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Editorial: Smart Cities and Regions

Chris McPhee, Editor-in-Chief

Taina Tukiainen, Seppo Leminen, and Mika Westerlund, Guest Editors

From the Editor-in-Chief

Welcome to the October 2015 issue of the *Technology Innovation Management Review*. The editorial theme of this issue is **Smart Cities and Regions**, and it is my pleasure to welcome our three guest editors: **Taina Tukiainen**, Senior Researcher at Aalto University in Espoo, Finland, **Seppo Leminen**, Principal Lecturer at the Laurea University of Applied Sciences and Adjunct Professor in the School of Business at Aalto University in Finland, and **Mika Westerlund**, Associate Professor at Carleton University's Sprott School of Business in Ottawa, Canada.

In November, we celebrate our 100th issue with a look back at our first 100 issues and a look ahead to new frontiers and some of the key questions we seek to answer in our next 100 issues.

In December, we revisit the theme of Living Labs with guest editors **Seppo Leminen**, **Dimitri Schuurman**, **Mika Westerlund**, and **Eelko Huizingh**.

We hope you enjoy this issue of the TIM Review and will share your comments online. We welcome your submissions of articles on technology entrepreneurship, innovation management, and other topics relevant to launching and growing technology companies and solving practical problems in emerging domains. Please contact us (timreview.ca/contact) with potential article topics and submissions.

Chris McPhee
Editor-in-Chief

From the Guest Editors

We are pleased to introduce this issue of the TIM Review on the theme of **Smart Cities and Regions**. In this issue, we discuss how to make our regions and cities "smarter". In accordance with Renata Dameri (2013), we define a smart city (or region) as "a well-defined geographical area, in which high technologies such as ICT, logistic, energy production, and so on, cooperate to create benefits for citizens in terms of well-being, inclusion and participation, environmental quality, intelligent development; it is governed by a well-defined pool of subjects, able to state the rules and policy for the city government and development."

In Europe, three out of every four people live in cities today, and by 2050, it will be four out of every five, putting ever more pressure on the well-being of citizens and the environment (EEA, 2012; UN, 2010). The ongoing global trend toward urbanization has led increasing numbers of practitioners and researchers to look to the development of smart cities and regions as a way to overcome socio-economic challenges and improve quality of life through innovation. Indeed, Kjell Anders Nordström and Per Schlingmann (2015) identify cities – not nations – as the new powerhouses of innovation.

Carlos Moedas (2015), European Commissioner for Research, Science and Innovation, argues that part of the solution is user-driven innovation in cities, facilitated by open innovation ecosystems. Se Hyeong Kim (2013) points out that there are many definitions of open innovation ecosystem, and inspired by Kim's study, we define an open innovation ecosystem as: communities of providers, enablers, utilizers, users, and other stakeholders that practice open innovation within networks of cities and regions. With a strong local presence both digitally and physically, these ecosystems self-sustain based on new product or service innovations as well as social innovations. However, these local effects can be considered a bit more broadly. Extending this concept over a wider geographical area, a regional innovation ecosystem can be understood as "a set of interacting private and public interests, formal institutions and other organizations that function according to organiz-

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ational and institutional arrangements and relationships conducive to the generation, use and dissemination of knowledge (Doloreux & Parto, 2004). Thus, when considering how to increase "smartness", we consider the city or region to be the most appropriate scale of both study and action, allowing for some degree of local flexibility in terms of defining where a city ends and a region begins, and how far the reach of its institutions extends.

What we know about innovation suggests a set of benefits for utilizing specialization, innovation, ecosystems, platforms, living labs, learning, and new capability development for cities and regions of the future. Such research proposes to strengthen the innovation capacity of organizations, make innovation processes more effective, cut innovation costs by sharing resources, reduce market-based risk, and enhance sustainable solution development. In particular, organizations are opening their innovation activities. Opening innovation deserves more research attention in the context of smart cities, particularly to understand roles of innovators, policymakers, businesses, and users to accelerate the pace of innovation in cities and regions.

This issue of the TIM Review provides six theoretically and practically oriented articles for researchers, managers, and innovation developers, among others. The selected articles address "smart city" and "smart region" activities incorporating regional innovation ecosystems taking place today in Europe and introduce a variety of perspectives, frameworks, and categorizations of the phenomenon.

As a case example, we use Finland and the City of Espoo in the Helsinki region. In particular, the articles put forward six different perspectives on innovations in smart cities: smart specialization; regional innovation ecosystems; cities as collaborative innovation platforms; wicked problems and well-being; urban capabilities; and learning-driven development. We encourage readers to further consider these concepts as globally beneficial – to make our cities smarter and to connect citizens, businesses, the public and private sectors, and academia.

In the first article, **Markku Markkula**, President of the European Union Committee of the Regions (CoR), and **Hank Kune**, Director of Educare BV, ask what can make a "smart region" smarter. Using the Helsinki Region as a frontrunning example, they argue that the answer lies in i) the application of the European Union's research and innovation strategies for smart specializa-

tion (RIS3); ii) ecosystem orchestration; and iii) the active role that universities can play in enhancing regional innovation and the "smartness" of the region.

In the second article, we discuss the role of a city as an orchestrator for innovation. They take a business ecosystem, open innovation, and living lab view, and argue that cities should establish active dialogue between their citizens and private and public sector actors to co-create, develop, test, and offer service innovations that utilize diverse sets of platforms. While acknowledging that cities are platforms for simultaneous and divergent innovation initiatives, we identify four principal types of collaborative innovation.

In the third article, **Kaisa Oksanen**, Senior Specialist at the Prime Minister's Office, Finland, and **Antti Hautamäki**, Professor Emeritus at the University of Jyväskylä, Finland, elaborate the sustainable innovation concept, examining innovation ecosystems and their relevance in solving wicked problems. They argue that such problems require a special ecosystem where innovations emerge when different actors collaborate and co-create. World-class innovation ecosystems and hubs are built on deep cooperation among local, regional, national, and global actors. Ultimately, the success of sustainable innovation will positively impact the well-being of people and vice versa: sustainable well-being is an important source of innovation and growth.

In the fourth article, **Timo Hämäläinen**, Fellow in the Strategy Unit of Sitra, the Finnish Innovation Fund, elaborates the governance solutions to wicked problems from the perspective of cities and sustainable well-being. He argues that wicked problems stem from the gap between the complexity of the policy problem and the governance. This gap may partly be solved by active participation, interaction, and co-operation of different stakeholders. In addition, coordination by mutual adjustment and clear systemic direction, decentralization, diversity, and experimentation, and effective measures to overcome system rigidities and development bottlenecks are essential for the success. This article builds on the world-class knowledge of the Finnish welfare state, research, and well-being, and proposes that to be used as a starting point for solving the world's wicked policy problems.

The fifth article by **Renita Niemi**, **Eelis Rytönen**, **Robert Eriksson**, and **Suvi Nenonen** explore spatial transformation using the framework of five urban capabilities – connect, change, communicate, collaborate, and control – which were initially introduced by John

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Worthington. Using a case study that examines smart specialization in the Helsinki Region, particularly the three districts of Espoo, including the Aalto University main campus, the business district of Keilaniemi; and the cultural, living, leisure, and retail district of Tapiola. They argue that lessons learned in a minor urban-area campus can be scaled to a large urban area, and they demonstrate that users of spaces have a need and will to collaborate, co-create, and impact their environments. With insights for decision makers and planners controlling the uses of space for grassroots initiatives, the article emphasizes the role of active citizen engagement and contribution and illustrates how these capabilities of user-orientated processes are important in today's smart cities.

In the sixth and final article, **Mervi Rajahonka, Toni Pienonen, Riikka Kuusisto, and Jari Handelberg**, discuss the importance of innovation orchestrators in facilitating innovation ecosystems. Through the sharing of their experiences with the INNOFOKUS project and the Change2020 programme, they emphasize the need for a process with continuous learning and participation that will create synergies between different development programs in a city or region and promote smart specialization. In addition, they identify collective learning, coordination, experimentation and agility as essential elements. An entrepreneurial mindset and new agile co-creation methods need to be applied in regional and city developments.

We hope that the diverse perspectives offered in these articles will help you better understand the phenomena of the smart city and will encourage you to help develop the concepts further.

Taina Tukiainen, Seppo Leminen, and Mika Westerlund
Guest editors

Acknowledgements and Further Reading

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About the Editors

Chris McPhee is Editor-in-Chief of the *Technology Innovation Management Review*. He holds an MASc degree in Technology Innovation Management from Carleton University in Ottawa, Canada, and BScH and MSc degrees in Biology from Queen's University in Kingston, Canada. Chris has over 15 years of management, design, and content-development experience in Canada and Scotland, primarily in the science, health, and education sectors. As an advisor and editor, he helps entrepreneurs, executives, and researchers develop and express their ideas.

Taina Tukiainen is a Senior Researcher at Aalto University in Espoo, Finland, and she is a Cabinet Member of the President of the European Union Committee of the Regions (CoR). She has worked for over 20 years within industry and universities and for over 10 years at Nokia Corporation as a senior manager, and she has worked on various projects with international university and industry collaboration. She was, until 2014, Director of Digibusiness Finland. Her research interest is strategic research including innovation, technology management, and entrepreneurship. Taina's doctoral dissertation was *The Unexpected Benefits of Internal Corporate Ventures: An Empirical Examination of the Consequences of Investment in Corporate Ventures* (2004), and the topic of her latest book was *The Finnish Startups in Globally Evolving Ecosystems: Value for Finland* (2014). She has recently published papers in *Organization Science* and *MIT Sloan Management Review*.

Seppo Leminen holds positions as Principal Lecturer at the Laurea University of Applied Sciences and Adjunct Professor in the School of Business at Aalto University in Finland. He holds a doctoral degree in Marketing from the Hanken School of Economics and a licentiate degree in Information Technology from the Helsinki University of Technology, now the School of Electrical Engineering at Aalto University. His research and consulting interests include living labs, open innovation, value co-creation and capture with users, relationships, services and business models in marketing, particularly in Internet of Things (IoT), as well as management models in high-tech and service-intensive industries. Results from his research have been reported in *Industrial Marketing Management*, the *Journal of Technology and Engineering and Management*, *Management Decision*, the *International Journal of Technology Management*, the *International Journal of Technology Marketing*, the *International Journal of Product Development*, and the *Technology Innovation Management Review*, among many others.

Mika Westerlund, DSc (Econ), is an Associate Professor at Carleton University in Ottawa, Canada. He previously held positions as a Postdoctoral Scholar in the Haas School of Business at the University of California Berkeley and in the School of Economics at Aalto University in Helsinki, Finland. Mika earned his doctoral degree in Marketing from the Helsinki School of Economics in Finland. His current research interests include open and user innovation, the Internet of Things, business strategy, and management models in high-tech and service-intensive industries.

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