

Changing Patterns of Territorial Policy: Smart Specialisation & Innovation in Europe

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Report on the Session on Smart Specialisation and Higher Education Institutions

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Introduction

The session consisted of papers selected to provide an academic context for the work of the JRC for the European Commission on Higher Education and Smart Specialisation (HESS). It sought amongst other things to build a platform for HESS by highlighting the some of the key research findings from an FP7 project on Smart Specialisation. The papers were:

- *Smart Specialisation- The role of universities: Scandinavian cases.*
Bjorn Asheim & Michaela Tripl
- *Spaces of Novelty: Can universities play a catalytic role in less developed regions?*
Pedro Marques & Kevin Morgan
- *Institutional Agency and Smart Specialisation: How institutional entrepreneurs and navigators work to institutionalise a new science based industry*
Markku Sotarauta & Nina Suvinen
- *Constructing a quadruple helix to address Europe's Grand Challenges: The role of HEIs and smart specialisation*
John Goddard & Ranald Richardson
- *Universities and RIS3: The case of Catalonia and the RISCAT Communities*
Susana Elena Perez

The context

Asheim and Tripl set the scene for the session by suggesting that Smart Specialisation (SS) is probably the single largest attempt of an orchestrated, supranational innovation strategy to boost economic growth through economic diversification, and, as such, deserves to be watched closely by countries and regions aiming for this goal. SS represents the first possibility in an EU context to pursue a broad based innovation policy in contrast to the previously – and still in many parts of the EU - dominating linear approach, which has failed to promote innovation and economic growth in the heterogeneous landscape of EU's regions and countries. They argued that this requires a closer and more nuanced analysis of the role universities can play in the design and implementation of SS strategies. Generally, less emphasis should be put on basic, curiosity driven research, and a stronger focus should be placed on strategic and applied, interdisciplinary research in close collaboration with industry, the public sector and civil society (e.g. NGOs) – following a Mode 2 model -, to, among other objectives, contribute to solving societal challenges, and – not the least – on the provision of human capital.

Unpacking the university

Asheim and Trippl approached Smart Specialisation from a regional innovation system perspective that combined R & D and experienced based modes of innovation, including the user driven demand side, with all no single type of innovation-relevant knowledge (analytical, science based; synthetic, engineering based and symbolic, arts based) being privileged. Following Drucker and Goldstein they highlighted the multiple roles of universities in regions: as creators of knowledge; as knowledge reservoirs; as knowledge antenna; as human capital creators; as transferors and commercialisers of knowledge; as regional leaders; as influencers of the image and identity of regions and as connectors to local civil society. This perspective suggested that models of the entrepreneurial university engaged in government supported triple helix partnerships with business needed to be broadened to embrace engagement with society in what they referred to as a 'Mode 2' university. In such a university new modes of co-production of knowledge that are transdisciplinary, heterogeneous, reflexive and socially accountable are as important as traditional disciplinary and autonomous mode 1 knowledge production.

A similar line of argument was adopted by Marques and Morgan. While the image of the "entrepreneurial university" resonated around the world, they suggested there are sound reasons for thinking it is both misleading and damaging. It is misleading because commercial activities account for a very small fraction of the income of universities, even in the iconic cases of MIT and Stanford, and it is damaging because it implies that universities have the requisite skill sets to commercialise their knowledge. Rather they suggested that universities can only play a catalytic role in regions when they have the internal organisational capacity to engage effectively with external partners and when they are embedded in innovation ecosystems where demand-side agents (like private sector firms and/or public procurement bodies) are acknowledged to be essential for the valorisation of knowledge.

Unpacking the institutions

Shaping institutional relationships within between different actors and agencies within a region is not easy. Sotarauta and Suvinen suggest that earlier studies have shown that (a) various actors often need to innovate against the logics of institutional arrangements that are supposed to support them; (b) organized actors not only comply with institutions but consciously aim to create them or to transform existing institutions, and (c) efforts to change institutions are not based on grand plans or sophisticated policies but rather phase-by-phase processes, an evolving search for next steps and visions.

They argue that obstruction of agency, intentions and interests is a weakness in studies focusing on knowledge-based regional development and the roles of universities in it. To elaborate the link between institutions and smart specialisation as well as the roles universities play in this puzzle, they focuses on, first, the basic tenets of institutions in knowledge-based regional development, second, the concepts of institutional entrepreneurship and navigation, and third, most importantly, how actors mould institutions, navigate them and thus push for specialisation.

Goddard and Richardson suggest that one approach to building this collaborative capacity is by diverse actors coming together in 'quadruple helix' partnerships to address Grand Challenges such as environmental change and demographic ageing that confront most regions. In a European policy context linking smart specialisation and grand challenges is potentially one way of creating the elusive synergies between regional and research policy. In the case of grand challenges this requires a 'departure from neutrality' in establishing policy and programme priorities; long-term and 'open ended missions' concerning the socio-economic system as a whole, inducing or requiring system and institutional transformation; multiple objectives, addressing not merely the economic but also social and environmental concerns; complex, interlinked, global and local processes requiring multi-level action and coalitions; more transdisciplinary R&I; closer working between different parts of the public and private sector and enhanced public – private partnerships; a key role for 'stakeholders', 'users', 'co-producers'. Within the EU such an approach chimes with adoption of principles of Open Innovation and the cross cutting theme in Horizon 2020 of Responsible Research and Innovation.

However they go on to point out that there are tensions between this approach and that which characterizes smart specialization strategy formulation (S3). Ubiquitous Grand Challenges (GC) by definition are complex, broad and multi-dimensional and require generic solutions and new competencies whereas S3 focuses on sharpening current specialisms. S3 has a short term business output focus and seeks local competitive advantage whilst GC seek long term socio-economic outcomes. Nevertheless they suggest a possible reconciliation of these tensions may be found in the common adoption of principles of open innovation, of mode 2 knowledge creation, new collaborative institutional structures within regions and the incorporation of civil society and citizens into smart specialization strategies. In this regard the quadruple helix could be a valuable bridging concept between the two approaches.

The evidence

Applying their perspectives to regional economic development trajectories in the North Denmark region, Scania in Sweden and More and Romsdal in Norway, Asheim and Trippel point to the role of universities in five development paths – new path creation, path branching, path upgrading, path importation and path extension. In the case of path upgrading and branching of the North Denmark economy the universities were transferring knowledge through skilled graduates and collaborative and contract research and moving traditional industries into high value niches through adding design or symbolic knowledge. In new path creation and importation they warn of the dangers of building on basic research strengths in long cycle technologies such as energy, life sciences and ICT but point to opportunities to build on more applied engineering based research and a combination of analytical and synthetic knowledge such as medical technology, energy efficiency and embedded software which can more rapidly lead to faster diversified specialization.

Although there are risks in focusing build a new regional specialism around leading edge research the Finnish case of Tampere analysed by Sotarauta and Suvinen suggests that this is possible using the example of two emerging science-based industries. These are a human spare parts industry and optoelectronics, both emerging locally from Tampere based universities. The cases are used to highlight the meta-strategies and modes of leadership needed to provide highly complex sets of actors with novel directions, and the institutions that have both enabled and hampered the developments They shed a new light of the entrepreneurial discovery process in smart specialisation by revealing how intentional actors, independently or in collaboration, can change the institutional arrangements, and how they by operating at multiple scales they navigate complex institutional arrangements a So called 'Institutional entrepreneurs' mobilise competencies, initiate changes and actively participate in their implementation. They act smartly as 'institutional navigators' working to position themselves and other agents in the jungle of competing and conflicting sets of institutions and aim to act strategically by taking the lead in change efforts and challenge existing rules and practices and institutionalize alternatives.

Goddard and Richardson reveal a not unrelated process in the North East of England around building on academic and clinical strengths in the field of ageing science to address the challenge and opportunities of an ageing population by building quadruple helix partnerships. Key QH actors have established the ageing agenda locally, ensuring institutional buy-in and configuring national policy to prompt local actors to sustain a commitment. They note the role of established partnerships between researchers and civil society organizations, notably an Elders Council and a 2,500 member citizen user panel V.O.I.C.E North (Valuing Our Intellectual Capital and Experience) and strategic sites (Campus for Ageing and Vitality) where collaboration can take place. The panel engaged older members of the public in research in order to produce well-being effects. It supported research translation and helped business innovate, through creating a better understanding of what older users and consumers require and allowed SMEs and academics to engage with a pool of older people to whom they would not otherwise have had access. Most importantly it provided a sustained network of participants with a deeper understanding of the research and innovation process as 'research-savvy citizens'. Goddard and Richardson argue that sustained engagement is necessary to effect the policies and strategies of organisations at multiple levels and to ensure that they are not led away from the challenge agendas, as core priorities (e.g narrowly defined research excellence in universities and the day to day care of the elderly in local authorities) re-establish themselves under the pressures of everyday institutional demands.

Whereas the previous papers had focused on single universities in the final paper Susana Perez highlights the importance of a network eight universities to smart specialisation across a region, in this case Catalonia she talks of a RIS3CAT community. She links the entrepreneurial discovery process to the third mission of universities and identifies two stages: 'taking stock' - identifying priorities and 'flow' - defining the process, implementation and monitoring of the mechanisms used. In this there are familiar tensions between university international ambitions in the top down entrepreneurial discovery process and individual academic careers and incentives. Also difference in the priorities of

long established universities in Barcelona and new universities paying more attention to territorial development in the provinces of Gerona and Tarragona. She concludes that more flexible instruments are needed to allow different actors to take part in the entrepreneurial discovery process with the support of public sector platforms and that universities are learning and adapting to the new policy landscape.

Conclusion

The discussion of the papers raised the question of what distinguishes university participation in the shaping and implementing of smart specialization strategies and the more generic issue of engagement with business, government and civil society. The answer probably could be found in the capacity of not only the universities in the region and the way they are regulated and funded (the supply side of the so-called knowledge triangle or university 'reach-out) but also the capacity of business and regional and local government to clearly prioritize needs and opportunities (the demand side). Insofar as entrepreneurial discovery was a key concept within smart specialisation then this had to be an inter-institutional and iterative process supported by publically supported and broadly defined 'platforms'