



Interreg



Danube Transnational Programme

EDU-LAB

EDU-LAB wp3:

**e-learning course 4: Strengthening
the regional economic development**

Theme 4: RIS3/Smart specialization

**Session 2: HEIs leading role in regional
development and innovation strategies**

e.g. for smart specialisation

The European Policy Context

The role of HEIs and ROs in RIS3 is to be considered in the context of the 'Europe 2020' strategy's priority themes of smart, sustainable and inclusive growth and in particular the initiatives aimed at catalysing smart growth, an economy based on knowledge and innovation. These initiatives relate to:

- Innovation
- Education
- Digital Society

The European Policy Context

Innovation:

The aim of the Innovation Union Flagship Initiative is ‘to re-focus R&D and innovation policy’, and thereby strengthen every link in the innovation chain from basic research through to commercialisation (European Commission 2010). A central element of the research and innovation agenda of the Commission is the development of an open and competitive European Research Area (ERA). ERA has been established as a policy for facilitating European integration and scaling-up initiatives for the production and exploitation of knowledge; that is, strengthening the knowledge-based economy. The promotion of European R&D activities takes place via inter-European partnerships and networks which bring together HEIs and ROs with SMEs and larger companies. They also include dissemination activities between sectors and regions.

The European Policy Context

Innovation ... cont.:

ERA focuses also on removing barriers which prevent seamless access to online research services and e-infrastructures and on building a "digital ERA" (European Commission 2012). A policy for Open Access and Open Innovation will be further promoted in order to strengthen the knowledge triangle and research cooperation in the EU and on a global scale. A driving force for ERA within the next years is the implementation of 'Horizon 2020', the new Framework Programme for R&I. Embedded within the different actions of Horizon 2020 is the idea of scientific and technological excellence.

The European Policy Context

Education:

Europe 2020 highlights higher education as a key policy area where collaboration between the EU and Member States can deliver positive results for jobs and economic development.

The Higher Education Modernisation Agenda is designed to contribute to these goals. The basic tenets are that:

- (i) higher education, with its links with research and innovation, plays a crucial role in personal development and economic growth, providing the highly qualified people and the articulate citizens that Europe needs to create jobs and prosperity; and
- (ii) that if Europe is not to lose out to global competition in the fields of education, research and innovation, national higher education systems must be able to respond effectively to the requirements of the knowledge economy.

The European Policy Context

Education ... cont.:

The main areas for reform identified in the new agenda touch on all aspects of 'the knowledge triangle' and HEI's role therein: from delivery of education and research activities through to their potential as drivers of innovation. Again, achieving excellence is one of the guiding principles. These areas are: to increase the number of higher education graduates; to improve the quality and relevance of teaching and researcher training, to equip graduates with the knowledge and core transferable competences they need to succeed in high-skill occupations; to provide more opportunities for students to gain additional skills through study or training abroad, and to encourage cross-border co-operation to boost higher education performance; to strengthen the "knowledge triangle", linking education, research and business and to create effective governance and funding mechanisms in support of excellence.

The European Policy Context

‘Digital Agenda for Europe’ (DAE):

This aims at delivering “sustainable economic and social benefits from a digital single market based on fast and ultra-fast internet and interoperable applications” (European Commission 2010). “Research and innovation” and “Enhancing digital literacy, skills and inclusion” are among the main pillars of the Digital Agenda which are concerned with making full use of information and communication technologies (ICTs) and creating open knowledge environments for research and education. The EC highlights that excellent research depends upon world-class facilities and research infrastructures, including e-infrastructures which enable eScience, i.e. data-intensive collaborative research carried out by geographically dispersed teams. Such concepts, including the concept of Virtual Mobility (ESF 2013), are particularly relevant to HEIs and ROs in less developed European regions in the context of developing and implementing RIS3. It is noted that an explicit Digital Growth Chapter is required in each RIS3.

The Economic Context

As part of Europe 2020 strategy, RIS3 represents a key policy response to a particular economic context. **Three** main aspects have influenced the adoption and the envisaged use of the RIS3 concept:

- 1. Uneven economic landscape and the concern for European cohesion.** Member States have adopted a set of shared economic objectives for the Union as a whole, but different regions in the EU have different capacities to contribute to and/or to reach these objectives. The level of economic development in the EU is uneven, with significant disparities between the most and the least advanced regions. RIS3 was conceived as a policy tool to give a new impetus to economic and social development, placing special attention on unlocking regional potential, including in currently less economically advanced regions. To achieve this, RIS3 proposes a particular type of engagement of HEIs and ROs in place-based development initiatives - in cooperation with the authorities, with the business sector and with the civil society.

The Economic Context

Three main aspects ... cont.:

2. Global economic crisis and its specific manifestations in the EU. The EU has been affected in significant ways by the financial crisis and the recession that started in 2007-2008. The impact of the crisis included contraction of real GDP, a sharp decline in industrial production, or high unemployment in several Member States. The economic crisis generated a large discussion about economic governance in the EU. The adoption of the policy principle according to which investment in R&D, as well as in higher education, is part of the solution to exit from the economic crisis, represented an answer to this situation. RIS3 has emerged as a policy tool designed to help restore growth by promoting the expansion and application of science/research and innovation at regional level. It calls for formal strategies that bring together HEIs, ROs, national and regional authorities, and the business sector, while combining and taking advantage of various sources of support from the EU..

The Economic Context

Three main aspects ... cont.:

3. Funding of HEIs and ROs. The economic crisis has generated a new discussion about and approaches to the funding of HEIs and ROs. Some EU countries have experienced significant reduction in the public funding for research and education. The adoption of RIS3 has been aimed in part at significantly increasing funding opportunities for HEIs and ROs, while stimulating them to engage more and in new ways in regional development

Features of HEIs relevant to Regional Engagement

Higher education institutions - HEIs

HEIs have been around for a long time and have always been engaged with the communities (local, regional and national) of which they are a part. Martin Trow famously distinguished the elite, mass and universal forms of higher education (Trow 1974), defining their respective functions as “shaping mind and character of ruling class; preparation for elite roles”(elite); “transmission of skills; preparation for a broader range of technical and economic elite roles” (mass) and “adaptation of ‘whole population’ to rapid social and technological change” (universal). While the definitions relate mainly to the teaching role of higher education, the formulation relating to ‘universal higher education’ can readily embrace the research and knowledge transfer functions within knowledge societies.

Features of HEIs relevant to Regional Engagement

Higher education institutions - HEIs

The responsibilities of higher education extend beyond producing graduates and research outputs to include greater public engagement. This takes a variety of forms and involves collaboration with government agencies, businesses, local communities and regional authorities. Mechanisms of interaction between society and higher education reflect the increasing social embeddedness of institutions within a multitude of communities. The implications for higher education arise from the expectations that higher education should be more visibly useful for economy and society, though this usefulness may apply to both global and regional/local levels with a different emphasis for different institutions and the basic units within them..

Features of HEIs relevant to Regional Engagement

HEIs - Three main roles

It is common today to distinguish between the three roles of **teaching, research and knowledge transfer** in considering the work of HEIs. For each of them, it is important to be aware of history, of diversity, of boundaries, and of stakeholders.

While the **teaching** function is the longest established and the most universal role of higher education, there is growing differentiation and diversity in the forms that it takes as well as in its intended beneficiaries. Regarding the **research** role, it is necessary to consider its importance to both the individual and the institution and how it is managed and rewarded including the balance between autonomy and responsiveness, the balance and relationship between individual and collaborative work, the extent of boundary crossing between disciplines, institutions and professions, where the work takes place and the nature of its outcomes, the audiences to which it is directed, the impacts it makes, the ways in which it is assessed and rewarded, and the relationship it has with the teaching and knowledge transfer functions of higher education.

Features of HEIs relevant to Regional Engagement

HEIs - Three main roles ... cont.

The notion of '**knowledge transfer**' is sometimes referred to as the '**third mission**' of higher education and this reflects its relatively recent arrival as an identifiable role of higher education, although not dissimilar functions can probably be identified in the long histories of higher education institutions. Here, the emphasis is less about the production of new knowledge and more to do with the application and utilisation of existing knowledge. Although much of the focus of knowledge transfer has been given to the application of scientific knowledge to societal developments of potential economic significance, there is in fact much greater diversity in practice with universities engaging with public institutions of various sorts – in education, health, governance etc. – with teaching-linked activities including workplace learning, graduate start-ups and a variety of entrepreneurial endeavours sitting alongside more applied research functions.

The Role of HEIs in the Innovation Chain

RIS3 is about growth through innovation.

HEIs play a central role in the innovation ecosystem – from human capacity building through to generation of knowledge and innovation. Apart from basic research, typically researchers in HEIs produce innovation to the point of proof of concept, while researchers in ROs may produce innovation to the point of demonstration and/or prototype development. HEIs (and Ros) which have at least some pockets of excellence will influence in a positive manner the environment in which they operate, attracting and nurturing talent, including entrepreneurial talent. An average department or research group in an institution with a ‘brand name’ associated with excellence benefits from what can be called an “aura-effect”. Simultaneously, the same effect attracts businesses and entrepreneurial activity, all of which contribute to RIS3.

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

Based on their origin, we may identify three major types of innovation:

- Scientific innovation, based on knowledge generated by scientific and/or scholarly research.
- Empirical innovation, based on intuition and previous practical experience. Empirical approaches are usually very focused and specific but may have useful economic consequences.
- Social innovation, originating from social needs and experiences (e.g. working conditions, immigration, distance learning, community development and health). Social innovation can generate indirect economic benefits by countering the costs associated with acute and/or chronic societal problems.

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

Although HEIs may address the full spectrum of innovation types, their main contribution is in scientific innovation. In this context we may distinguish three types of scientific innovation:

- Innovation produced as a result of demand driven research, which is primarily transactional and covers current needs of society, companies, and markets (e.g. methodologies for improving existing manufacturing processes). This is commonly understood as market-based innovation and, being readily identifiable, usually attracts the bulk of attention. Ample mechanisms exist in promoting the role of HEIs and ROs in this type of innovation.

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

Although HEIs may address the full spectrum of innovation types, their main contribution is in scientific innovation. In this context we may distinguish three types of scientific innovation – cont.:

- Supply-side innovation, including that resulting from curiosity-driven research, basic (blue sky) or applied. This has a potential transformational character that may define and/or address needs and delineate future markets for products and services. The potential economic impact of this type of innovation may not be immediately obvious. Recent history, however, shows that exploitation of this innovation creates the ‘protagonists’ of tomorrow. For example, the origins of the Internet lie in supply-side innovation developed at CERN in the interests of particle physics research.

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

Although HEIs may address the full spectrum of innovation types, their main contribution is in scientific innovation. In this context we may distinguish three types of scientific innovation – cont.:

- Innovation resulting from policy-led research (regional, state, EC) aiming to resolve major societal challenges (e.g. demographic problems, climate change) or to meet specific goals (e.g. innovative spin-offs from space programmes).

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

The innovation chain comprises a dynamic linking between basic and applied research. Examples include advances in quantum physics, electromagnetism and nuclear physics that had pronounced economic impact in microelectronics, telecommunications, and the nuclear power sector. More specifically, concepts of quantum physics developed early in the last century, of no direct use at that time, led to the creation of lasers and the thriving field of photonics (displays, solid state lighting, sensors) which have multiple applications of high market value nowadays (e.g. mobile phone technologies). Along these lines, the Key Enabling Technologies (KETs) (nanotechnology, photonics, biotechnology, advanced materials and manufacturing processes) as well as ICT, play prime roles in contemporary scientific innovation.

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

Industry-led initiatives for **Open Innovation**, leading to open and interoperable solutions that exploit ICTs and drive value creation across all sectors are supported by the EC. Open Innovation is defined as “the use of internal and other companies' ideas to develop new businesses”. ICTs catalyse changes in the innovation chain by facilitating early involvement of end-users and Open Innovation. Five key elements in the Open Innovation process could be observed, namely: **networking**; **collaboration** among all stakeholders; **corporate entrepreneurship** (e.g. through start-ups and spin-offs); proactive **Intellectual Property Management** and creating markets for technology; and **R&D** as a means to achieve competitive advantage. HEIs which are deeply involved in this process can better serve the regional and national development through RIS3 design and implementation.

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

Open Innovation accelerates the exchange of knowledge and technology transfer not only between HEIs, ROs and companies, but also among the regions. For instance, the ultimate goal of the inter-regional cooperation programme EURIS was to help regions to embrace Open Innovation, to provide specific regional recommendations for the improvement of RIS3 and to draw general policy recommendations dedicated to regional, national and EU policy makers.

Open Innovation is a core concept embedded in a number of current innovation infrastructures, such as: **Living Labs, Smart Cities, Clusters, Technology/Science Parks.** As an example, Living Labs provide an open innovation infrastructure embracing all innovation stakeholders (end-users, companies, HEIs, ROs, community, developers, local and regional authorities) that are involved in the whole innovation chain for development of innovative products and services. Within the new networked economy, communities and local innovation infrastructures are supposed to play a substantial role.

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

HEIs and ROs enable advanced knowledge creation and dissemination through their scientific interactions and networking activities. The exploitation of newly created and often advanced knowledge enhances the probability of innovation and may have strong economic impact at its intersection with selected growth axes (e.g. agrofood, tourism and culture, energy, etc.) of regional economies. Furthermore, this knowledge may itself produce new axes for regional development. This is part of the design of the “entrepreneurial discovery process” for RIS3 as well as its successful implementation.

In conclusion, the transformational impact of RIS3 on regional economies relies to a large extent on the central role of HEIs, supported by ICTs, in the full range of the innovation chain.

The Role of HEIs in the Innovation Chain: Types of Innovation and the Innovation Chain

Existing EU initiatives for R&I capacity building offer significant bridgeheads for HEIs and ROs in RIS3 as well as synergies between cohesion and research funding. Notable among these are (European) Research Infrastructures (RIs) and RPFs, which can be hotspots facilitating the formation of regional hubs where good science, technology, talent and entrepreneurship may cluster and have a significant socio-economic regional impact, thus promoting the goals of RIS3 as well as linking regional and European R&I resources. Those HEIs or ROs which form the nuclei of RIs therefore have key roles in RIS3. Other capacity building initiatives which may provide bridgeheads for HEIs and ROs in RIS3 are the Research Potential (REGPOT) and Regions of Knowledge programmes under FP7, which dovetail with new initiatives under Horizon 2020 aimed at upgrading existing or creating new high quality research institutions in low performing RDI Member States and regions: ERA Chairs, Teaming and Twinning. A critical element for successful synergy between the above initiatives with RIS3 is the impact of recent developments in ICTs and the emerging digital research and innovation environment. HEIs and ROs are well placed to act as enablers in utilising ICT tools and the associated transformational potential of knowledge and information flows from and to the region.

Connecting Universities to Regional Growth

... Investment in people development within the university and its regional partners will be critical, as the kinds of skills needed to undertake these transformational programmes are often in short supply, especially in less favoured regions. Leadership and boundary spanning skills are essential, as well as capacity to critically assess progress (both internally through self evaluation and externally through expert peer review processes)...

Connecting Universities to Regional Growth

Why universities are important for regional development?

At the most basic level, universities can be anchor institutions in local economies as major employers across a wide range of occupations, purchasers of local goods and services, and contributors to cultural life and the built environment of towns and cities.

Regional investment in the infrastructure of a university to support its core business of research and teaching can therefore have a significant passive regional multiplier effect even if the university is not actively supporting regional development.

Connecting Universities to Regional Growth

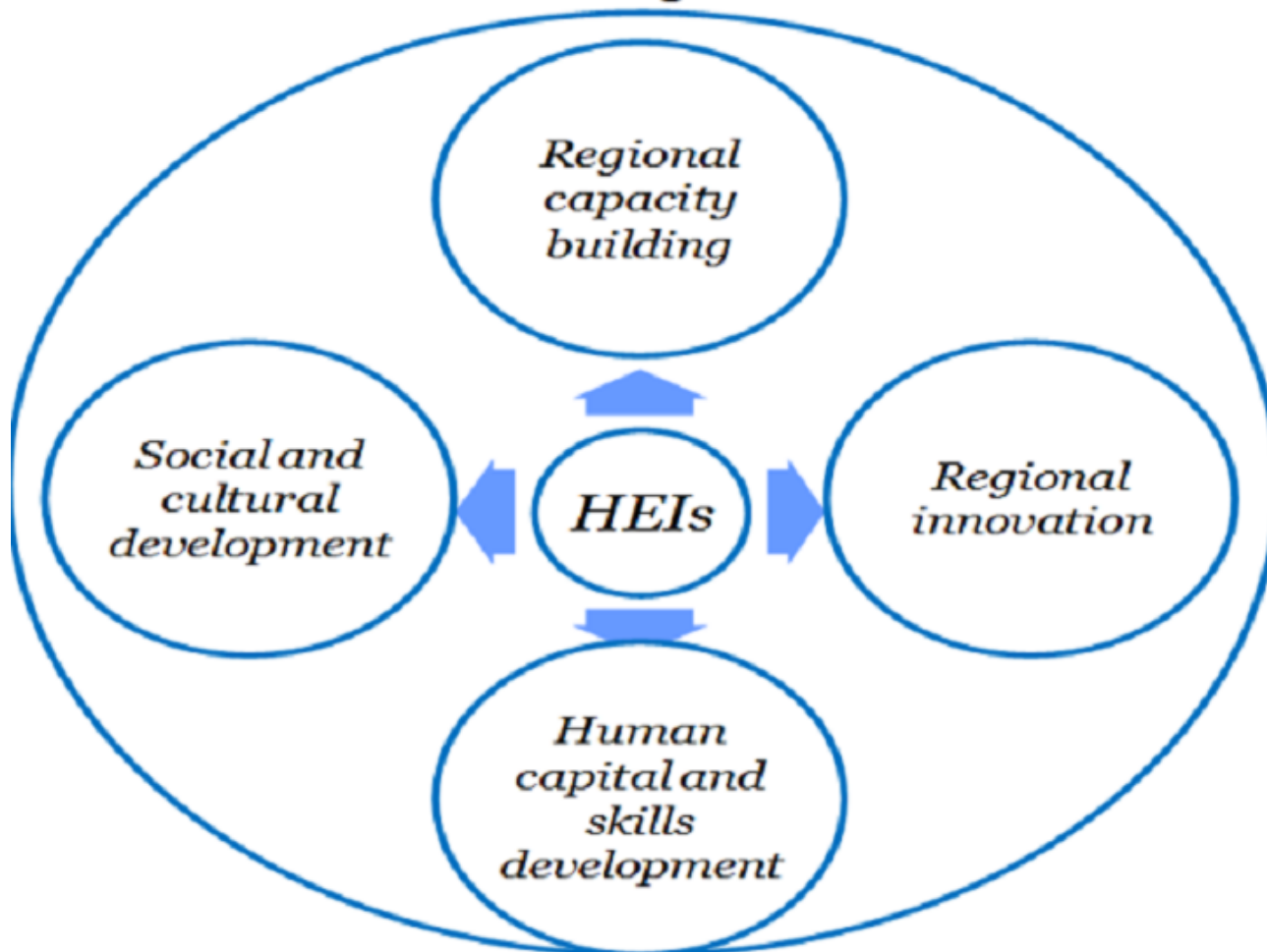
What of the more active contributions that universities can make?

This can be broken down into four areas:

1. Business innovation which is closely linked, although not exclusively, to the research function of the university;
2. Human capital development linked to the teaching function;
3. Community development linked to the public service role of universities;
4. The contribution of the university to the institutional capacity of the region through engagement of its management and members in local civil society.

Connecting Universities to Regional Growth

National and regional context



Opportunities & Challenges for HEIs in RIS3

Clusters & Technology Platforms

Grouping HEIs with companies in 'clusters' can be an effective means of promoting interactions and translating intellectual and scientific potential into commercially successful new products and services. Such clusters may help in overcoming the obstacles involved in the innovation chain and may therefore contribute to the success of RIS3. Particular features of innovation clusters are their thematic focussing and geographic proximity.

Clusters are defined by the co-location of producers, service providers, educational and research institutions, financial institutions and other private and government institutions related through linkages of different types (European Commission 2007). There is huge diversity among clusters: they differ in terms of their stage of development along the cluster life cycle; some are networks of SMEs, some are organized around key anchor firms, and yet others have developed around HEIs.

Opportunities & Challenges for HEIs in RIS3

Clusters & Technology Platforms ... cont.

Regional or national clusters may operate at a national level as technology platforms, and may be linked at a European level forming transnational technology platforms. Along these lines, European Technology Platforms (ETPs) are industry-led stakeholders fora that develop short to long-term research and innovation agendas and roadmaps for action at EU and national level to be supported by both private and public funding. ETPs span a wide range of technology areas and have to date played an important role by developing joint visions, setting Strategic Research and Innovation Agendas and contributing to the definition of the research priorities including those under the Research Framework Programmes. In ETPs, SMEs from different regions may come together with large corporations, HEIs and ROs forming part of the linking process .

Opportunities & Challenges for HEIs in RIS3

Clusters & Technology Platforms ... cont.

ETPs are key elements in the European innovation ecosystem. They develop strategies and provide coherent business-focused analysis of research and innovation bottlenecks and opportunities related to societal challenges and industrial leadership actions. They can mobilise industry and other stakeholders within the EU to work in partnership, share information, enable knowledge transfer and deliver on agreed priorities. ETPs are independent organisations, some of which form nowadays Public-Private Partnerships (PPPs). Furthermore, several Member States have established national technology platforms which mirror ETPs for building capacity and enabling their research communities to influence and participate in European activities, or to align their thematic activities with a shared strategic vision. Due to their features, national and European technology platforms may have an important role in realizing the goals of RIS3 in scaling-up processes from regional to national and international levels.

Opportunities & Challenges for HEIs in RIS3

Characteristics of potentially successful HEIs in RIS3

HEIs engaging in RIS3:

- are aware of the policy framework with regard to smart specialisations; they know and understand how this framework applies at various levels: local, regional, national, European
- explicitly and actively address regional development in their core institutional mission and include regional development aspects in their strategic development plans. They include regional stakeholders in the process of developing their overall institutional strategies
- include regional engagement aspects in their institutional evaluation policies and processes, along with the evaluation of teaching / learning, research, and broad contribution to the society. They have adopted specific indicators, metrics, to assess success in regional engagement.

Opportunities & Challenges for HEIs in RIS3

Characteristics of potentially successful HEIs in RIS3

HEIs engaging in RIS3 – cont.:

- develop effective partnerships: are able to select the right external partners for RIS3; develop appropriate infrastructures and processes to sustain effective communication and coordination with these partners
- identify, in cooperation with other partners, distinct regional features that support smart specialisations initiatives
- are not ancillary partners in RIS3, but play a key role, from the design to implementation and assessment
- have internal organisational and governance structures specifically designed to promote regional engagement. Employ specialized staff with appropriate training and responsibilities inside the organisation. Have an internal, adapted system of incentives to promote engagement in regional development efforts
- address matters of regional engagement/RIS3 based on a concern for sustainability, as opposed to an attitude driven by the availability of individual project funding
- pay special attention to the use of ICT as part of their regional engagement strategies and activities
- do not compromise on other institutional functions that are not relevant for RIS3.

Opportunities & Challenges for HEIs in RIS3

The concept of entrepreneurial university and RIS3

The concept of entrepreneurial university has been frequently used in the last 10-15 years to inform the discussions about the role and mission of universities in face of new external pressures and expectations. The concept has rapidly evolved in time, acquiring multiple meanings and uses. At present there is no one single model of entrepreneurial university in the world. Rather, several models co -exist, with different, although at least partly overlapping, characteristics. The concept has also found its way into the higher education policy reflection of the EU Commission. For example, in 2012 the Commission published a document jointly with OECD (A Guiding Framework for Entrepreneurial Universities), which acknowledges that there should not be one single model of entrepreneurial university in the EU. At the same time, however, the document outlines a guiding (that is, normative) framework to help interested universities assess the extent to which they are “entrepreneurial universities”. The framework is organized in seven areas, each operationalized into a small number of desirable institutional characteristics.

Opportunities & Challenges for HEIs in RIS3

The concept of entrepreneurial university and RIS3

Some of the characteristics most frequently mentioned in the literature on entrepreneurial universities, and which are also of interest in the context of smart specialisation strategies, include:

- innovation through research, knowledge exchange, new attitude to teaching and learning, new governance models, new approaches to external relations (EU Commission, OECD, 2012);
- entrepreneurialism in research universities; productivity of knowledge transfer offices; new firm creation; new environmental context, including the development of networks of innovation (Rothaermel, Agung et al. 2007).

Researchers and policy makers also mention economic development and sometimes regional economic development specifically, as a core function of the entrepreneurial university. This function is to be achieved by HEIs through technology transfer based on R&D in high technology, by assuming the role of a major source of knowledge for the industry. Entrepreneurial universities are also conceived as a key element in the transition from “close innovation” to “open innovation” (Rothaermel, Agung et al. 2007).

The role of HEIs in RIS3

- HEIs promote the goals of RIS3 by placing emphasis on the quality of research and capacity building. Research intensive establishments, by expanding their research capacities, may enable spatially relevant knowledge generation, absorption, and spill-overs.
- HEIs which have at least some pockets of excellence will influence in a positive manner the environment in which they operate, attracting and nurturing talent, including entrepreneurial talent. An average department or research group in an institution with a ‘brand name’ associated with excellence benefits from what can be called an “aura-effect”. Simultaneously, the same effect attracts businesses and entrepreneurial activity, all of which contribute to RIS3.

The role of HEIs in RIS3

- The development of “locally-based” Technoparks, including thematic clusters and networks having in their centre high quality HEIs, as well as financial (private and/or public) and other supporting agencies may provide the most conducive environment for RIS3. Clusters are particularly successful for knowledge spill overs when HEIs, ROs and innovative companies are geographically concentrated.
- As sources for knowledge creation, dissemination and also as institutions of knowledge absorption, HEIs can be key actors in the entrepreneurial process of discovery/learning process for establishing RIS3 that reveals the strengths of a region’s assets and knowledge base and associated potential for innovation-based growth.

The role of HEIs in RIS3

- Through their research and international links they may provide and collate information about emerging technological opportunities, products, processes and standards, as well as assess the barriers for their adaptation in the local economy, as required by RIS3. By the same token they may act as channels for scaling-up from regional activities to national and international environments. They are also main contributors to the development of skilled human capital which is a key driver for realizing the objectives of RIS3. RIS3 requires prioritization of new initiatives and balanced considerations of what to leave intact. Its implementation takes place through proactive policies which exploit emerging promising tendencies, instead of responding to market failures. Interventions of HEIs in realizing such policies are also important considering the rapidly changing research environment, marked by the emergence of new disciplines and technologies, especially those of interdisciplinary nature which require shifting capacity.

The role of HEIs in RIS3

- HEIs can contribute to the design phase of smart specialisation strategies by an evidence-based assessment of the region's knowledge capacity, competencies and potential, including those existing within their own institutions, as well as in local companies. They can help to identify research areas with significant competitive advantages at a national or regional level, and contribute to strategic prioritization and policy formulation. In the implementation phase, HEIs can focus on adaptations and developments contributing to the sustainability of RIS3 objectives as the growth strategy matures. HEIs can also build long term capacity within the region to effectively capitalize on the regional smart specialisation strategies through their education and training functions and interdisciplinary research capacity.

The role of HEIs in RIS3

- High quality research environments are a precondition for high calibre knowledge creation, knowledge transfer and knowledge absorption. Such environments increase the probability for effective expansion of the existing academic base into spatially (regionally) relevant knowledge creation and spill overs for regional economic transformation. In this sense, Smart Specialisation is served by an expansion process of existing high quality environments. HEIs and ROs, through RIS3, favour a dynamic process of knowledge transfer and adaptation to the region and from the region to other regions.

The role of HEIs in RIS3

What are the expected benefits and unwanted consequences?

- The involvement of HEIs and ROs in RIS3 is an effective pathway for increasing their regional engagement and in this way amplify their socio-economic contribution on a sustainable basis. As a result, their position in local societies is improved and their opportunities for a diversification of funding basis are enhanced.
- Considering that the effectiveness of HEIs' and ROs' role in RIS3 depends strongly on their overall research quality, with the appropriate policy mix the broader pursuit of academic excellence may be served through their involvement in RIS3. For example, resources from sub-critical areas may be freed through the concentration and strengthening of proximate scientific domains. Also, through linking up processes expected from HEIs and ROs in RIS3, their exposure to international competition is increased, thus potentially contributing to raising standards.
- Entrepreneurial talent existing in the academic community may discover new opportunities through RIS3 (e.g. by creating spin out companies). Simultaneously, the scientific talent in HEIs and ROs may benefit from positive feedbacks from RIS3. The concept of “excellence attracts excellence” may operate.

The role of HEIs in RIS3

What are the expected benefits and unwanted consequences?

- HEIs and ROs need to avoid the risks that may result from a skewed understanding and implementation of RIS3. The idea of “concentration” of resources is inherent to the idea of critical mass building as required by smart specialisation. This may have the counter effect of uneven spatial division of scientific labour and resources in HEIs and ROs, with negative effects for the goals of RIS3.
- Overspecialisation may lead to lock-ups of skilled human potential and thus narrow the pool for talent and resources in HEIs and ROs, reducing their ability for flexible responses and undermining their potential for new innovation to emerge.
- Overall, Establishing a visionary policy mix, together with effective governance for the implementation of RIS3, can minimize the impact of such undesirable side effects. A healthy entrepreneurial culture may be cultivated and augmented in high quality academic and research environments leading to effective initiatives and synergies for the benefit of a region/country through the involvement of HEIs and ROs in RIS3.

The role of HEIs in RIS3

How to realize this role?

Regional smart specialisation strategies envisage a role for key knowledge producers –higher education institutions (HEIs) and research organisations (ROs) – in the strategy design, implementation and capacity building. While HEIs form an economic sub-system in their own right that builds the long term knowledge base in the regional, national and European economy, they can also play an important role in the RIS3. The same applies to ROs which often, by their organisation and structure, may have a direct role to play in RIS3.

The extent to which knowledge producers are engaged in regional RIS3 or more generally in regional development – human capital and skills development, knowledge transfer, innovation and enterprise formation and wider community development – depends on the policy context at the national, regional and institutional level. The key policies relate to financing, regulation and governance. Although RIS3s are context-specific there are common issues which have implications for policy development. This section concludes with pointers for policy development in the EC, national and regional governments and HEIs/ROs.

The role of HEIs in RIS3

How to realize this role?

Some of these pointers are of general significance for engaging HEIs in regional development (which is a prerequisite for RIS3) and others are more specific for establishing and realizing RIS3. The key pointers for future focus are:

- Strengthening collaborative mechanisms, e.g. between HEIs, industry, public sector and society.
- Integrating HEIs in the policy making process including the RIS3 strategy.
- Targeting incentives to HEIs to collaborate with industry.
- Stimulating private investment in R&I actions for RIS3
- Enhancing institutional autonomy of HEIs, including budgetary resources.
- Ensuring institutional flexibility of HEIs and ROs, e.g. provide incentives for regional HEIs to meet the regional long term and short term needs.
- Stimulating effective use of ICTs (Digital Science, Digital Education, Digital Administration, Open Innovation and Digital Entrepreneurship) at all levels: European, national, regional, institutional (HEIs) in the context of RIS3.

Main sources (pdf available):

1. Guide to Research and Innovation Strategies for Smart Specialisation (RIS 3) May 2012
2. The role of Universities and Research Organisations as drivers for Smart Specialisation at regional level, EUROPEAN COMMISSION, Directorate-General for Research and Innovation, Directorate B — Innovation Union and European Research Area, Unit B5 – Spreading Excellence and Widening Participation, Brussels, 23 January 2014
3. The role of universities in Smart Specialisation Strategies, European University Association asbl · Avenue de l'Yser 24 · 1040 Brussels, Belgium, EUA Publications 2014

Thank you for your attention!