Regional Innovation Ecosystems and Research Universities

Robert Tijssen
Leiden University, Netherlands

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* With contributions by Koen Jonkers (EC-JRC, Brussels)
Analytical framework

Smart Specialisation

Regional innovation impact of research universities

Adapted from: Krammer (Technological forecasting and Social Change, 2017)
‘Smart specialisation’ as strategic policy driver

• With the rise of the (European) policy concept ‘smart specialisation’ in the 1990s, many major cities and regions have started to develop their own socioeconomic development strategies.

• Increasingly, these regions look upon their local higher education sector as a high-value asset to be exploited for further economic development of the region, in terms of education and training, attracting and retaining talent, and RDI.

• Policymakers and government officials expect their universities to impact significantly on the local economy.

• Although convincing information about those impacts is scarce, many ‘entrepreneurial’ or ‘innovative’ universities can now boast on mission statements, strategic plans and organizational changes specifically geared towards creating or sustaining such regional benefits.
Need for ‘360 degree’ regional innovation impact assessment of universities

• How embedded is the university in the local innovation system?

• How does the university impact on, or co-develop, that system?

• Does the university contribute to diversifying the knowledge portfolio and infrastructure’?

• Does the university contribute to the (further) integration into a domestic or international R&D communities or networks?

• Does the university contribute to a more vibrant sociocultural environment?

• Does the university contribute to job creation and upgrading the economic structure and performance?
HEInnovate online questionnaire for university executive self-assessments

https://heinnovate.eu/en)
How innovative is your higher education institution?

Being an entrepreneurial higher education institution depends upon individuals, and innovative ways of doing things.

HEInnovate is a self-assessment tool for Higher Education Institutions who wish to explore their innovative potential. It guides you through a process of identification, prioritisation and action planning in seven key areas. HEInnovate also diagnoses areas of strengths and weaknesses, opens up discussion and debate on the entrepreneurial / innovative nature of your institution and it allows you to compare and contrast evolution over time. You can have instant access to your results, learning materials and a pool of experts.

The European Commission and the OECD have joined forces in the development of HEInnovate. It is free, confidential and open to anyone to use. HEInnovate can be used by all types of higher education institutions. This website offers more than just an interactive tool; it also contains case studies, user stories and supporting material to help you to design solutions tailored to your needs. Read more
Questionnaire is grouped in the following dimensions and corresponding sets of questions:

- Leadership and governance
- Organisational capacity
- Entrepreneurial teaching and learning
- Preparing and supporting entrepreneurs
- Knowledge exchange and collaboration
- The internationalised institution
- Measuring impact
Leadership and Governance

Strong leadership and good governance are crucial to developing an entrepreneurial and innovative culture within an HEI. Many HEIs include the words ‘enterprise’ and ‘entrepreneurship’ in their mission statements, but in an entrepreneurial institution this is more than a reference. This section highlights some of the important factors an HEI may consider in order to strengthen its entrepreneurial agenda.

Questions:

1. Entrepreneurship is a major part of the HEI’s strategy
2. There is commitment at a high level to implementing the entrepreneurial agenda
3. There is a model in place for coordinating and integrating entrepreneurial activities across the HEI
4. The HEI encourages and supports faculties and units to act entrepreneurially
5. The HEI is a driving force for entrepreneurship and innovation in regional, social and community development
The HEI is a driving force for entrepreneurship and innovation in regional, social and community development.

An HEI can play several roles in its community and wider ecosystem. One of the key functions of an HEI is to support and drive regional, social and community development.

To score highly, an HEI could, for example:

- Be actively involved in the development and implementation of the local, regional and / or national innovation and entrepreneurship strategies
- Provide general access to the facilities of the institution to others in the wider community
- Support start-ups and / or established companies in the region to enhance innovation and growth
- Have a strong presence in its communities, for example, by supporting local cultural and artistic activities
“The EU could offer top-up institutional funding tied to modernization and innovation performance”

(Lamy et al., 2017)

Additional performance-based institutional funding stream, to support institutional modernisation in terms of flexibility, user engagement and openness
Potential approaches to assess the innovation impact of universities
Knowledge creation
Provision of leadership
Knowledge infrastructure
Social environment

Human capital creation
Transfer of existing know-how
Technological innovation
Capital investment

Increase capacity for development
Regional creativity
New business start-ups
Productivity gains
Business innovation
New business start-ups
Direct and indirect spending impacts

Source: adapted from Goldstein and Renault (2004)
Tailor-made RI²A profiles contribute to university-level ‘narrative with numbers’ case studies and performance assessment.
RI²A framework may assist universities to:

- Self-assess absolute innovation performance
- Self-assess performance relative to regional performance
- Self-assess performance with respect to pre-determined objectives
- In-house monitoring of performance progress
Developing the RI$^2$A Framework
General methodological considerations

- Involvement of key internal and external stakeholders
- University-driven customization; no ‘one-size-fits-all’ model
- Involve international expert review panels to assess submitted ‘case study’ material from universities
- No trade-off between (EC) research funding and (EC) innovation funding
- Start with pilot case studies, and refine the assessment system progressively
Fictional case study: University Alpha

"The university generated 25% of the funding of its R&D projects through contracts with regional firms in 2010-2015 – up from 20% in 2005-2010."

"University Alpha’s technology transfer office had a total turnover of €240 million in 2016.

"University Alpha plays a constructive role in the development of innovation policy in region Alpha by actively collaborating with the local government, amongst others with respect to designing a new policy for high tech clusters.

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Transferred knowledge as an engine for innovation and growth.

Research in the Department of Engineering made it possible to design a 3D compressor blade as a single component. Blades designed using the research results yielded fuel efficiency improvements of about 1% when deployed in aircraft engines manufactured by a worldwide known company. The efficiency improvements in engines have delivered significant savings in CO₂ emissions and in fuel costs. The demand for this new technology engines increased in recent years. The orders the company received during the assessment period are estimated to be worth more than 20 billion Euros at list prices.

"In the period 2010-2015, University Alpha trained 40 industrial PhDs - 10% of all graduated PhDs."

Vision & Strategy: The university’s most recent ‘Strategic Plan 2016-2020’ states: “... aims to become a global innovation leader by 2020, delivering world class solutions and providing a greater contribution to the economic growth of its region.”
2018 activities

Rationale

• Test the RI²A framework in real-life, analyse the findings and draw lessons for possible upscaling and large-scale implementation

Pilot case studies of universities in Europe

• with an existing strong local/regional focus
• who aim to strengthen their local/regional focus
• with an interest to learn more about, and self-assess, their local/regional activities and impacts

Approach

• Invite individual universities to apply the model to their own organisation and produce a RI²A ‘showcase’ report for EC/JRC