



THINKING SMART

Toolkit for the engagement of HEI in regional growth

Policy Brief

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Abstract

The Thinking Smart project is funded by the Education, Audiovisual and Culture Executive Agency (EACEA) through the Erasmus+ programme with the aim of promoting the role of Higher Education Institutions (HEIs) in regional growth and development.

The Thinking Smart Project policy brief was initiated as a green paper within the WP6 - Dissemination, Engagement and Exploitation - as a work in progress to be developed with the contribution of Thinking Smart partners and advisory board members. The paper was further constructed, analysed and strengthened by national seminars (Germany, Italy, Poland, Portugal, Spain, and the UK) with policy makers. The national seminars were organised by each Thinking Smart partner, while SGroup coordinated and supervised the overall design of these events.

The policy brief will consider how to strengthen HEIs contribution to Smart Specialisation and/or integrate it in the strategic direction, with the regional/national government body in charge of development, research and innovation. The policy brief should consider the regional investments in innovative themes where they have a competitive advantage and use engagement and bottom-up diagnostic processes.

Smart Specialization Process through the identification of best practices at HEIs

The Thinking Smart Project completed 10 case studies of Higher Education Institutions (HEIs) within the WP2 – Groundwork - (Universidade de Trás-os-Montes e Alto Douro (UTAD) - Douro Region, Technical University of Valencia (UPV) - Valencia, University of Valencia (UV)- Valencia, Politecnico di Milano (POLIMI) - Lombardi, Newcastle University (NU) - NE England, Lapland University- Lapland, Karlstad University- Sweden, University of Lodz (ULODZ) - Poland, Lodz University of Technology (LODZUT)- Lodzkie region and Eindhoven University - the Netherland) to identify the best practices associated to each of the selected HEIs to strengthen smart specialization strategies (RIS3). The UPV was the Thinking Smart partner responsible for Work Package 2 that involved research on best practices for the contribution of HEIs to RIS3 and coordination for the completion of the case studies. Work package 2 and other work packages can be found on the **Thinking Smart website** listed in the references. The primary goal of this section will be to detail the best practices identified through action research by each of the partners.

The best practices identified in the UTAD case study were: The organization, facilitation and engagement process by UTAD with a Regional Forum to understand and determine the needs of the stakeholders from business, civil society and municipal governments. This forum allowed for a participative decision-making process for regional development by the key stakeholders. In addition, the development of a consortium of universities in the North of Portugal to collaborate and align research proposals has had an effective impact on the region's economic and social development. The innovative inter-organizational communication process with all three public universities has benefits for strengthening a collaborative regional development process. This consortium strengthens the cooperation with the North Portugal Regional Coordination and Development Commission (CCDR-N). Also, the UTAD constructed a strategic alignment with a Science and Technology Park and the Vila Real municipality. The collaboration supported entrepreneurs and businesses in the development of innovation and the transfer of technology and knowledge for the Douro region. It also served as an incubator for innovative start-ups.

The contributions from the University of Lodz and Lodz University of Technology were the following best practices: An active involvement in developing regional strategic documents in the field of RIS3, in particular Regional Strategy of Innovation LORIS 2030 and Sector Policies for Lodzkie Region, the aim of which was to create six strategic Documents that include the vision and aims of each key industry, functioning as a Regional Intelligent Specialisation. The

co-founding of regional science and technology park - “Bionanopark” with an attractive research, investment and incubation offer addressed to regional companies. The UL work also involved the assistance for business clusters in the region. The process is built on a model of Open Collaboration Network, flexible configuration, which brings together public and private agents who share their knowledge and resources on a voluntary basis. The creation of the Innovation Centre Technology Accelerator, which supports innovative projects through a modern consulting system, that is knowledge based and also includes the assistance in raising capital resources. In addition, launching the STARTUP project that promotes and helps students and graduates in entrepreneurial technological activities, and mentors them during the incubation period. All initiatives, projects and companies belonging to STARTUP have links with the entrepreneurial value chain.

The best practices identified in the case-study of the University of Valencia and Technical University of Valencia were the following: The creation of the Valencia Space Consortium provides scientific research and technological development services in any field related to the space sector, increasing safety and quality of production of space systems. The Patent Bank is a joint program of the *Generalitat Valenciana* – regional government - and the public research bodies of the Region of Valencia, which aims to facilitate the meeting between entrepreneurs, entrepreneurs and innovative knowledge generation centres, to facilitate the transfer of the technological results generated by scientists to the productive and service sectors from both HEIs and private funded research. Also, the creation of Science Parks as interfaces between the University and the social and economic agent is strongly contributing to the integration of the knowledge triangle and the alignment with the aims of the regional S3.

The Politecnico di Milano (POLIMI) best practices are the following: the HEI has promoted the constitution of a Foundation as the result of a joint effort between the Athenaeum and some of the most relevant city and regional institutions and corporations; it acts as an explicit tool to set up a stable Quadruple Helix collaboration in terms of entrepreneurial discovery. The Foundation’s main role is that of developing innovating projects both for large and small and medium firms as well as European projects, in particular it is now in charge of “PoliHub”, a startup incubator aimed at promoting the take-up of R&D results. It offers support not only to start up initiatives, but also for existing high tech companies. A third interesting Best Practice was the initiative “Campus Sostenibile”, which started in 2010 aiming at achieving a sustainable university campus. After a first phase of experimentation, it developed into a more ambitious project, on the base on the interaction with a EU funded research project focused on the role of

Living Lab in Smart Communities. As such, it provided a test field for the idea of Smart cities and communities starting from the research community at the university and the practical experiences from students, faculty and citizens. The goals of the project were to test innovations developed by scientific research; promote life style transformation for more liveable spaces; establish a positive example for the entire city and cope with the international network of sustainable campuses.

Lapland University best practices include the following: Internationalisation was a clear policy target at several distinct levels, including the setup of interdisciplinary cooperation groups across scientific and artistic fields, by strengthening the acquisition of EU funds in support of Arctic growth, business cooperation within the Arctic Macro-region (s). This initiative resulted in the global marketing of Arctic tourism, international transport routes and information networks.

Newcastle University case-study identified the following best practices: An interactive best practice that focused on the contribution of Newcastle University to the implementation of the national industrial and innovation strategies that underpinned the RIS3 in England. The UK government has recently awarded Newcastle University two national centres - the National Innovation Centre for Ageing (NICA) and the National Innovation Centre for Data (NICD). As well as being aligned with priority sectors and technologies in the national innovation and industrial strategies, the two fields covered by these centres (ageing and smart data) are broadly aligned with strategic priorities identified in the regional RIS3 produced by the North East Local Enterprise Partnership (NELEP). In addition, a team of researchers from Newcastle University carried out an analysis of the economic strengths of the region's economy that resulted in a collaborative report identifying the four areas of activity that have become the smart specialisation priorities of NELEP. This report therefore is featured as a good practice example of a university supplying the analytical capabilities that at the time (when NELEP was still in the early stages of becoming operational) were lacking in the relevant regional authority. This model of leveraging university capabilities for smart specialization analysis through the entrepreneurial discovery process is an approach that has been followed in the Thinking Smart project.

The Karlstad University best practices were: The RIS3 for Värmland builds on a process of strengthening relationships between Region Värmland and Karlstad University that began developing following an Organisation for Economic Cooperation and Development (OECD) review in 2005/2006. In the period leading up to the development of the RIS3 (2010-2014) this process was formalised through a Collaboration Agreement between the two parties. The main tangible product of this agreement was an initiative to create 10 new professorships within the

University in areas that were deemed relevant by the Region, businesses and HEI. The Karlstad University has created the Smart Specialisation Academy as the latest manifestation of the formal collaboration between the regional governments and businesses, and was funded by the partners in the region for the period 2016 to 2020. A distinctive feature of the RIS3 for Värmland is that Gender Mainstreaming within the labour market is written into the strategy; not just as an add-on to the prioritisation of smart specialisation domains, but as an integral thread throughout the whole document to reduce gender inequalities.

The Eindhoven University of Technology case study identified the following best practices: The collaborative research approach between HEI, regional government and industry has initiated a social value process for the creation of evidence-based lighting design for the regional industry. In other collaborative cross-sectorial initiatives for smart specialization, a Smart and Green Mobility programme has been implemented. Smart Specialization Strategy also played a significant role in sustainable energy, mobility and information technology (IT) for Smart City's development in the region.

Further collaboration ideas and pertinent information has been documented through the Thinking Smart project toolkit found at the website. This toolkit and the self-assessment survey were constructed to be a learning process for users and regional entities in order to strengthen and improve their involvement in the RIS3 process. The thinking smart assessment can be found at this link in policy brief references: <http://survey.spi.pt/index.php/917228?newtest=Y&lang=en>.

Implementation of the RIS3

The RIS3 approach benefits from a facilitative and collaborative dialogue between HEIs, regional and municipal governments and the regional stakeholders such as business leaders and civil society. The HEI should promote collaborative and innovative regional development as a co-creation process. The civil university in the early role of RIS3 mobilizes regional stakeholders to identify gaps and challenges in order to reduce barriers for regional development. It becomes a process of collaborative analysis with all key elements in the region that must be carried out to identify concerns and problems in the region using in some cases, mind setting workshops, mapping, critical analysis (gaps), desk research and survey methods.

Contribution of HEIs in RIS3 (WP3 - Summary Report - Deliverable 3.4).

The contribution to HEIs in RIS3 is based upon the work completed in the WP3 (Entrepreneurial Discovery in HEIs) of the ERASMUS + Thinking Smart Project. The final report was completed

through the collaboration of five partners who implemented “mind setting” workshops to collect information from regional stakeholders and next construct their case study report. The five Thinking Smart Project partners involved in the WP3 are NU, UTAD, UPV, POLIMI and ULODZ. In this effort, the NU Thinking Smart partner elaborated the WP3-summary report through a cross-partner analysis of the five case study reports. This section is based on the analysis in this summary report of opportunities identified for the HEIs to become more involved in the implementation of their region’s RIS3.

In this context, “the RIS3 are recognised as representing an ongoing opportunity for the five case study universities to deepen their involvement in helping to support innovation in their region. Where a well-developed set of smart specialisation priorities are developed, such as in the case of UPV, this can be used to identify specific areas where the HEIs capabilities can be applied. More generally, the priority domains can act as focal areas around which the university and region can concentrate on strengthening their collaboration in the future. A number of the case study reports highlighted possible coordination mechanisms through which this could be achieved. For instance, shared forums for information exchange with local firms, visiting professor positions for individuals with industry experience relevant to smart specialisation domains, systems to better monitor developments in the regional economy and progress against RIS3 goals, and paid internship schemes for students in innovative firms.

Notably, many of these ideas about where collaboration with business can be increased relate to the teaching rather than research activities of the case study HEIs. This reflects a growing recognition that, although smart specialisation was introduced as a concept to guide research and innovation strategies in Europe, putting these strategies into practice raise new questions about the local availability of advanced skills and knowledge to which higher education provision is central. However, there is still a need for further understanding of how universities can most effectively identify and respond to this specialist labour demand in emerging smart specialisation domains as part of a joined-up regional strategy (Vallance *et al.*, 2017). The findings from across this work package have contributed to this by highlighting the need for increased dialogue with local employers around their current and future labour needs, and for dedicated mechanisms such as placements or internships through which higher education teaching can incorporate learning of practices within industry. The UTAD report, in particular, foregrounds teaching as the key mission of this HEI. This suggests the possibility of extending the areas in which the institution offers training support beyond their current focus on agricultural and winemaking to also include related areas (e.g. traditional arts, craft and heritage) that are relevant to the local economy. In

cases such as UPV and NU, however, the difficulty of universities introducing new teaching programmes within inflexible systems for funding higher education are highlighted when these do not coincide with existing student demand. UTAD and NU both also identify the potential contribution of graduates from their HEIs in areas such as creative arts, humanities, and social sciences that may not be associated with smart specialisation areas focused more directly on, for instance, engineering or life science related fields.

Finally, several of the reports recognise the importance of shifting national or regional policy landscapes to the unfolding of smart specialisation in their specific context. For instance, this includes a fundamental reform of the national higher education system (ULODZ), a regional bill aimed at enhancing HEI social and economic engagement (POLIMI), and the revival of a more interventionist national Industrial Strategy agenda (NU). These changes may disrupt relationships that HEIs have already established, but also may provide new opportunities to align more strongly with smart specialisation priorities in their region” (Work Package 3 – Entrepreneurial Discovery in HEIs Summary Report Deliverable 3.4 October 2017).

Development of Policies for the Role of HEIs in RIS3

- 1) The teaching and research career at HEIs should consider the importance of those colleagues who work with entrepreneurs and businesses to mobilize them toward innovativeness and collective problem solving within their cluster. HEIs contribute to RIS3, but there is an obstacle in the traditional academic career path for advancement. Academic staff involved in these activities should be recognized by RIS3 activities as relevant for advancement. The career evaluation of professors involved in RIS3 should consider their contributions to regional development and not just award scientific publications.
- 2) The HEIs need to adapt the curricula so students can lead and organize democratic interactions with regional stakeholders in their future employment. The adaptation of the curricula would link to competencies related to RIS3 and democratic decision making processes. However, HEIs cannot do this alone and the Ministry needs to understand the importance of RIS3 for regional economic development and collaborate in changes in curricula and also the recognition for advancement of academics who are a part of this participatory and democratic process.
- 3) HEIs need to improve their relationship with businesses and civil society in the territory and value RIS3 in the academic career appraisal. One of the drivers for regional development is the capacity of research centres and their staff to be relevant in economic development

research within low-density regions. These research centre members need to balance their research interest within RIS3 and their heavy teaching load.

- 4) Governance needs to be improved at national, regional and local levels so HEIs can improve the RIS3 process. HEIs should strengthen collaboration and inter-organizational communication so that all regional governments and municipalities are part of the decision-making and governance process for innovative economic development in the territory. Governance needs to be multi-scalar and construct partnerships at international, national, regional and municipal levels. HEIs can disappear if they do not recognize this aspect of institutional strategic governance.
- 5) HEIs need to understand systemic regional thinking by understanding the forest system and not the lone tree. HEIs need to promote governance with all of the actors in the region such as businesses, civil society and municipalities and assist them in resolving problems and monitor the on-going regional development process. In some respect, the SMEs do not have a vision of a regional systemic process. HEIs can implement outreach programmes to train regional stakeholders in understanding systemic thinking.
- 6) HEIs involved in project proposals for RIS3 should have capacities to diagnose or complete an appraisal of the territorial unfelt and felt development problems and economic issues. HEIs need to increase interaction and mobilize the regional stakeholders for the construction of territorial strategies and policies. There is a need for baseline information or a complete characterization of the region as a point of departure for regional development and HEIs have the experience to do this type of analysis or promote other regional entities to complete this process. The HEI needs to be interlocutor or facilitator and speak the language of the SMEs to transfer scientific knowledge and knowledge that they will use in future business endeavours. HEIs need to assess the territory and use co-creation to identify innovations with the regional stakeholders, in order, to improve economic development and next transfer innovations to the less active regional stakeholders.
- 7) Science parks or similar structures that facilitate and collaborate with HEIs need to improve governance with civil society and industry. These parks can strengthen cooperation with the HEI in their region through the improvement of RIS3 policies and strategies. The HEIs and Science parks can collaborate to promote entrepreneurship in a variety of forms such as encouraging the education in entrepreneurial skills, the creation of start-ups, incubators or support mentoring to entrepreneurs. In addition, identify the competencies required by businesses and industry to work collectively to solve problems to strengthen regional development. These Science parks with the collaboration of HEIs require policies that can

improve the interaction process for co-creation of innovations in the region.

- 8) Policies to be developed for the promotion and constitution of consortia with different regional actors, including HEIs, industry, civil society and municipal governments should be considered. In this regional consortium, a collective reflection can improve relationships and identify best practices and positive experiences. The coordination and organizational work should not be overlooked and the key leaders and stakeholders require soft skills to facilitate and broker relationships. This is a participatory interdisciplinary process that facilitates an innovative co-creation solution to the economic problems in the region.
- 9) Policies that recognize the role that HEIs play to address social issues like sustainability or the reduction of gender gap issues for the development of the region need to be formulated. These strategic policies require that HEIs prioritize interdisciplinary assessment of the economic and social development situation in the region. This assessment and research agenda will require financial incentives as well.

Lessons Learnt

The Thinking Smart Project has identified a list of concerns and issues for the strengthening of the RIS3 and requires further contemplation and content analysis. The analysis needs to go forward in the consideration of these issues. The role of universities in the RIS3 process requires further understanding the collective decision making in allocating responsibility for the implementation of policies, public financing and reporting and monitoring RIS3. This involves the participation of municipal governments, civil society and businesses and industry in the region. The Thinking Smart Project has played a role in understanding how universities in low-density regions as well as universities from more developed regions are approaching and progressing in the RIS3. There is more to learn about the role of universities in respect to RIS3 and these are the key lessons to be considered.

- Alliances by specialization
- Multi-level governance/alliance
- Strategic alliances
- Understanding the characteristics of place through HEI facilitation
- Collaborative development of national and regional policy
- Institutional characteristics of the HEI that promote RIS3
- Strategic planning and systemic regional thinking
- Curricular adaptation of HEI with the regions industry and businesses.
- Democratic governance and decision-making for regional development.

- Wider engagement with civil society

Future Perspectives for RIS3

The European Commission has committed to smart specialization and it continues to be part of Cohesion Policy post 2020 (i.e. for the period 2021-2027). In this regard, the future perspectives for RIS3 will continue to value a placed based bottom-up decision-making and problem resolution process engaging and mobilizing a wide array of stakeholders in European regions. Although bottom-up through the entrepreneurial discovery process (EDP) and other participatory assessment tools, it will continue to require support and guidance from a European policy context. The HEIs will continue to be an important driver in the RIS3 exercise. Smart Specialization will be relevant and add value for placed based regional development and universities will have a critical role in this process associated to the EDP.

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