Innovation Strategies and Cities: Insights from the Boston Area

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Abstract
Innovation is gaining increasing attention in the contemporary European policy making and research arena. RIS3 (Research and Innovation Strategies for Smart Specialisations) translate into a policy the concept of entrepreneurial discovery, incorporating the process of co-creation across multiple stakeholders within the development and implementation of regional strategies for growth. The paper aims to provide planners and policy makers with a fresh view on the current innovation strategies at the forefront of the European debate, in particular by focussing on how RIS3 could be successfully implemented in cities. At this goal, the authors draw insights from paradigmatic international best practices, such as the innovative clusters in the Boston area, by assuming that a close similarity exists between innovative clusters and Smart Specialisation.

Keywords: smart specialisation strategies, cluster policies, innovation districts, place-based approach

1 | Spurring innovation: Smart Strategies, place-based approach and cluster policies

Innovation, stemming from the 1940s concept of *creative destruction* (Schumpeter, 1942), is at the forefront of the European debate as key element for coping with the current global crisis (Madelin & Ringrose, 2016). Indeed, overcoming the persistent Research & Innovation gap among European Regions has been a major ambition of the Cohesion Policy since it was launched. The privileged strategy for pursuing the *Smart, Sustainable and Inclusive* growth Europe 2020 vision is the integration of three drivers: 'Smart Strategies', high tech and 'place based' approach.

The origin of the European policy renowned 'Research and Innovation Strategy for Smart Specialisation' (RIS3) dates back to the work of a group of experts coordinated by Dominique Foray (EC, 2009). The Smart Specialisation concept appears originally in the academic literature examining the so called '*transatlantic productivity gap*' between EU and US economies (McCann & Ortega-Argilés, 2015). The Information and Communication Technology sector (ICT) boosted the US productivity growth more than in Europe where the support of new technologies for innovation was scarce. In order to tackle the gap and launch a knowledge-intensive growth model (Camagni & Capello, 2013), the EU designed RIS3, within its Europe 2020 Agenda, which aims to promote local innovation processes in particular sectors and technological domains through a bottom-up identification of specific 'innovation patterns'.

RIS3 is based on four principles: 1) economic development is knowledge and innovation-driven; 2) history matters; 3) the perspective of economic growth embraces the bottom-up approach; 4) this policy is demand-driven, i.e. derived from local potentials and needs. Because of its focus on the specific regional assets, the RIS3 policy is embedded in the 'place-based' approach (Barca, 2009), implying *co-creation* between local actors and all levels of government. Thus, local policymakers, universities and private entrepreneurs are the key actors for promoting knowledge and innovation (Capello, 2014), whereas governments perform a strategic role in the involvement of local stakeholders and public-private coordination (Iacobucci, 2014).

On the one hand, public policies are based on the concept that regions have their own specific industrial and institutional histories, and that local stakeholders should be included in the regional development strategy implementation (Coffano & Foray, 2014). On the other hand, 'entrepreneurial discovery' needs to

be pursued (Foray et al., 2011), and in the self-discovery process public and private sectors must collaborate strategically (Hausmann & Rodrik, 2003).
Looking at the US 'Smart Strategies' implicit interpretation, at least three pillars are emerging. The first one is connected to the active support policy of the central public institutions, in particular the role of Federal government in boosting the innovation, with R&D subsidies. Second, the privilege of 'Key Enabling Technologies' (KETs), providing the basis for innovation in many production sectors and helping to tackle societal challenges. Third, the widespread application of the 'Cluster theory' as it was re-conceived and innovated by the Harvard Business School of Michael Porter in the early '90s, after the original Marshall's districts (1920) and the experience of the Italian industrial districts of the '70s. According to Porter's definition, "Clusters are geographic concentrations of interconnected companies, specialised suppliers, service producers, firms in related industries, and associated institutions (universities, standard agencies, trade associations) in particular fields that compete but also cooperate" (Porter, 2000).
Cluster policies share much common ground with the underlying principles of RIS3 (Ketels, 2013). Foray himself acknowledges that 'vibrant innovative clusters' should be considered as a 'classic outcome' or an 'emergent priority' of a RIS3 strategy, but also warns that Smart Specialization is not the same thing as a cluster policy (Foray et al., 2011). Both clusters and RIS3 can be considered as 'systemic policies' and are considerably place-dependent, since they root in that bundle of assets and capabilities already present in the territory. Some authors highlight at least two main distinctions (Aranguren & Wilson, 2013). Firstly, cluster policies are tailored to the specific needs of cluster agents and do not deal with the broader scope of gaining competitive advantages for the regional economy as a whole; secondly the cluster competitiveness is promoted among a broad range of areas (internationalisation, quality standards, training, R&D, etc.), while RIS3 strategies specifically target the allocation of regional investments for the enhancement of the innovation processes and the valorisation of human capital.
Recent best practices in the US highlighted the evolution of cluster benefits in terms of economies of scale for urban agglomerations, stakeholder networks, increase of local exchange knowledge. Although, according to Porter's method, it is possible to recognize and study clusters only at macro-territorial level (State or County), their geography elicits application at local scale as well.
Across US the most intriguing interpretation of 'Smart Strategies' and the emerging model that embodies the idea of recreate an innovative urban ecosystem is well represented by the concept of 'Innovation District', a 'geographic area where leading-edge anchor institutions and companies cluster and connect with start-ups, business incubators, and accelerators' (Katz & Wagner, 2014). The city of Boston represents a paradigmatic case of successful integration between innovation and city growth, thanks to the alignment between urban development initiatives and exploitation of the potential of innovation- related growth. The following sections explores in details this case.

2 | The 'Innovation District' experience in Boston

The Greater Boston area is one of the most innovative US contexts. Thanks to its high agglomeration of educational institutions and industries, as well as its physical and infrastructural system, the whole metropolitan region has been able to attract an increasing interest of main investors and venture capitalists. This flourishing environment has positively impacted on the economic growth of the Metropolitan area, showing the highest rate of growth across the US (Kahn et al., 2012). Moreover, in the last thirty years the cities of Boston and Cambridge implemented urban policies supporting the economic growth, followed more recently by other adjacent municipalities like Somerville and Charlestown. The physical effects are witnessed by the spread of new development and renewal projects that are changing the urban geography of the Boston area by supporting the settlement of innovation hubs within specific neighborhoods.

2.1 | Boston Innovation District

The Boston Innovation District (BID) planning initiative is part of the *Innovation Boston Strategy*, that aims to create a neighbourhood able to attract financers, resources and talent, in other words creative activities operating in a thriving urban space. The BID project was conceived to redevelop the South Boston Waterfront, a 1000 acres underutilized area that hosted industrial activities, transforming the area into a mixed-use (residential, commercial and retail) and thriving hub of innovation and entrepreneurship with more than 300 technology, life science and other companies, creating about 6000 new jobs.
The City managed the project through its public agency - the Boston Redevelopment Authority (BRA) - and provided partial funding for constructing new public spaces, building a network with private

companies and using financial and planning tools within the PPP 'architecture' in order to guarantee the progressive implementation and ease the burden of the costs of the project on the City's budget. The centrepiece of BID is the District Hall, a large public space where innovators can meet, aggregate, exchange ideas, explore potential synergies, finalize their creativity, find concrete agreements. The building opened in 2013 as a result of a PPP between the BRA and private investors and offers 12,000 square feet of meeting space. The public administration initiative has been actively involved in attracting both start-ups and more established companies as Vertex Pharmaceutical and most recently General Electrics that received significant tax benefits for setting up their new headquarters within the BID boundaries. Unique assets are concentrated in the dense redevelopment area, as the world's largest start-up accelerator - 'MassChallenge' - and 'Factory 63', an interesting experiment in innovation housing, providing private micro-apartments and public areas for working, gathering and organizing events.
Launched by the Menino administration in 2010 and still in progress, the vision for the Innovation District has four main features, setting the general guidelines for how development should took shape:

- *Industry-Agnostic*: the initiative is to be open to industries of every kind; this should allow for broad inclusivity of established companies and small enterprises, providing a framework for community engagement;
- *Clusters*: the BID's motto is "Work, Live, Play" with the desire to cluster innovative entrepreneurs to increase proximity and density. Creative people in a cluster environment can share technologies and knowledge easier. Following this model, the Municipality also hopes to attract amenities that would encourage entrepreneurs to spend more time in the district networking and socializing. The city needs to retain talent through a working and living environment favorable to creativity and exchange;
- *Experimental*: the public administration is adopting an experimental framework characterized by expedited decision making and planning flexibility. The choice of the City, confirmed by the present administration after the mayor Menino's original idea, aroused interest among the business community and created momentum for the public sector's efforts to attract developers, creative firms, company CEOs, entrepreneurs, and non-profit organizations and engage them for building a new community;
- *The City as Host*: differently from the scenario of the 'university as host', as in the case of MIT in Kendall Square (Cambridge), in the BID the City embodies the role of host institution. The identification of the Innovation District as the flagship project in Boston means that the neighborhood will be free to develop organically, create momentum and allow innovation to spread all over the city and its surroundings.

2.2 | Neighbourhood Innovation District (Boston)

The *Neighbourhood Innovation District* (NID) is an on-going public strategy launched in 2014 by the Boston Municipality. The main goal is to encourage and widespread innovation and technology within deprived, low-income neighbourhoods as necessary tools that generate a positive impact on small business and local economic development. Instead of supporting a specific industrial sector 'ex ante', the NID' strategy has chosen a 'place-based' approach able to empower the existing business activities as well as the physical features of the sites. Shift from a merely entrepreneurial- centred vision towards a more inclusive and community oriented perspective, the NID seeks to take into account the overall economic empowerment of the neighbourhood. The entire area has been considered as a whole, by tackling in advance the community displacement potentially induced by the increase in the real estate values in 'Innovation Districts'. At this goal, the 'NID Committee' - body created by the present administration for identifying policies, practices, and infrastructure improvements to support the development of Innovation Districts throughout Boston - has strongly recommended the adoption of a District Housing Plan as a tool to provide new affordable housing and business space. According to the Committee, the main actions for a successful implementation of an Innovation District into an existing distressed neighborhood should ensure adequate start-up education programs and promote a streamlined regulatory framework for new entrepreneurs, providing space for both retail activities and new affordable housing.
Following specific criteria highlighted in the Innovation District experience across US (transit access, affordable office space, arts and cultural amenities, involvement of non-profit organizations) and considering the peculiarities of the area (presence of high-educational institutions, vacant lots, transportation nodes) the mayor Walsh government has chosen *Dudley Square-Upham Corner Corridor,* a vibrant zone within the Roxbury neighborhood, as location of the first step of the initiative, an Innovation Center. Since the Roxbury Innovation Center was only recently opened, up to now it has been mainly involved in providing vocational training programs for local residents. It will be interesting to monitor

how the challenge of attracting private investments in the area, due to the lack of a thriving socio-economic ecosystem, will be achieved.

3 | Findings and open issues

Looking at the case studies, it clearly emerges how the Boston model can represent a "virtuous hybridization" between at least two dimensions, governance and socioeconomic profile of the planning initiatives, showing how *co-creation* is key for enabling innovation in cities. Given the continuity of the 'progressive' political guide of the local administration, it is clear the emerging trend of giving more emphasis to the co-creative approach, especially in the most critical contexts, regardless whether it is public or private driven. This approach is better aligned with the rationale of RIS3 than a dirigistic one could be. The meaning of the term 'Innovation Strategies' is tightly intertwined on the specific synergy between different actors of the 'multiple helix' model. Thus, a first lesson from the US Boston model regards the flexibility in the stakeholders' organisation that is associated with an adaptive strategy, based on the entrepreneurial exploration/self-creation rather than on pre-conceived plans. A factor determining the success of the initiatives and at the same time matching the typical features of the RIS3 (entrepreneurial discovery, adaptive strategy, flexibility in the implementation) is the flexibility in the appropriate blending of 'stakeholders' from the urban region, specifically public governmental institutions and local communities, i.e. a 'flexible geometry approach' in which strategies and roles can assume from time to time different identities, where the boundaries between public and private initiatives are often blurred. By looking at the European policy scenario, instead, these 'geometries' are likely to be shaped by a dominant regional approach clashing with the RIS3 nature.

A second factor is the clear interconnection between urban scale and clusters. The case studies show a strong tie with a specific urban area, and more or less explicitly the willingness to frame policy interventions within a wider spatial strategy of overall regeneration also emerges. The physical concentrations of dense fragments and significant 'critical mass' represent authentic 'hot spots' in the urban fabric and 'topologically materialize' cluster fractals belonging to complex and extended network systems.

The BID, for instance, does not show only the concentration of a huge range of economic activities, but most of all presents new thriving patterns of integrated models with young actors naturally gravitating around the space of potentials and opportunities. In general, in the 'innovation district' phenomenon the ideal objective of the regeneration strategy is the synergy between increased creative production, associated with cross-fertilization interaction, and a high level of 'urbanity'.

Finally, innovation does not happen just because some support is provided, since it is the ecosystem as a whole that has to be successfully reorganised and reinforced, including physical and socio- economic features. This is the most difficult challenge that the present Boston administration is called to face after locating an Innovation Center in a critical distressed neighbourhood like Roxbury for turning really upside down the on-going traditional strategies and doing something truly innovative: disrupt the patterns of inequality.

Shifting towards the European wider perspective, the major challenge for an effective RIS3 implementation is not to over-emphasize the role of industrial clusters, but 'territorialise' the redevelopment vision. At this goal, the planning process has the potential to become a key- driver for embedded innovation. The conscience of places is still crucial. The 'place-based' approach allows to build virtuous regeneration projects including the potential of territorial 'DNA' related to the local communities for identifying, recovering and increasing the values of local cultural specificities.

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