Smart and Connected Cities and Communities Minitrack
(Introduction)

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Cities around the world are entering a new era of transformation in which residents and their surrounding environments are increasingly connected through rapidly-changing intelligent technologies, sometimes called, smart technologies. This transformation, which has become a top priority for many city governments, offers great promise for improved wellbeing and prosperity, but it also poses significant challenges at the complex intersection of technology and society.

Although "smartness" has traditionally been associated with urban environments, lately, there is a stronger emphasis on the concept of smart communities. On the one hand, this is the result of recognizing the existence of contexts that can benefit from the use of smart technologies; from localities or villages to communities, communes, towns, cantons, cities, and megacities. On the other hand, it is the consequence of conceptualizing smartness beyond technology and in relation to the people living in those communities, who are connected by common goals, interests, and challenges. A smart and connected community can therefore be conceptualized as a community that synergistically integrates intelligent technologies with the natural and built environments, including infrastructure, to improve the social, economic, and environmental well-being of those who live, work, or travel. Building on the notion of community informatics, smart communities can be seen as enabling and empowering citizens and supporting the individual and communal quests for wellbeing.

Although the literature is rich in references to smart cities and communities, this is still a developing and fuzzy concept that is not used consistently. Despite the different definitions and studies, there seems to be a common understanding of a smart community as a multidimensional and multifaceted concept that goes beyond the mere use of technology and infrastructure. Although technology is a necessary condition to become smart, it is not the only one. City administration and community management, information integration, data quality, privacy and security, institutional arrangements, and citizen participation are just some of the issues that need greater attention to make a community smarter today and in the near future. The literature on smart cities and communities is fragmented, particularly in terms of the strategies that different cities and communities should follow in order to become smarter. What most of the literature does agree on is that there is no one route to becoming smart and different communities have adopted different approaches that reflect their particular circumstances.

The five papers included in this minitrack represent different methodologies, theories, conceptualizations, and assessments of smart and connected cities and communities. Together, they offer a platform for discussion of emerging and innovative research in this area.

In the first paper, "Technological and Human Development of Smart Cities: An Empirical Characterization of EUROCITIES Case Studies", María E. Cortés-Cediel, Iván Cantador, and Pedro Manuel Rodríguez Bolívar analyze a large number of real case studies implemented in major European smart cities with the goal of shedding light on the dichotomy between the technological component and the human component of smart cities. In order to do so, the authors first characterize and categorize the cities according to theoretical smart city models proposed in the literature. Based on the cities' characteristics and categories, they then compare them according to external variables, such as their positions in worldwide smart city rankings, and their administrative contexts

In the second paper, "Multilevel Design for Smart Communities – The Case of Building a Local Online Neighborhood Social Community", Christian Grotherr, Pascal Vogel, and Martin Semmann analyze a social community building project that aims to improve peer-support services and access to resources of local service providers. By applying mechanisms of local neighborhood communities, the authors aim to capture insights into building smart communities by engaging multiple actors, ranging from institutions to individual actors (citizens). Specifically, they build on an IT-

enabled neighborhood service platform, which facilitates mobilization and integration of resources, and aims to ensure a high quality of life for citizens

The third paper, "Digital Platform-Enabled Community Development: A Case Study of a Private-Public Partnership Sustainability Initiative", discusses the role of IT and public-private partnerships (PPP) in developing sustainable cities and communities. Edward Hopkins, Felix Ter Chian Tan, Calvin M.L. Chan, Carmen Leong, and Anthony Wright present preliminary findings from a case study of a private-public partnership community-based sustainability initiative that is enabled by a digital platform. This preliminary analysis sheds light on the mechanisms underlying the formation of the PPP, the development of the PPP's business model, the development of the digital platform, and ultimately the emergence of a community for sustainability. A framework for digital platform-enabled community development is posited based on the case analysis, and implications to both research and practice, as well as future research work, are then discussed in concluding this paper.

"Towards Designing Effective Governance Regimes for Smart City Initiatives: The Case of the City of Duisburg" is the fourth paper of this minitrack. In it, Peder Bergan, Anne-Marie Mölders, Kevin Rehring, Frederik Ahlemann, Stefan Decker, and Stefan Reining describe the development and design of a governance regime which is grounded on Information System principles as well as the resulting governance structure in a medium-sized city in Europe. Using the action design research approach, the authors design, implement, and revise in multiple iterations an ensemble artifact consisting of the governance structures and processes for a smart city initiative. Their empirical observations highlight challenges of coordination, communication, and innovation in this smart city and report on how we implemented and adjusted the governance regime accordingly. The results of this case study are a first step towards general recommendations for the design and implementation of smart city governance regimes in medium-sized cities.

The final paper, "Understanding the Role of Social, Technology, and Physical Infrastructures in Smart Communities: The Case of Rural Areas in the US" by Guangji Yuan, J. Ramon Gil-Garcia, Megan Sutherland-Mitzner, Mila Gasco, and Theresa Pardo, fills a gap in what is known about smartness in rural communities by analyzing how the physical, technological, and social infrastructures in rural areas are different from those in urban settings, but still generate unique opportunities for building smart communities. The main findings indicate that the unique conditions of rural communities create atypical strengths for becoming smarter.

These five papers all contribute to the goal of the minitrack by helping to build on our understanding of the foundations of smart cities and smart communities as a study area and as a practice priority. Through these efforts to better understand the challenges of becoming smarter the papers contribute to analytical and practical developments and trends. The papers taken together deepen our understanding of the impact of the orchestrated interplay of smart governance practices, smart public administration, smart communities, and smart resources and talent leverage in urban, rural, and regional spaces facilitated by novel uses of information and communication technologies as well as other technologies.