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# Smart Development in Smart Communities

Edited by  
Gilberto Antonelli and  
Giuseppe Cappiello

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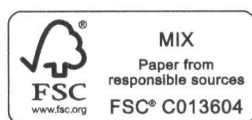
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# Smart Development in Smart Communities

The concept of smart cities has become one of the most significant new lines of thinking to emerge in the social sciences in recent years, both from the research and policy angles. To date, the focus in smart specialization has been on what regions as a whole can do to bring about innovation, but it hasn't necessarily addressed the role cities play within the field. This book aims to address that gap, drawing together a team of leading contributors, to illustrate this process with particular focus on cities.

*Smart Development in Smart Communities* discusses the cross-fertilization between smart specialization and cities in fostering smart development and its interactions with the macro-, micro- and meso-economic framework, from both a theoretical and applied perspective. Specific topics covered by the book include: human capital formation and utilization; centralized/decentralized industrial policies; innovation policies; collective learning; and the role of public utilities in sustaining smart development processes.

This book tackles some of the most important questions that must be faced when investigating how structural change and innovation processes are shaping local and global economic development. It will be of interest to academics and researchers in the area of Development Economics, Urban Studies and Public Management.

**Gilberto Antonelli** is Full Professor of Economics at the University of Bologna, Italy.

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**Giancarlo Campri** has been the Director of Personnel and Organisation at the Hera Group since 2002. He holds a degree in Political Science and a C.U.O.A. Master's earned in 1985. He has held an executive position since 1992. His outstanding experience in organizational development and personnel management has been garnered since 1985 through roles of increasing managerial responsibility at Praxi S.p.A., Magneti Marelli S.p.A., Compagnie De Saint Gobain, Ocean S.p.A. and at the Piaggio Group. He was also Director of Human Resources and Organisation at Seabo S.p.A. in Bologna while concurrently holding the post of Senior Executive Vice President of IT Systems and Head of the ERP project. Currently he is a member of di FederUtility's Federal Trade Commission, the C.C.N.L. gas-water-power Negotiation Delegation and the C.C.N.L. Federambiente Environmental Work Group. He was a member of the board of directors at Antoniana S.r.l (2006/2007), Famula On Line S.p.A. (2001/2003) and Fleet Service S.r.l. (2001/2003), as well as a member of the Province of La Spezia executive self-evaluation team (2001/2007).

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He has developed extensive governmental, European and industry networks and has been involved in technology transfer and technology funding. More recently, he has taken on the management of several projects relating to ‘foresight and technology assessment’ and to support the Lombardy region in starting a program of the evaluation system to reward and to strengthen the excellences, to assure the adequacy of the offer, to promote the continuous improvement of the Lombardy research system and to foster interactions between research organizations and industry.

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# Foreword

The ‘smart’ attribute is by now a popular leitmotiv that advocates innovativeness, participation, collaboration and coordination within a rationale of network-based and policy-defined spatiality. Despite some fuzziness in its scope and theoretical bases, the concept of smartness can be a valuable container for the discussions about regional and urban development models that try to reconcile the pursuit of competitiveness and sustainability of local communities within a ‘smart development’ agenda. Such a concept goes beyond the one of ‘smart growth’ and is driven by two interacting forces: ‘smart specialization’ and ‘smart city’.

This book represents an attempt to provide an original approach in addressing the most important research questions arising from the pursuit of smart development through the creation of smart communities.

It draws from two background papers that have been prepared for two workshops held in 2013 in Modena<sup>1</sup> and in 2014 in Bologna,<sup>2</sup> respectively,<sup>3</sup> and from the discussion of the papers that have been presented in the same occasions. The first workshop was focused on the composite notions of smart specialization, smart development and industrial policy in a local and global perspective. The second workshop discussed the different meanings of the smart city concept in function of local development policies. Through these workshops, we addressed specific research questions dealing with the key role of human capital in driving the evolution of urban areas in a smartness perspective and the possible tasks of the different levels of government in promoting the development of smart cities and communities in accordance with Europe 2020 strategy for smart, sustainable and inclusive growth. The volume can thus be viewed as the intermediate goal of the research and debate launched with these two workshops and continued later with seminars, meetings and other initiatives involving research and discussion at national and international levels. After having extensively dealt with the relationships between smart specialization, smart city and local development, we now present a comprehensive study of the nature, causes and effects of ‘smartness’ in relation to economic development.

In line with this premises, the volume is divided in three parts. The first part is devoted to the conceptualization of the idea of ‘smartness’ as a blending of smart specialization and smart city within the ‘smart development’ paradigm. The

second part is devoted to the measurement and application of the notion of smart development, mainly but not exclusively, to the Italian context. The third part is devoted to the assessment of the implications of the previous essays and contemporary debate on the role of multi-level governance in order to map the policy agenda of smart development in Italy and in Europe. Specific sections will concern transport planning and the public utilities sector in light of their crucial roles in shaping the supply side of the smart development paradigm.

Overall, there is a clear theoretical relevance of both strategic and operational issues addressed in this book. Both scholars and experts are paying more and more attention on these topics in the perspective of exploring new paths of economic development after the global crisis. Within this stream of research we need a clear idea of (1) the implications of the cross-fertilization between smart specialization and smart city in fostering smart development and of its interactions with the macro-, micro- and meso-economic framework; (2) what are the really important characteristics of labour markets functioning, human capital formation and utilization, human development and social capital strengthening as the key driver of smart development and structural reform policies; and (3) the really important features of industrial policy at the centralized/decentralized level as companion policies for smart development. This, in turn implies a clear definition of the relationships between investment policy, industrial policy and innovation policy and the respective fields of action. A first cornerstone is the relevance of the multi-disciplinary approach to the topic. Different skills and types of knowledge are involved both in the analysis of the concept and in the prediction of the relevant applications. A second inference lies in the crucial role of people, and women in particular, as conscious actors in the processes of transformation of the urban economic structure, which interacts with the critical role of innovation. A third key point relates to the quality of services provided to citizens and to good governance requirements concerning their production and provision. The governance of smart development is required to promote accessibility to information, transparency, public involvement in the decision-making process, citizens' participation and social inclusion. This implies that governments effectively promote cooperation among stakeholders and that administrators are endowed with both relational and managerial skills. Moreover, there should be no restrictions on information flows and a sufficient coordination between different levels of government.

A pivotal role for the achievement of smart development is played by human capital (a part of the smart people dimension) and social capital. Firms' innovative and learning capabilities go beyond the presence of information and communication technology (ICT) infrastructures and extend to the production of knowledge, innovative and cultural/creative services. This generates positive effects in terms of demographic and economic growth through the attraction of additional human capital. However, progress or technical change may accelerate the obsolescence of knowledge and skills to an extent that penalizes low-qualified workers ('skill-biased technical change'). This generates the need to make educational agencies and firms' training departments adequate for increasing skill complexity and the



intangible networks unfolding by the competitive environment. In particular, firms can support the activation of tailored entities that set in motion complex cognitive processes spreading and reshaping knowledge throughout the organization. They can also integrate internal labour markets in the processes of knowledge transmission and intersection of cultures, technology and innovation. This perspective would be particularly suitable at regional level where the relationship between firms and local community could support the creation of learning networks that contribute to the distinctive features of regional innovation paths.

In the Hera Group, the commitment to such a model matched with the choice of establishing a corporate university named HerAcademy. Provided that workplace training is no longer able by itself to cover all the work-based learning needs, the objective of HerAcademy is to integrate internal training practices with a wide variety of learning activities within and outside the organization. In this respect, the main role of HerAcademy is to improve the internal organization of knowledge while at the same time contributing to the enhancement of the external organization of knowledge and of social interactions with local communities. HerAcademy is also involved in the evaluation and monitoring of all staff training activities for employees of the group and concerning the upgrading of different strategic skills. In this framework, a corporate university can become a driver of the renewed economic organization of knowledge within the group by fruitfully interacting with the external organization of knowledge.<sup>4</sup>

Consistently with this approach, HerAcademy represents a space of reflection and discussion on the issues of knowledge sharing, innovation enhancement and skills development within the processes of human and social capital accumulation. Moreover, it facilitates the achievement of high standards of sustainability (economic, environmental and social) in local communities. HerAcademy therefore constitutes a ‘meeting place’ between the firms’ strategies, instances and needs coming from the internal and external community of stakeholders and the scientific progress on skills’ and human capital development. These three components are respectively represented by the governance model of HerAcademy (Figure 0.1).

Overall, HerAcademy can play the following potential roles in contributing to the creation of smart communities, both internal and external to Hera Group: (1) identifying new ways to store and share knowledge (including tacit ways), (2) implementing the pipelines of professional skills as they are redefined by organizational and institutional change, (3) improving skills assessment by promoting reflections about measuring skills and evaluating the performance of training initiatives and (4) serving as a vehicle for implementing partnerships and initiatives with local communities.

In line with its mission, HerAcademy promotes the academic and institutional discussion on topical issues that can generate relevant implications for both the activities of the Hera Group and of local communities. Once the topic has been identified, such discussion takes place in three phases. In a preliminary phase, a complete review of the state of the art in the scientific and grey literature is performed in cooperation with experts and academic institutions. This activity is