, and the role of physical and temporary clusters and ICT in that development. The chapter considers the limitations imposed by distant collaboration, and the impact of city urban scale and diversity in developing growth clusters. In particular, it considers social networking in collaborative product development and the role of physical and temporary clusters and ICT in that development.

The final chapter in this section authored by Max Nathan focuses on Richard Florida's creative class framework, applying it to urban regions in the UK. Drawing on a range of previously published work, Nathan tests Florida's model and finds it to be a poor indicator of city performance in the UK. Rather there is other stronger evidence that diversity and creativity are linked to urban economic growth. Nathan's conclusions are that while the creative class model as set out by Florida cannot explain city performance in the UK, it does contain useful components which should not be ignored by policymakers. However, Nathan argues that importantly any attempt to understand the link between creativity and city performance must account for the particular historical, cultural, and geographical milieu of a place, and that in certain cases cities may be better served by starting elsewhere in their search for positive economic performance.

PART II: URBAN ICT POLICY, DIGITAL GOVERNANCE, AND KNOWLEDGE SOCIETY

The second section of this book moves from a more general focus to specifically consider the issue of digital governance and urban ICT policy. The first chapter in this section is by Nicholas C. Maynard on municipal ICT policy goals and technology choices. Maynard reviews the literature regarding the development of a policy framework for understanding the key decisions facing municipal ICT policymakers. The chapter offers a clear understanding of the interdependent choices regarding municipal ICT goals,

initiatives, and technology choices. With each decision, there is a risk to a municipality of choosing the wrong goal or technology for its particular environment. By creating a public retail operator in a highly competitive market, a municipal government may in fact dampen private sector investment and resulting in a net negative impact for the area. In addition, these poor choices cannot be easily rectified. With the large sunk costs of ICT deployments, future options are constrained by past choices. Therefore, it is vital that policymakers understand their range of options for ICT goals, initiatives, and technologies before beginning the process of implementing their policies. Moreover, Maynard argues that these ICT policies must fit within the broader context of development within the city, and policymakers must ensure that the ICT programs that they choose to fund must assist in these larger goals and not just the narrow goal of higher penetration rates.

In the second chapter of this section, Rodrigo J. Firmino considers urban technology and planning in medium-sized cities in São Paulo, Brazil. The chapter is driven by the recent wave of public initiatives in Brazil that have expressly addressed the best-practice digital inclusion strategies. Firmino focuses on the way local authorities and planners look at ICT issues in terms of visions, physical and digital initiatives, and policy. The aim of the chapter is to try and find out the kind of attention urban decision makers and planners have given to the potential of knowledge-based urban developments, while dealing with the day-to-day tasks of urban planning and governance. The chapter stresses that the role of architects and urban planners is deeply affected by the combined development of ICTs and the production of built environments, and that moreover this issue has not as yet received adequate attention from the relevant professionals in the medium-sized cities of São Paulo. The chapter concludes by arguing that the future development of space according to the increasing pervasiveness of new telematics technologies and the use of information is a theme that deserves more attention and further research.

The third chapter in this section focuses on the development of e-governance in Singapore. The chapter by Scott Baum, Tan Yigitcanlar, Arun Mahizhnan, and Nara Andiappan considers the role of e-governance in Singapore, and in particular the potential for the Singapore e-government model to fully mature. The establishment of e-government has been an important policy goal within contemporary Singapore. Recognizing the gains to be made by harnessing ICTs to strengthen and streamline the business of governance, Singapore has successfully developed its e-government sector across three strategic plans focusing on developing a world-class e-government experience that will delight customers and connect citizens. This chapter reviews the development of e-government in Singapore, focusing on the outcomes of e-government strategic plans and discussing issues and outcomes associated with developing a fully mature e-government position.

The fourth chapter of this section is by Tommi Inkinen, who focuses on challenges of digital governance and in particular on local efforts to generate a citizen-centered knowledge society. Using a case study of Tampere, Finland, Inkinen considers the ways in which the city of Tampere has attempted to improve the e-inclusion and digital governance of the city, and the challenges that face the development of a citizen-based information society. In the chapter Inkinen makes specific conclusions regarding the particular case of the eTampere experience. His more general conclusions are that ICTs have offered solutions to overcome many problems regarding the transfer of information. The major challenge for the design of end user services seems to be the creation of relevant contents. Importantly, Inkinen argues that development and enhancement require a sound knowledge of the social conditions underlying the access, skill, and motivation of citizens. These issues are related to the whole of society whose scope of change is much longer than it is for that of technological development. The successful and purposeful development of digital governance is thus a question of integrating technology in a social structure. The development also requires continuous networking and information exchange between stakeholders and reference groups involved in the process of public service provision.

The final chapter in this section is by Richard L. O'Bryant, who focuses on Internet access as a public good and understanding the role that ICT can play in addressing traditional low-income community issues. The case study that O'Bryant uses relates to U.S. federal policies to encourage community empowerment and family self-sufficiency. These policies have attempted to develop the knowledge base and capacity for communities and families to be able to do more for themselves and be less reliant on the government. O'Bryant notes that to date, U.S. federal self-sufficiency efforts have not included personal computing and Internet use as a method to assist families. Using findings from the Creating Community Connections study, he notes however that ICTs can play an active role in empowering low-income individuals and communities, and making them more self-sufficient.

PART III: SUPPORTING TOOLS FOR THE KNOWLEDGE BASE OF CITIES

The third section of this book considers a range of supporting tools and technologies that have evolved to support the knowledge base of cities. The first chapter in this section is by Tan Yigitcanlar, Ömür Saygin, and Hoon Han, and it focuses on online participatory planning support system tools. The key point made by the authors is that planning support systems can be powerful tools for urban development, urban planning, and policy making. Since the advent of modern urban and regional planning, planners have relied heavily on maps and various kinds of data to assist in the decision-making process. In the last three decades, a mechanism for prediction or modeling has been made available to collaborative processes through the use of computer-based analysis tools, and most recently planning support systems. The advances in computer technology have also made the practical integration of spatial (map-based) and non-spatial information. Linking maps to relevant data via these new planning support systems has become a relatively new tool of urban planners. In addition the authors argue that public participation has long been recognized as an important component of the planning process. Planning support systems offer an opportunity to enhance participatory planning activities. The use of online participatory planning support systems to support the planning process is becoming common in many communities all around the world. As a result, planning discipline—and also practice—is becoming more transparent and democratized. Web-based geographic information system applications are making all these things viable, and have become an important part of intelligent urban planning and policy.

The second chapter in this section is by Guido Vonk and Stan Geertman, and follows on from the previous chapter by focusing specifically on planning support systems. The authors begin from a stance that currently there exists little insight into how to enhance the usage of planning support systems in planning practice. This is problematic since planning support systems could possibly help planners handle the complexity of planning, which they experience as difficult to handle. The aim of Vonk and Geertman's study is to learn lessons on how to effectively integrate planning support systems into planning practice, thereby facilitating the handling of knowledge and information in planning. The authors use a case study approach arguing that while there is clearly a long way to go, there have been significant lessons already learned.

The third chapter in this section focuses on the opportunities and challenges facing the development of strategic plans and policies regarding knowledge cities in ubiquitous technology space. Tschangho John Kim focuses on interdisciplinary research and education in the area of ICTs and utilizes the emergence of pervasive ICTs, identifying how cities can grow in more sustainable and intelligent ways. Considering South Korean cities, the author argues that ubiquitous cities or U-Cities are defined as knowledge cities where public and private services can be delivered and received anywhere and at anytime. Considering how these have developed in South Korea, the author argues that endless possibilities for ubiquitous

geographic information, coupled with ubiquitous computing and ICTs, are being currently developed that promise increased convenience, awareness, transparency, and access to information and social opportunities that break traditional power structures by receiving and delivering services anywhere and at anytime. While the concept of a ubiquitous city is a uniquely Korean idea and construction of ubiquitous cities are underway in a dozen different localities in Korea, there remain important and urgent issues we need to address in order to plan and build a successful ubiquitous city.

Staying in the Asian region, the final chapter in this section focuses on the development of e-government practices in Hyderabad, India. In this chapter Sumeeta Srinivasan, Peter Rodgers, and Sudarsanam Padam examine the use of e-Seva in order to understand the relevance of information technology for the provision of services in a developing city. In particular they focus on the implications and potential of using ICT to develop transparent frameworks for local and regional urban governance. The authors note that the challenge to urban management in India is that a variety of spatio-temporal data need to be integrated at various resolutions and many different scales depending on the agency that collected the data. The need for integrated planning is especially urgent because cities within India face enormous problems with respect to managing their infrastructure while dealing with unrelenting growth. The development of online capabilities such as e-Seva provides a sound model for the development of integrated planning approaches.

PART IV: ICTS AND THE DEVELOPMENT OF CREATIVE URBAN REGIONS

The final section of this book considers some case studies of ICTs and the development of creative urban regions. In the first chapter of this section, Koray Velibeyoglu and Tan Yigitcanlar present an analysis of the ICT experience in Marmara, Turkey, in the wake of the European harmonization process. The chapter sheds light on organizational realities of recent practices of information systems and technologies based on the evidences from selected local government organizations in the Marmara region. Velibeyoglu and Yigitcanlar present the results of the SWOT Analysis of Marmara in comparison with national- and European Union-level evaluations in the field of Turkey's knowledge economy and information society. Coming from an argument regarding the need for implementation paths for ICT policies, the authors present case studies of ICT best practice from Marmara and note that the efforts made to move towards a knowledge region have been hampered by the uncoordinated nature of supply instruments. The chapter concludes by highlighting the central role that local actors, with regional authorities, play in the European Union integration process, and also in forming creative urban and regional environments in the Marmara region.

The following chapter in this section is by Feral Geçer, Adile Arslan-Avar, Koray Velibeyoğlu, and Ömür Saygin, and focuses on the integration between ICTs and urban space in Istanbul-Maslak, Turkey. In particular the chapter investigates the impact of information technology on the urban space transformations and processes in Maslak, by using time-series data to demonstrate the dimensions of changes in spatial structure. The authors note that transformations in Istanbul were not primarily driven by information technology, but rather by constant changes in land ownership along transportation routes, therefore questioning the primacy often given to ICTs in this type of urban development. The key argument put forward by these authors relates to the need to consider the uniqueness of a city's development trajectory as it moves to becoming a global ICT region. The new central business district formation of Istanbul shows the same agglomeration tendencies of the administrative functions of the firms. The traditional central business district of Istanbul can no longer provide both the necessary physical and social infrastructure and spatial needs of headquarters or regional headquarters of multinational, international,

and intra-national corporations due to limited land, high land prices, insufficient telecommunication infrastructure and services, and so forth. Additionally, as is also common practice in world cities, the single dominant center is to transubstantiate into a multi-centered structure.

The final chapter by Da-Mi Maeng and Zorica Nedović-Budić considers issues of the spatial and planning implications of ICT by examining the spatial distribution of ICT infrastructure and activity in a metropolitan region. The authors provide a better understanding of the geography of ICT infrastructure and activities, and also of ICT specialized clusters in a case study region. The existence of ICT clusters may help to explain the spatial unevenness of ICT infrastructure and activity in the region. The findings provide insights concerning effective planning strategies for managing the impact of ICT-related development in urban regions. Like other contributors, Maeng and Nedović-Budić argue for the need for further research, stating that the contribution of ICT infrastructure to knowledge-based urban development needs to be explored along with other knowledge city assets, including, for example, knowledge-centered institutions and businesses, a well-trained labor force, and proactive local and regional government policy. Further development of analytic frameworks to illustrate how ICT and urban environments interact would be of great value to urban planning and policy geared toward knowledge city development.

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