

# **Smart Innovation, Systems and Technologies**

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Francesco Calabrò · Lucia Della Spina  
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# New Metropolitan Perspectives

Local Knowledge and Innovation Dynamics Towards  
Territory Attractiveness Through the Implementation  
of Horizon/E2020/Agenda2030 – Volume 2

 Springer

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# Preface

This volume contains the proceedings for the third International “*NEW METROPOLITAN PERSPECTIVES. Local Knowledge and Innovation dynamics towards territory attractiveness through the implementation of Horizon/Europe2020/Agenda2030*”, which took place on 22–25 May 2018 in Reggio Calabria, Italy.

The Symposium is jointly promoted by LaborEst (Evaluation and Economic Appraisal Lab) and CLUDs (Commercial Local Urban Districts Lab), Laboratories of the PAU Department, *Mediterranea* University of Reggio Calabria, Italy, in partnership with a qualified international network of academic institution and scientific societies.

The third edition of “*NEW METROPOLITAN PERSPECTIVES*” aims to deepen those factors which contribute to increase cities and territories attractiveness, both with theoretical studies and tangible applications.

It represents the conclusive event of the Multidisciplinary Approach to Plan Smart Specialisation Strategies for Local Economic Development (MAPS-LED) Research Project funded by the European Union’s Horizon 2020 Research and Innovation Programme under the Marie Skłodowska Curie Actions—RISE 2014.

This edition of the Symposium is going to give a specific attention to those linkages between innovation dynamics and territories attractiveness, as will be better explained by our colleague Carmelina Bevilacqua.

In the last decades, metropolitan cities have been studied from different perspectives, according to diverse academic and scientific points of view, but under the common attitude towards their spatial dynamics.

Recent economic and political developments press the scientific community addressing two issues of current relevance:

- The spatial implications of the economic and demographic decline of large areas in Europe and Western Countries;
- The impact of ICT dissemination on urban/rural environment and, broadly, on the idea of society.

For decades, technical tools, especially in the field of urban planning, have been developed to allow urban and territorial transformations in a context characterized by expansive dynamics. Looking at the productive system and, within it, the job's organization as one of the discriminating elements of territorial transformation, the following question arises: what is the destiny of the industrial and post-industrial city, known as a place of concentration of workforce and market?

These considerations focus the attention of the academic community on the dimension of distant future. The spread of new communication technologies and new production systems is increasingly pushing everywhere towards the progressive "liquefaction" of the social structures, organizational models and systems that have been known so far as Bauman's intuition. Such a long horizon necessarily requires the renewal of a visionary, utopian vision that imagines society of the future through a dreamlike dimension of avant-garde. It becomes crucial to debate the running direction; the profound changes are going on in contemporary society and its impact on urban/rural environment of the future.

We might suggest the anthropic desertification is a phenomenon shared among the lagging Regions: increasingly, many people move from their hometowns to reach better places, such as the metropolitan areas, to improve their conditions of life. Such process inevitably contributes to the general poorness of those Regions, already weakened, by increasing such declining status even more.

One of the most important topics to be considered, which more than others characterizes all metropolitan regions, is surely their capacity to attract people, and consequently capitals. Indeed, territorial policies aim mostly to catch investments in order to enhance job creation and to positively influence socio-economic indicators. Nevertheless, attractiveness, as explained, is also about people: that is the indicator which can really synthesize a concept which includes both competitiveness and receiving capability.

If we go deeper, competitiveness means: research and innovation, public administration efficiency, skilled workforce, facilities, accessibility, credit access, international perspectives, energy cost consumption. As far as the receiving capability, it could be explained as carefulness for urban quality, housing policies, mobility, welfare, health care, security and, of course, job opportunities.

Particularly, the papers accepted, about 150, allowed us to develop six macro-topics, about "*Local Knowledge and Innovation dynamics towards territory attractiveness*" as follows:

- 1 Innovation dynamics, smart cities, ICT;
- 2 Urban regeneration, community-led practices and PPP;
- 3 Local development, inland and urban areas in territorial cohesion strategies;
- 4 Mobility, accessibility, infrastructures;
- 5 Heritage, landscape and identity; and
- 6 Risk management, environment, energy.

We are pleased that the International Symposium NMP, thanks to its interdisciplinary character, stimulates growing interests and approvals from the scientific community, at national and international levels.

We would like to take this opportunity to thank all who have contributed to the success of the third International Symposium “NEW METROPOLITAN PERSPECTIVES. *Local Knowledge and Innovation dynamics towards territory attractiveness through the implementation of Horizon/Europe2020*”: authors, keynote speakers, session chairs, referees, the scientific committee and the scientific partners, the “Associazione ASTRI” for technical and organizational support activities, participants, student volunteers and those ones that with different roles have contributed to the dissemination and the success of the Symposium; particularly, the academic representatives of the University of Reggio Calabria: the Rector Prof. Pasquale Catanoso, the Vice Rector Prof. Marcello Zimbone, the responsible of internationalization Prof. Francesco Morabito, the Chief of PAU Department Prof. Francesca Martorano.

Thank you very much for your support.

Last but not least, we would like to thank Springer for the support in the conference proceedings publication.

Francesco Calabrò  
Lucia Della Spina

# Local Knowledge and Innovation Dynamics: The MAPS-LED Perspective

The third edition of the International Symposium “New Metropolitan Perspectives” aims at facing the challenges of Local Knowledge and Innovation dynamics towards territory attractiveness through the implementation of the Horizon/EU2020 Agenda. The Symposium is jointly promoted by the LaborEst and the CLUDsLab Laboratories of the PAU Department, Università Mediterranea of Reggio Calabria (IT), in partnership with a qualified international network of prestigious academic institutions and scientific associations. It represents the conclusive event of the Multidisciplinary Approach to Plan Smart Specialisation Strategies for Local Economic Development (MAPS-LED) Research Project funded by the European Union’s Horizon 2020 Research and Innovation Programme, under the Marie Skłodowska Curie Actions—RISE 2014. The main aim of RISE Action is to favour the mobility of experienced and early-stage researchers between Europe, associated and third countries. The project empowers the strong international research network built up with the CLUDs Project (7FP) through the exchange of researchers, ideas and practices between EU and USA. To date, about 40 experienced and early-stage researchers benefited by the project mobility towards USA, at the Northeastern University of Boston and the San Diego State University. The researchers, coming from the Higher Education Institutions (HEIs) belonging to the MAPS-LED network, had the opportunity to increase their research, training and networking skills thanks to the high exposure to the international scientific community. The majority of the early-stage researchers belong to the International Doctorate Program in Urban Regeneration and Economic Development (URED), active since 2012 at the Università Mediterranea of Reggio Calabria (Project Coordinator). The Program is funded by the Calabria Region European Social Fund (ESF), making effective the operative linkage between Horizon 2020 (Research) and Cohesion Policy (ESIF).

The MAPS-LED Symposium represents an important event for disseminating research findings and for stimulating a fruitful debate among scientific and policy-makers’ community.

The core of the research activities has earmarked for exploring how Smart Specialisation Strategies (S3) can be implemented by incorporating the place-based approach towards regenerating local economies.



The S3 has been designed in order to capture knowledge and innovation dynamics strictly connected with characteristics of context. According to the Maps-led perspective, the key concepts of S3 lie in the mutual correlation among entrepreneur, innovation and economic development. The entrepreneur is pushed by a local entrepreneurial culture activated by enhancing local knowledge. This process is called “entrepreneurial discovery” towards knowledge convergence and informational spillover for clustering phase, as precondition of competitive advantages.

Among the theoretical standpoints that explained how cluster policy and S3 share many similarities in their rationale, the research activities led to focus on the place-based approach as nexus in spurring the innovation process towards emphasizing the role of the city.

Thanks to the exchange scheme of the RISE programme, the MAPS-LED project has delivered a methodology to spatialize economic clusters in Boston and San Diego, as expression of how innovation is experimented in the modern economy and how the “place” works.

The “spatialization cluster methodology” has brought about a proxy for innovation concentration, by turning clusters in physical configurations at city level. This interpretation comes from the rationale grounded into cluster definition, validated by Porter with the model in which innovation, specialization and job creation are connected among those productive sectors related to shaping a cluster. The preliminary research findings pushed towards the explanation of how cluster performance factors can be combined with the context characteristics, by highlighting the spatial implications of knowledge dynamics. The case studies have been grouped into two frameworks of cluster rationale—Traded, to enhance competitive advantages, and Local, to reinforce comparative advantages. In synthesis, the first framework considers innovation as the main drive to define the relativeness of productive sectors to shape traded cluster, and the second ones bring into specialization the main impulse in forming local cluster.

The spatially oriented methodology adopted for Traded clusters in the Boston area analysed the occurrence of “innovation spaces” in the places characterized by the presence of cluster, in order to identify specific urban areas (target areas) in which investigating the interaction of cluster (demand of innovation) with the urban fabric, its sociability and sustainability. The findings from “target areas” analysis allowed, on one hand, at identifying the link between city and S3 by introducing the innovation-driven urban policy as an important phase of the Entrepreneurial Discovery Process (EDP). On the other hand, gentrification and inequality issues resulted as the main negative effects in both cities, Boston and Cambridge, due to the evident increase, more than proportional, of the rent and property values.

The link between city and S3 is mainly stemmed by the emerging business environment or the atmosphere for innovation that acquires an important role in what Foray calls *structuring entrepreneurial knowledge*. Inside the “target areas”, anchors institutions, public and private research centres, the entrepreneurs’ community and citizens concentrate their efforts supported by public policies (economic development and urban planning). The occurrence of such dynamic forces, able to

trigger socio-economic and physical transformation, has brought to investigate how innovation policy can be harnessed in driving growth in specific localities. This aspect called for a better understanding and the exploration of innovation as a source for socio-economic and urban transformation, highlighting urban regeneration initiatives driven by the increasing demand for innovation<sup>1</sup>.

The analysis of surrounding conditions has been considered important to give a practical explanation of how the EDP could be structured as policy action. The role of the city has emerged in spurring the innovation process and, in particular, how it can be the start point of the EDP, in terms of public policy action. The possible result of these research activities lies in finding a new concept of *urban dimension* within S3. The urban dimension inside the S3 implementation could be part of the EDP as engine of the quadruple helix model for knowledge dynamics. It is possible to group under the innovation-oriented urban policy's concept the increasing phenomena of innovation districts (in a broadly sense) to refine a different perspective of the role of the city in the creation of an innovation ecosystem. Another aspect emerged from the research activities in Boston is connected to how innovation has become a source of urban form and its transformation, pushing urban regeneration initiatives driven by the demand for innovation.

The spatially oriented methodology adopted for Traded clusters in the Boston area has been implemented also for the spatialization of Local clusters in San Diego. Here, the focus shifted from mapping innovation concentration towards mapping specialization in the innovative milieu perspective. Clusters and knowledge networking reveal how territorial milieu can influence the knowledge dynamics and how knowledge can be shared along the territorial milieu. The aim was to find a connection between urban and inland areas through the territorial milieu as an explanation of innovative milieu. Local Clusters have been examined through Dynamic Analysis, Innovation Ecosystems and their relationship with Community Plans and Zoning providing interesting insights into the activation of social innovation thanks to the interaction of three driving elements: knowledge, innovation and place. The different socio-economic and spatial configuration allowed to identify different development dynamics for local innovation ecosystems. In San Diego, harnessing innovation ecosystem is not limited only to local actors, even regulatory agencies and municipal or regional governments that create a dynamic, innovation-driven economy can be involved in the orchestration process.

In both cases (Boston and San Diego), innovation-oriented public policies pivot around the entrepreneurial spirit, in line with the desired entrepreneurial knowledge convergence of the S3 approach. The MAPS-LED project proposes the Entrepreneurial Discovery Process as a trigger for the coordination of the efforts at local level—public administrations, research institutions, entrepreneurs,

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<sup>1</sup>The MAPS-LED has been appointed as “success story” in European Commission: New thinking to drive regional economic development. EU Cordis Research and Innovation success stories available at: [http://ec.europa.eu/research/infocentre/article\\_en.cfm?id=research/headlines/news/article\\_17\\_11\\_15-2\\_en.html?infocentre&item=Infocentre&artid=46436](http://ec.europa.eu/research/infocentre/article_en.cfm?id=research/headlines/news/article_17_11_15-2_en.html?infocentre&item=Infocentre&artid=46436).

communities—in boosting the local knowledge convergence and generating the expected change.

The MAPS-LED project emphasized how the linkage between planning and innovation policy empowers EDP through bottom-up approaches. In other words, local communities and organizations are in the best position to know what can drive a city's regeneration and deliver economic change reinforcing the urban dimension of S3. The research activities highlighted how EDP could be the mean to design tailor-made policy acting on the fruitful relationship among knowledge, innovation and place. This process should be managed at local level and embedded in the urban development agenda due to its ability to activate urban regeneration mechanisms and expand innovation in distressed areas through public–private partnership and innovative financial instruments. In this sense, the MAPS-LED approach works as cross-cutting element in the understanding of knowledge dynamics, which are complex and difficult to trigger in specific places. The interaction of knowledge, innovation and place—and the related potential **output** indicators provided by the MAPS-LED project—attributes the local asset to the entrepreneurial discovery process activated by urban policy aiming at regenerating urban areas through innovation-led processes. In synthesis, the analysis of the local context shed the light on EDP as evidence-based and horizontal policy for S3 by considering two drivers: the urban regeneration mechanism joint with Knowledge-Based Urban Development to guide the identification of output indicators of EDP; the cluster life cycle analysis to guide the result indicators of the EDP.

Furthermore, the cluster spatialization methodology could help in finding out the regional areas of innovation towards focusing on public and private financial resources. The methodology developed could help in the understanding “where” entrepreneurial knowledge and forces are active and concentrated, lighting up the potential for the discovery phase. This is a cross-sectorial approach because the identification of potentials with respect to the local context allows to discover concentration of knowledge and feed innovation at local level. The identification of local potential areas of innovation, coherently with the principle of Smart Specialisation, can favour the discovery of new domains through an evidence-based territorial perspective rather than a mere analysis of regional economies. Further insights from these findings reveal the potential transformation of these urban areas of innovation in Economic Special Zones.

The results coming from the MAPS-LED project research activities stimulated the scientific debate around the key elements able to trigger the desired change through S3 as well as the understanding of its (current and potential) limits. The participation of international experts involved in the S3 design and the RIS3 implementation, as well as the academic contributions coming from different disciplines, highlighted the potentials of the multidisciplinary approach proposed by the project, allowing to boost up knowledge convergence in an a sectorial rationale. The Symposium represents the opportunity to stimulate the development of innovation-oriented models for the exploitation and valorization of local assets involving different disciplines and in a multilevel governance perspective.

The contribution offered through the Symposium, by either enriching the academic debate or providing evidence-based solutions for the implementation of economic development strategies, is attributed by wide scope and marked cross-cutting dimension. The multidisciplinary nature of the MAPS-LED project is reflected by the structure of the Symposium itself. Each session presents topics and arguments which are, to some extent, ingrained within overall framework of the MAPS-LED project, while they are expected to open up windows of opportunity for further studies and research. Consistently, the Symposium focuses on analysing, at different scales and under numerous perspectives, the strategies, objectives and impacts of local economic development and innovation processes, to achieve a smart sustainable and inclusive growth. In a sentence, the Symposium, and the contributions to its sessions, manifests the effort to re-proposing the multidisciplinary approach implemented within the MAPS-LED research project in a conference-based-dimension.

While the Symposium encompasses a number of sessions dealing with specific topics, it is reasonable framing them within the streamlined “smart, inclusive and sustainable” growth paradigm enacted by the EU 2020 strategy (EU, 2010). By following this logic, the Symposium kicks off by trying to overcome current limits and gaps in the implementation of plans and models (session TS01, TS13 and TS16), while it further develops by bringing to light the importance of the place-based approach to deliver successful urban regeneration processes (session TS02 and TS23). In this regard, the prominent role played by territorial peculiarities in affecting decision-making processes is taken into high consideration (session TS04). Drawing on the belief that the “place” matters, the Symposium devoted different sessions to the study of the territorial-specific developmental mechanisms aiming at identifying logical-operational tools that can interpret urban phenomena (i.e. urban safety with the session TS11), but also evolutionary and community involvement processes in coastal areas (session TS19). The dichotomy urban–rural is treated in more than one session, as it is further scrutinized under the lens of geospatial analysis and modelling tools in the way of identifying how landscapes transition from rural-to-urban (session TS25) as well as under the lens of inclusive knowledge and innovation networks (session TS08). Still on the territorial dimension, the sustainable-led and ecological approach is analysed (thanks to the contribution in session TS14, TS15 and TS17) as well as the cultural heritage territorial network valorization perspective (session TS18), as a mean to favour the discovery of territorial-specific developmental opportunities. The discovery of opportunities in general, and hidden economic potentials in particular, is also the central point of discussion in the session on urban and regional development (TS20). This session refers to innovation spaces as catalyst for the disclosure of latent economic strengths of territories, at different geographic scales. The importance of innovation spaces seems especially relevant in the context of the knowledge economy, where and when the re-combination of “pieces of knowledge” can drive towards unveiling novel products and processes novel products and processes. The challenges and potentials posed by innovative activities are also investigated under an economic perspective by catching up with the complexity of knowledge

dynamics. Following their cross-cutting rationale, innovation and knowledge are also the focal point of the session TS05 focused on ICT and heritage for a sustainable development as well as for the territorial innovative networks for public services (session TS26).

This synthetic description of the sessions gives a clear idea of the complexity of the themes treated as well as their alignment with respect to the MAPS-LED project. Moreover, the participation to the Symposium of international experts as well as academics from different disciplines provides interesting insights for the RIS3 evaluation and monitoring processes for the post-2020 programming period. The multidisciplinary approach to plan Smart Specialisation Strategies proposed with the MAPS-LED project emerged as crucial to properly pursue the local economic development in the S3 perspective. Hence, the MAPS-LED project appears at forefront into this research domain.

Carmelina Bevilacqua

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