Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 223 (2016) 915 – 922

Procedia Social and Behavioral Sciences

2nd International Symposium "NEW METROPOLITAN PERSPECTIVES" - Strategic planning, spatial planning, economic programs and decision support tools, through the implementation of Horizon/Europe2020. ISTH2020, Reggio Calabria (Italy), 18-20 May 2016

Living Lab and Cities asSmart Specialisation StrategiesEngine

Carmelina Bevilacqua[a,]*, Pasquale Pizzimenti[a],

[a]*CLUDsLAB - PAU Department Università degli Studi Mediterranea, Salita Melissari, Reggio Calabria 89124 Italy*

Abstract

The paper reflects the progressive attention given to Smart Specialization Strategies (S3) in boosting the implementation of Europe 2020 strategy at regional and local level. The aim is to focus on the potentials that the so-called Living Labs can reveal by connecting the urban regeneration with the S3, considering the current European programming period. The Living Lab, based on Open Innovation Model, is conceived as "smart interface" among enterprises, researchers, citizens and public authorities in order to respond the increasing service demand, to stimulate creativity for new ideas, markets with the use of KETs. Itcombines spatial dimension with innovation.

Peer-review under responsibility of the organizing committee of ISTH2020

*Keywords:*Urban Regeneration; Living Lab; Spatial Dimension; Smart Specialisation Strategies; Territorial Capital; Territorial Milieu.

1. Introduction

The paper reflects the progressive attention given to Smart Specialization Strategies (S3) in boosting the implementation of Europe 2020 strategy, at regional and local level(Foray, 2015). The objective is to highlight the role that Living Lab can play as smart platform able to activate the three dimension of innovation - business, public administration, territories – within governance processes. We argue that a strong connection of local territorial capital with innovation can better support the new policy areas (S3) for knowledge-based economy, since governance processes act differently, given the diversification of local territorial capital (Camagni & Capello, 2013).

The main insight comes from the first results of the MAPS-LED project "Multidisciplinary approach to Plan Smart Specialisation Strategies for Local Development" (Maps-Led, 2015) finalised at identifying the

* Carmelina Bevilacqua. Tel.: +39-335-8085836.
E-mail address: cbevilac@unirc.it

Peer-review under responsibility of the organizing committee of ISTH2020
doi:10.1016/j.sbspro.2016.05.315

implementation of the S3 in terms of spatial, social and environmental factors. The aim is to guide the interventions of regional policy within the Operative Programs of ESIF 2014-2020 along with the RIS3 (Research Innovation Smart SpecialisationStrategies) regional plans. The scope of the project is to examine how S3 can be implemented by incorporating a place-based dimension.More in particular the aim of the project is to provide a response to the demand for "a comprehensive innovation strategy to enhance Europe's capacity to deliver smart, sustainable and inclusive growth and highlights the concept of smart specialisation as a way to achieve these goals" (S3platform.jrc.ec.europa.eu, 2016).An evidence-based methodology, by drawing insights from existing successful US Clusters, has been used for the evaluation matrix for recognizing and assessing emerging and potential of S3. The general track of the project is to implement smart specialisation as a key element for place-based regeneration policies for local economic areas. The case studies' analysis of 10 US Clusters has pointed out how spatial factors – localization of universities, real estate conditions, housing, public transportation, services' supply – can affect the performance level of Clusters, identified by Porter(Delgado et al. 2012). Starting from these first findings in US context, the paper explores the Living Lab as a tool finalized to contextualize the integrated approach of RIS3. The integrated approach includes the place-based dimensionfor theenhancement of territorial capital. Considering the social structure in which resources are activated and the diffusion of innovation, it is relevant the understanding of how Living Lab can generate value added,in terms of interpretation of the different and peculiar factors characterising territorial clusters and the social and relational structures in specific contexts. The enhancement of local territorial capital is investigated by combining "identity" and "innovation" concepts. The combination of these two concepts allows designing the local development initiativesby incorporating the Milieu Innovateur concept towards a more inclusive concept of "local", able to capture different level of innovation flows' intensity explored as Territorial Milieu.The Living Lab as "smart" representation of the territorial capital can find its conceptual configuration inthe interconnection of three drivers: 1. Cluster Policy and cluster based analysis, to interpret and evaluate the performance factors influencing the production and the innovation usage.2. Territorial milieu to identify local innovation flows based on urban-rural connectors. 3. Urban-Territorial Regeneration to improve services supply in a multi-scale dimension (local vs. global).The methodological approach uses the networking analysis – from both physical and social sides– in order to provide a configuration of governance processes related to a specific context with a specialisation domains to be activated, according to regional RIS3. We propose a preliminary example for two southern Italian regions (Calabria and Sicily)in which the three drivers above mentioned can trigger a local discovery process directly connected with cities,acting on the three dimension of innovation – public administration, enterprises, territories – in order to build upsynergic networks, ICT, R&D and territorial capital.

2. Cities as engine of Smart Specialisation Strategies

2.1. Identity and Innovation: an interpretation of Local Development towards Territorial Milieu

Identity and innovation lead the process of enhancing the territorial capital, expression of the socioeconomic dynamics, within territorial and urban systems (Zonneveld& Waterhout, 2005) in the globalization era. The Local Development paradigm, through the logic of territorial milieu, moves towards an innovative way in building integrated strategies, both competitive and expression of local identity that characterize the territorial systems (Maillat, 1995).It is wider recognised that each territory owns a set of assets and potential values that local actors should acknowledge and capture in order to exploit them as sources of local development. The main feature of the milieu is the capability to relate physical resources with local actors, by covering three-dimensional aspects: the individual (value attitudes, life-style, actionsand perceptions); the level of the district/neighbourhood (locality); and the level of the network (CLUDs, 2013).Connected to this general meaning, some specifications arise from the new economy or new economic geography implications, especially with respect to the GREMI (Groupe de Recherche Européen sur les Milieux Innovateurs) model. Links between localised production system and milieu innovateur have been analysedto show the way in which the complex interaction of demand, increasing returns, transport costs, as well as learning processes and other relevant elements, yield to performances even spatially differentiated, with areas which become losers or winners in the new competitive environment. Accordingly, the key conceptderiving from the territorial milieu perspective turns out as the following: the role of space in innovative and localised

processes depends on its capacity to promote local initiatives, to create a weave of new formsand to activate a territorial dynamic of innovation (Bramanti, 1998).

The attention toward innovation and its implications in public policies in order to boost economic development is not a relatively new concept. Its strictly connection with research is widely provided by literature on knowledge-based economy (EC, 2000). The European Union has placed this concept at the core of the European Cohesion Policy in 2000s with the Lisbon Strategy introducing strategic measures aiming at the transition from a traditional economy to a knowledge-based economy (David & Foray, 2003). In 2005, the European Commissioner Potočnik, with the aim to reinforce the Lisbon Strategy, appointed the Knowledge for Growth group in order to provide policy advices on some key aspects related to the transitional process above mentioned: the contribution of knowledge to the sustainable growth; The policy-mix necessary to create, spread and use knowledge; The role of actors involved in stimulating a knowledge-based society and; Reinforce the communication among these actors.However, a substantial distance from Lisbon Strategy started emerging with the recent shift from a knowledge-based economy to a knowledge-based society. Further, the need to find the right integration among policies to foster the achievement of EU objectives occurred. Thanks to the Knowledge for Growth group, the Smart Specialisation concept comes up (Foray, 2009). Academics and policy-makers have already faced the analysis of the spatial and regional dimension of the innovation policies (Doloreux&Parto, 2005).The S3 concept takes the attention of public policy (theories) and regional development experts in the attempt to draw the evolution of territorial dimension within the new approach of Europe 2020 strategies (Faludi, 2014). Since the main objective is to spread the innovation as development mainstreaming, the S3 trigger the social and rural innovation within the territorial dimension of Europe 2020 with two new integrated instruments: the Integrated Territorial Investment (ITI) and the Community-Led Local Development (CLLD).The European Commission requested to European Regions to produce a Regional Research and Innovation Strategy for the Smart Specialisation Strategies (RIS3) within the regional development strategy for the Programming Period 2014-2020, in order to satisfy the demand of innovation and stimulate new resources for a sustainable development. RIS3 are supposed to guide the implementation of Regional Operational Programmes in a horizontal perspective. More in particular, the first thematic objective of ROPs is titled "Research and Innovation" with the scope to turn in practice the RIS3 plan. The Living Lab represents one of the actions included in the RIS3 regional plans and consequently in the ROPs Research and Innovation objective.Currently, it is possible to highlight the level of completeness, relevance and consistence of the selected actions by each European region aiming to obtain the economic growth through the S3 (EC, 2013). In the same way, it is possible to recognise the role that Cities, thanks to the horizontal perspective of the Sustainable Urban Development, need to play in a synergic and supportive way in the construction and implementation of regional RIS3 within the European Structural and Investment Funds scheme.

The theoretical basis of the territorial milieu, proposed as integration between local identity and innovation, arises from the GREMI model, which introduced the concept of Milieu Innovateur. The territorial milieu, with integrated urban / territorial management tools, distributes competitive advantages through the network, while avoiding the risk of creating disparities between areas' winners and losers in a competitive territorial system. Urban regeneration, in terms of using the integrated management tools acting on strengthening urban-rural networks, promotes a more equitable geographic distribution of services and a wider spread generated benefits (CLUDs, 2013).

2.2. Living Lab: a synopsis literature

The reinforced connectivity, the social media relevance in daily life and the facilitated access to the technological products market have a strong impact on citizen's behaviours, pushing public administrations toward the adjustment of the offered services. Open Innovation Model is becoming very common in managing both demand and supply of innovation. Open Innovation Model is defined by Henry Chesbrough (2003) as the usage of inward and outward intentional flows of knowledge in order to accelerate inner innovation and expand markets for the external usage of innovation. In the Open Innovation paradigm businesses can and must use ideas/input coming from the inside and the outside and inner and external pathways in order to reach a market if they have the objective of technological progress (Chesbrough, 2005). Based on this approach characterised by the "usage" of innovation, the Living Lab became the implementation of how it is possible to match innovation demand and supply.

Living Labs are defined as "public–private partnerships in which businesses, researchers, authorities, and citizens work together for the creation, validation, and test of new services, business ideas, markets, and technologies in real-life contexts" (Bergvall-Kareborn et al, 2009). The European Network of Living Lab define them as "innovation-oriented open environment for real contexts in which the user-driven innovation is represented by the co-creative process of new services, products, social infrastructures, including simultaneously the social and technological dimension within the businesses-citizens-administrations-academia partnership" (Bergvall-Kareborn & Stahlbrost 2009). Although the common Living Labs' definitions refers to their user-driven nature, related to the technological dimension, Westerlund and Leminem (2011) confer also a territorial dimension to Living Labs. The authors define them as "physical regions … where different stakeholders build up public-private-people partnership (4Ps) of businesses, public agencies, universities, institutions and users which cooperate in order to create, prototype, validate and test new technologies, services, products and systems for the real life." In this perspective, the spatial and planning dimension of S3 occurs thanks to the Living Lab within the urban and territorial regeneration actions, in which "heterogeneous compositions of public and private actors, territorial resources and institutional capabilities stand out" (Rossi &Celata 2015).

The concept of Living Labs can be interpreted and used as an approach to R&D focused on the individual, where innovations are co-created, tested, and evaluated in "open", collaborative and multi-contextual configurations. The approach of Living Labs is not focused exclusively on users or their involvement in the development process, but aims to facilitate interaction among stakeholders, for example, universities and research organizations, SMEs, industry, civil society, professionals of ICT and public partners (Bergvall-Kareborn et al, 2009). The necessity of Public-Private Partnerships (PPP) in the creation and management of Living Labs, is reinforced by Cosgrave et al (2013) who, critically, argue how Living Labs are heavily subsidised by the government or Internationalorganisations and supported by grants from universities and private entities based on specific interests.

3. Urban regeneration as spatial dimension of Living Lab

3.1. Governance and Innovation flows: the logical frame of Living Lab

It is possible to argue, relying on literature and some examples of Living Labs, that the main node, making effective and efficient Living Labs as a smart platform for innovation, concerns the connection between governance processes and the spatial dimension.The processesof Governance havestandardized some tools to be used in public policy context (Salamon, 2002) supposed to define new way to capture and respond to the social, urban and territorial demand of transformations. In the same time, the productive systems, involved into globalization process, findcompetitive impulses into local specializations, according with the local innovation networks. Innovation is contextualized through the principle of competitive differentiation (Foray, 2015).

The local development strategies, within the new governance (Tömmel&Verdun, 2009), are expected to support and trigger "self-propelled" processes. These processes take place through new behavioral procedures (involvement) and greater insightsto build possible development scenarios (strategy), according to the local relational tacit knowledge (Collins, 2010), in which the cultural, historical and social context represents the resource opportunity (territorial capital).The local action is the outcome of territorial and urban policies aimed at the capability to mobilise additional resources for the production of innovation, both from the social learning perspective and the technical identification of resources. This integrated approach defines new ways of thinking in producing new responsive scenarios to the social, economic and territorial demand of transformation.The Living Lab, as smart platform, works on two sources of innovation demand. One comes from the new governance tools at different levels – European, National, and Regional – the other comes from the local demand of urban and territorial transformation (change-led). This kind of demand derives also from the necessity to grasp the dynamics of innovation affecting the way in which building local discovery path of advantages/opportunities or disadvantages/obstacles from the community belonging to the local shareholder/stakeholder groups.Considering the two sides of innovation, one related to policy/tools (Supply) and the other related to behavior/technology (Demand) driving the urban territorial transformations (change-led), the objective of Living Lab platform is to create forms of integration between "governance" and "society/community".

The logical frame of Living Lab platform, following the above reasoning, includes three drivers (or tracks, thereby):1. Cluster policy and Cluster analysis, to comprehend and evaluate the relevance of performance factors to create and empower innovation flows.2. Territorial Milieu, in terms of local supply chain based on urban-rural connection.3. Urban and Territorial regeneration as improvement of the supply of services in a multilayer perspective supporting innovative financial instruments.The three drivers are the methodological frame for the smart platform of Living Labs, expanding its capabilities as a structuring element of governance for the implementation of RIS3 and introducing the function of decision making support both in terms of technical and administrative and of strategic scenarios.

We argue that the Living Lab as smart platform can play an effective role in implementing RIS3 if the territorial catalyst is the metropolitan area, which includes the metropolitan city and the surroundings, composed by inlands areas and urban area. The methodological frame is experimented in two southern Italian regions: Calabria and Sicily, up to a possible configuration at metropolitan area level.The living lab acquires the connotation of territorial catalyst that can integrate development policies, both at theItalian (Development Fund and Cohesion) and theEuropean (European Investment Structural Funds) level, translated into regional and national operational programs, where RIS3 acthorizontally.See Fig. 1.

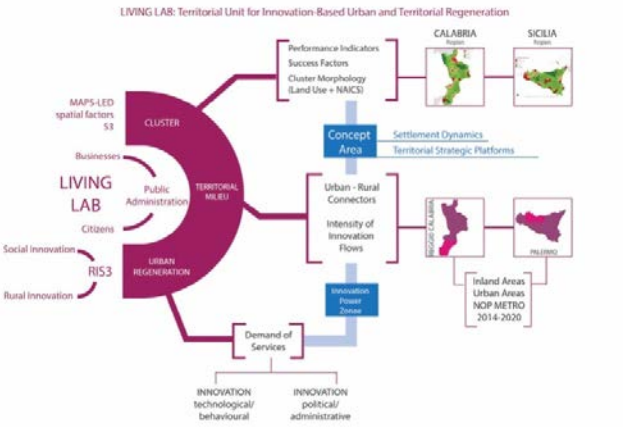

Fig. 1. The Logical Frame of Living Lab

3.2. From Regional to Local level: how Living Lab becomes a smart platform for cities

Following the logical frame of Living Lab, the structure of the three drivers lead to take into account the spatial dimension of innovation, by analysing the innovation flows occurring in a specific network belonging to a territorial system. A first conceptualization of the three drivers has been experimented in two southern Italian regions, Calabria and Sicily, in order to identify the role of two metropolitan areas, Palermo and Reggio Calabria, in the implementation of the policy areas, defined in the respective RIS3, and to provide the core aspects of Living Lab platform.This experimentation exploits the first results of the ongoing research project MAPS-LED concerning a spatial analysis of the performance factors in 10 Clusters in Massachusetts (USA), and specifically in two regions Middlesex and Suffolk counties (Maps-Led, 2015).We have applied the MAPS-LED spatial analysis to the territorial dimension of Italian Partnership Agreement 2014-2020 that identified urban areas, inland areas and metropolitan city. More in particular, we have considered these territorial categories in Calabria and Sicily. By incorporating the spatial dimension in the innovation policy, the Living Lab smart platform, at metropolitan area level, allows to evaluate locally the more suitable use of Innovative Financial Instruments (InFIs). From the Concept Area defined at regional level to Innovative Power Zones at metropolitan area level, the Living Lab can offer the criteria to select projects strategically connected to the objectives of RIS3 (generally coherent with EU2020) and implemented under the umbrella of the InFIs. According with the definition given by theEuropean Commission (2011), “the European Commission’s Communication about EU equity and debt platforms describes InFIs as

"participations in equity (risk capital) funds, guarantees to local banks' lending to ...final beneficiaries, ... or risk-sharing with financial institutions to boost investment in large infrastructure projects. These instruments aim to boost the real economy through increasing the access to finance for enterprises and industries producing goods and services" (Ferreret al, 2012).

We argue that a Living Lab, conceptualized by the logical frame (Fig. 1), can act as smart platform at metropolitan area throughthe combination of the three drivers (see Fig. 3).The first driver "Cluster policy and Cluster Analysis" produces the "concept area" of the two regions as the combination of two spatial interpretation of Cluster analysis: Settlement Dynamics and Strategic Potential Areas, as represented in Fig. 2

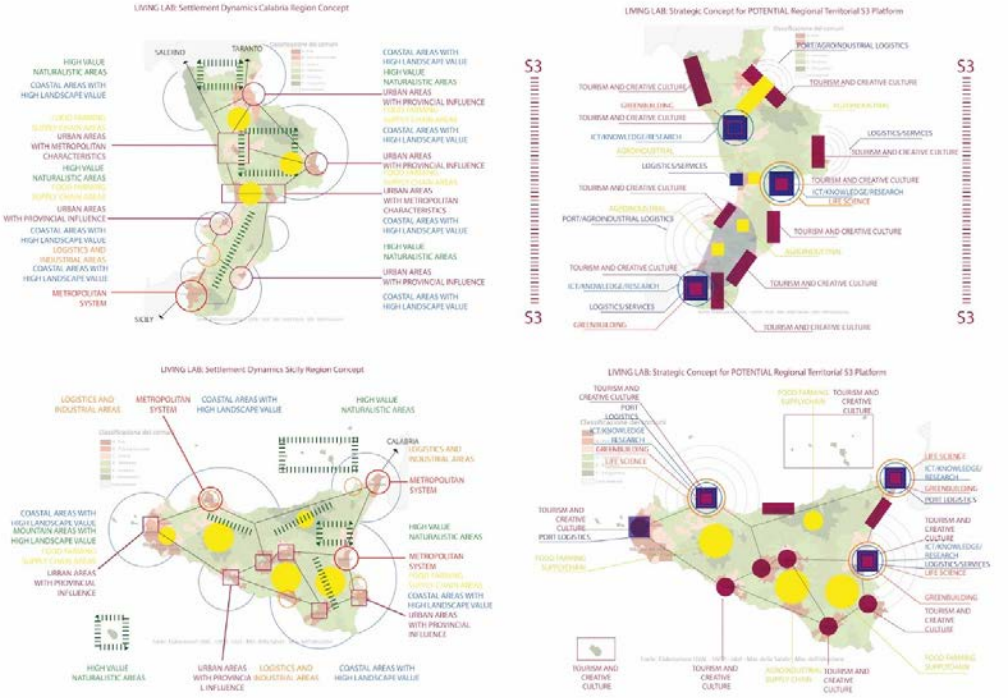

Fig. 2.The Concept area. Settlement Dynamics and Strategic Platforms – Calabria and Sicilyregions

The second driver "Territorial Milieu"identifies, through the concept area defined in the first driver, the local chains, based on urban-rural connections, in the metropolitan areas of Palermo and Reggio Calabria. The local supply chain identification methodology is based on the evaluation ofinnovation flows triggered by the urban-rural connectors and measured through the analysis of knowledge and information flows at metropolitan area level. Such analysis aims to classify the different levels of intensity of the innovation flows that can spatially locate in different areas of influence, in relation to the carrying capacity of the territories/metropolitan areas to capitalize the different intensity and type of innovation. In this context, we intend to borrow the social networking analysis (Scott, 2012) applied to the different organizational logics of action in order to analyse the flows of knowledge and information in organizations. The goal is to identify various power zones classified by type and intensity of the flows oriented to activate and meet the demand of innovation by different users. The living lab, through the classification of the flows of innovation and the types of power zone, activates the demand for innovation according to three dimensions: businesses, public administration and territories, which act synergistically on networks, ICT, R&D and territorial capital.The third driver urban-territorial Regeneration enables forms of co-strategic planning for the implementation of RIS3 in the contexts of the two metropolitan areas of Reggio Calabria and Palermo. At the level of public administrationit enhances services supply, according with the different kind of power zones localised in the two metropolitan areas. In particular, by combining social innovation with the rural innovation, the local demand for

innovation is met according to the forms of Pre-commercial public procurement and procurement of innovation, more suitable to specific needs.At the level of firms,the use of Innovative Financial Instruments is strictly connected with the different kind of projects relevant by specific context. The power zones drive the different "mix of financing instruments, including grants, loans or revolving funds in order to more efficiently use EU resources" (Ferrer et al, 2012). In particular, according to the two RIS3 regional plans, the regeneration track allows to simplify the ex-ante evaluation of InFIs. At the level of the territories, the power zones allowthe improvementof innovative forms of Public-Private Partnership for the physical changes and the social and productive perspective of urban-rural regeneration givingparticular attention to the role of non-profit organisations in the form of PPP.

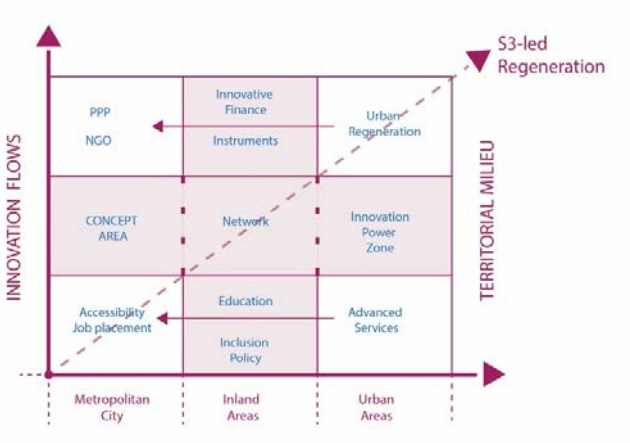

Fig. 3. Living Lab – Policy Area.

4. Conclusions

The paper highlights the potentials of the Living Lab platform to conceptualise the territorial dimension of Research and Innovation regional policies. The paper, indeed, depicts preliminary findings of an ongoing research.

Among the wide list of different contributions in literature about the concept of Living Lab, we considered the following given by Bergvall-Kåreborn et al. (2009):"A Living Lab is a user-centric innovation milieu built on every-day practice and research, with an approach that facilitates user influence in open and distributed innovation processes engaging all relevant partners in real-life contexts, aiming to create sustainable values". Such definition allows to incorporate the spatial dimension by considering the new governance process (Tömmel& Verdun, 2009) and the components of territorial capital,stressing how it is important to understand the different distribution of knowledge and innovation flows in particular contexts. Additionally, we considered crucial what Foray (2015) argued about the role of S3 within Cohesion Policy: "The basic idea governing the generalized adoption of smart specialization strategies within the framework of Cohesion Policy was to effect a change of paradigm in the way in which these regional innovation policies were structured; the goal is now to encourage each region to identify transformation priorities that reflect and amplify existing local structures and competences, and thus produce original and unique competitive advantages".We reasoned that the missing link in putting in practice the principles and the innovative process of S3, within development policy (Cohesion Policy, thereby), is the spatial dimension.

Therefore, the milieu innovateur has been integrated in a comprehensive concept that is the territorial milieu, in order to capture the different level of intensity concerning to the local chains of innovation.The mission of the Living Lab platforms focuses in locally definedtargetedand feasible projects, aimed at making operational the integration between rural hubs and urban areas, through the production and distribution of services to businesses, consumers and community, according to the integration of smart cities and smart specialization.The Living Lab becomes a smart platform providing: an optimal balance between supply and demand for local goods and services, in order to ensure a consistent critical mass that it can be placed in a more competitive way in the market; a "smart" management of urban / rural space through a dynamic mapping of areas with higher potential of development of hubs (such as logistics distribution centres and specialized services) which take the form of innovation power zones.

Acknowledgements

MAPS-LED project, granted by Horizon 2020 – Excellence in Science Marie Skłodowska Curie RISE 2014.

References

Bergvall-Kareborn, B., Holst M., Stahlbrost, A. (2009). Concept Design with a Living Lab Approach. 42nd Hawaii International Conference on System Sciences. Big Island, HI, USA.

Bergvall-Kareborn, B., Stahlbrost, A. (2009). Living Lab: an open and citizen-centric approach for innovation. *International Journal and Regional Development, 4, 356–370*.

Bergvall-Kåreborn, B., Eriksson C. I., Ståhlbröst, A., Svensson J. (2009). A milieu for innovation–defining living labs. 2nd ISPIM Innovation Symposium. New York, NY, USA.

Bramanti, A. (1998). From space to Territory: Relational Development and Territorial Competitiveness.SMEs and districts: hybrid governance forms, knowledge creation & technology transfer, Castellanza, 5-7 November 1998 .

Camagni, R., Capello, R. (2013). Regional Competitiveness and Territorial Capital: A Conceptual Approach and Empirical Evidence from the European Union. *Regional Studies,47, 1383-1402*.

Chesbrough, H. (2003). Open Innovation: The new imperative for creating and profiting from technology. *Harvard Business School Press, 163, 51–59*.

Chesbrough, H. (2005). Open Innovation: A New paradigm for understanding industrial innovation. To appear in Chesbrough, H., Vanhaverbeke, W., West, J. (Eds) *Open Innovation: Researching a New Paradigm*. Oxford University Press

CLUDs project (2013). Second Scientific Report: Sustainable Urban Development. The role of urban regeneration in regional contexts. *7FP Marie Curie Actions People IRSES Project N. 269142 CLUDs-Commercial Local Urban District Programme*.

Collins, H. (2010). *Tacit and Explicit Knowledge*. Chicago and London: University of Chicago Press.

Cosgrave, E., Arbuthnot K., &Tryfonas, T. (2013). Living Labs, Innovation Districts and Information Marketplace: A Systems Approach for Smart Cities. Conference on Systems Engineering Research (CSER'13). Atlanta, GA, USA.

David, P., Foray, D. (2003). Economic Fundamentals of the Knowledge Society. *Policy Future in Education, 1, 20–49.*

Delgado, M., Porter, M., &Stern, S. (2012). Cluster, Governance and Economic Performance. Cambridge: National Bureau of Economic Research.

Doloreux, D., Parto, S. (2005). Regional innovation systems: Current discourse and unresolved issues. *Journal of Technology in Society 260, 133-153*.

European Commission. (2000). Innovation Policy in a Knowledge-Based Economy. A Merit Study Commissioned by the European Commission Enterprise Directorate General.Publication no. EUR 17023 of the Commission of the European Communities, Luxembourg, 2000.

European Commission. (2011). "A new framework for the next generation of innovative financial instruments – the EU equity and debt platforms" (COM(2011)622 final).

European Commission. (2013). The role of clusters in smart specialisation strategies. Directorate General for Research and Innovation. Luxembourg: Publications Office of the European Union.

Faludi, A. (2014). EUropeanisation or Europeanisation of Spatial Planning. *Planning Theory and Practice, 15, 155–169*

Ferrer, J., N., Volkery, A., Withana, S., Medarova-Bergstrom, K. (2012). The Use of Innovative Financial Instruments for Financing EU Policies and Objectives Implications for EU and National Budgets. *Brussels, Centre for European Policy Studies, 79, 18-23*.

Foray, D., David P., &Hall. B. (2009). Smart Specialisation: The Concept. *Knowledge Economists Policy Brief No.9, June (http://ec.europa.eu/invest-in-research/monitoring/knowledge_en.htm).*

Foray, D. (2015). Smart Specialisation. Opportunities and challenges for regional innovation policy. *Regional Studies Association, Routledge, 105, 2-7*.

Maillat, D. (1995). Territorial dynamic, innovative milieus and regional policy. *Journal: Entrepreneurship & Regional Development, 7, 157-165*.

MAPS-LED project (2015). First Scientific Report: Research and Innovation Strategies in Cluster Policies. *HORIZON 2020- Marie Sklodowska-Curie RISE Project MAPS-LED-Multidisciplinary Approach to Plan Smart Specialisation Strategies for Local Economic Development.*

Rossi, U, Celata, F. (2015). Rethinking regional development policies in Italy: a territorial-relational approach. *Archivio di Studi Urbani e Regionali, 112, 11–33*.

S3platform.jrc.ec.europa.eu, (2016). *Home - Smart Specialisation Platform*. [online] Available at: http://s3platform.jrc.ec.europa.eu [Accessed 5 Feb. 2016].

Salamon, L. M. (2002). *The Tools of Government: A Guide to the New Governance*. Oxford: Oxford University Press.

Scott, J. (2012). Social Networking Analysis (3rd ed.). London: Sage

Tömmel, I., (2009). Modes of Governance and the Institutional Structure of the European Union. In Tömmel, I., Verdun, A. (Eds) *Innovative Governance in the European Union: The Politics of Multilevel Policymaking (pp. 9-23).* Boulder CO: Lynne Rienner Publisher.

Tömmel, I., Verdun, A. (2009). Innovative Governance in the European Union: The Politics of Multilevel Policymaking (Eds), Boulder CO: Lynne Rienner Publisher.

Westerlund, M., & Leminem S. (2011). Managing the challenges of becoming an open innovation company: experiences from Living Labs. *Technology Innovation Management Review*, *19-25*

Zonneveld, W., Waterhout, B. (2005). Visions on territorial cohesion. *Town Planning Review, 76, 15-27.*