Higher Education Institutions and Regional Engagement: what, why and how?

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As important knowledge organizations, universities and other higher education institutions can play a key role in driving growth and development in their cities and regions. This article highlights the content and meaning of this role, the benefits of regional partnerships for both a higher education institution and the city/region in which it is located and the way for a higher education institution to embark on a journey of institutional transformation and become an engaged institution with an active role in local and regional development. Using examples from different countries, the article highlights practical approaches that higher education institutions have taken in their cities and regions and outlines the ten necessary steps for developing and implementing an engagement strategy and a regional partnership.

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1. What is HEIs' regional engagement and why is there a renewed focus on it?

1.1 What is higher education regional engagement?

HEIs' regional role has a long roots

Regional engagement of universities and other higher education institutions is nothing new. For the past 150 years or so there have been many examples of higher education institutions which serve the needs of their regions and boost the economic and social development of the places where they are located in. Seminal examples include the land-grant universities and colleges which were established to produce useful knowledge and education opportunities in the United States as early as the 1860s.[1] Later the experience of Silicon Valley in California and Route 128 in New England in creating high tech industries and regenerating regions with the help of university expertise has influenced cities and regions as well as universities across the world.[2] With the massification and expansion of higher education in the past decades, new types of institutions have also been established to address regional disparities and widen participation. At the same time, older institutions as well have been called upon to play an active role in socio-economic development.

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[1] Land-grant university or college is an institution of higher education in the United States designated by a state to receive the benefits of the Morrill Acts of 1862 and 1890. The Morrill Acts funded educational institutions by granting federally controlled land to the states for them to sell to raise funds to establish and endow "land-grant" colleges. The institutions focus on the teaching of practical fields, such as agriculture, science, military science and engineering to address industry and societal needs in contrast to traditional focus of higher education on an abstract liberal arts curriculum. Land-grant institutions are often categorized as 1862, 1890, and 1994 institutions, based on the date of the legislation that designated most of them with land grant status. Ultimately, most land-grant colleges became large public universities that offer a full spectrum of educational opportunities. Some land-grant colleges are private schools (e.g. Cornell University and the Massachusetts Institute of Technology).

[2] Route 128 is a partial beltway around Boston, Massachusetts which is also used to refer to the high-technology industry that developed from the 1960s to the 1980s in the suburban areas along the highway.

On a theoretical level, there are basically four different ways that higher education institutions can contribute to the development and economic growth in their regions. First of all, higher education institutions develop (regional) human capital and skills. They also enhance innovation through research activities. They can promote enterprise and business development and growth, and finally, they can improve environmental and social conditions through contributing to urban regeneration and cultural activities. The regional development activities of higher education institutions therefore take many different forms depending on the institution and its operational environment, encompassing human capital and skills development, research and development (R&D) co-operation, entrepreneurship and knowledge transfer, and broader civic engagement or even local and regional leadership.

Four main ways to contribute to regional development

Universities and other higher education institutions are increasingly faced with growing expectations to drive socio-economic development in their cities and regions. Many higher education institutions have responded to the new demands and have developed policies, activities and services that address the needs of industry and the local community. These often take the shape of fixed-term, output-driven activities and transactional services which involve short-term activities in response to clearly articulated external demand but also more transformational activities that have been developed to bring long-term benefits to the region for example in the shape of building a new knowledge-based industry.

Growing expectations, increasing action

	'Transactional' services	Transformational activities
Type of need / demand	stated need or demand	lat ent or unstated needs
Type of approach	*output driven appro ach*	*outcome driven approach*
Type of objectives	dear objectives	less explicit objectives
Link to time	usually time bo und	less clear timelines

Table 1   **Transactional vs. Transformational interventions (EU 2011, Connecting universities to Regional Growth. A Practical Guide. European Union. Regional Policy)**

1.2 Why the renewed focus on regional engagement of HEIs?

The policy context in Europe and many countries elsewhere has changed to emphasize the role of higher education in regional development. The regional policy focus has shifted from reducing regional disparities within a country towards skills development, innovation

Territorial development policies stress the importance of HEIs

and entrepreneurship with emphasis on indigenous development of cities and regions. This policy shift has significantly emphasized the importance of higher education institutions as a driver of regional growth and development. At the European level, using "smart specialization" strategies as an ex-ante conditionality for the European Structural and Investment Funding (ESIF) has emphasized the importance of local partnerships between higher education institutions, public sector and industry.[3]

Higher education policies seek for more active HEIs

Higher education policy responses have focused on university-business collaboration, technology transfer and technological innovation and increasingly also on policies targeting social innovations and innovation in the public sector. The concern of the OECD and European Commission about the rampant youth unemployment has highlighted the need for skills development at the regional level. Despite these efforts, national higher education policies in many countries continue to focus on technology transfer, spin-offs and R&D cooperation, whereas less attention is given to the alignment of teaching and research with the regional needs.

1.3 A focal theme of many studies

The contribution of higher education institutions to regional development is also back in the loop because it has been a focal theme of many studies in the past years. Numerous reviews, reports and projects have investigated the role of higher education institutions in the human capital and skills development, research and innovation, knowledge transfer and civic engagement. For example the OECD Reviews of Higher Education in City and Regional Development investigated the role of the higher education systems in regional and city development in 35 cities and regions in Europe, North and South Africa, Asia, Africa and Asia in 2005-2013. [4] The OECD work contributed to a string of projects and publications such as the ESMU's European Drivers for a Regional Innovation Platform which focused on building capacity for collaboration between university and regional leaders

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[3] Smart specialization is a place-based development policy, which aims at concentrating scarce public resources on a limited number of strength areas and knowledge assets. Without an active role of higher education institutions, designing and implementing effective smart specialization strategies is difficult.

[4] The OECD work produced a flagship publication "Higher Education and Regions: Globally Competitive, Locally Engaged" (OECD, 2007) and over 30 city-/region-specific review reports with practical recommendations to higher education institutions as well as national and regional policy makers. For city- and region-specific review reports see OECD iLibrary: www.oecd-ilibrary.org and search for "higher education in regional and city development."

(ESMU, 2011) and the EU Guide Connecting Universities to Regional Growth (European Commission, 2011) which targets regional development agencies in order to unleash the potential of higher education for regional development. The European Commission Modernisation of Higher Education Agenda for 2011-2020 has a focus on issues such are the Knowledge Triangle i.e. the interplay between education, research and innovation particularly at the regional level. In 2013, the European Commission General Directorate for Research and Innovation (EC DG R&I) expert group investigated the Role of Universities and Research Organizations as Drivers for Smart Specialization at Regional Level (Fotakis et al., 2014).

2. Why local partnerships make sense?

The regional development role of higher education institutions is increasingly being delivered in partnership with cities and regional development agencies. These partnerships make sense because they are based on a shared interest, win-win collaboration and a recognition of mutual benefits.

Win-win collaboration

Benefits for higher education institutions

- Funding and partnership opportunities for R&D and teaching

- Income from services to local businesses through consultancy and professional training

- Resource-sharing opportunities: infrastructure and knowledge workers

- Increased enrolments from the local population

- Social capital support

Benefits for cities and regions

- Generation of tax and other revenues

- Global gateways to attract talents and inward investment

- New businesses generated by HE staff and students

- Advise and expertise

- Enhanced human capital through graduate retention, professional continuing education and lifelong learning

- Content and audience for local cultural and sports programmes

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2.1 Why local partnerships with cities and regions make sense for higher education institutions

Multiple benefits for HEIs

From the perspective of universities and other higher education institutions, the local and regional engagement can bring a number of benefits. A thriving city or a region creates an environment in which higher education can also thrive, helping higher education institutions to attract and retain talented staff and students. The city or a region brings business to the higher education institution in a variety of forms, including clients to research and development, consultancy and professional training. With the economic crisis since 2007 many governments have reduced public funding for research and education, and higher education institutions are increasingly seeking new funding opportunities in their regions or through collaborative activities with cities and regions. (OECD, 2013a).[5] Higher education institutions – and regional and local governments – are for example more interested in the resource-sharing opportunities which can range from shared knowledge workers to shared infrastructure. Stronger partnerships can also contribute to increased enrolments from the local population which is important particularly when public – and private – funding is connected to student numbers and when demographic trends are pushing enrolments downward. The local area or a region can provide higher education institutions with social capital support in the form of networks which are essential to build trust.

2.2 Why local partnerships with higher education institutions make sense for cities and regions

From the perspective of organisations which are promoting city or regional development, universities and other higher education institutions are important resources which can serve and boost local and regional development through their mere presence in the region or active engagement in regional and city development.

The presence of a HEI brings positive impacts

The mere presence of a higher education institution – just like any other organisation of a similar size – creates jobs for both local and non-local populations and contributes to the local tax revenues. Higher education institutions are major clients for local business and can boost the procurement from the local industry due to the construction, maintenance and running of higher education buildings and infrastructure. Higher education staff and students create demand for local businesses, many types of services and cultural and sports activities, con-

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[5] From 2009 onwards public expenditure on education dropped in one third of OECD countries. Between 2008 and 2010 the relative share of education budgets of total public expenditure started to fall in half of the countries

tributing to vibrant and active cities and communities. Given the recent move towards demand-driven education in countries such as Australia and England and the pressures to contract the higher education institution network in countries such as Finland, this impact cannot be taken for granted, even if labelled as "passive impact" in the research literature.

The 'active impact' of higher education institutions refers to the contribution that they make to the city's or region's comparative advantage by developing human capital and skills and knowledge-based industries. Universities and higher education institutions improve education attainment levels and skills in the region and can help create an economy that can absorb these skills. They enhance human capital through widening access and graduate retention, professional continuing education and lifelong learning. They also attract and retain talented individuals in the regions. They transfer knowledge to the regional labour market and industry through ongoing industry collaboration, collaborative research, patents and licenses. The higher education staff and students are also becoming increasingly active in generating new businesses, start-ups, spinouts and spinoffs. They provide content and audience for local cultural and sports programmes, and create "global gateways" to attract talent and inward investment and increasingly offer knowledge and expertise to the local and regional agencies and businesses.

Active impacts of HEIs improve skills and industry

3. What are the barriers preventing higher education institutions to play their local or regional role

Despite the obvious benefits of higher education institutions' active role in regional and city development, in many cases factors at the national, regional and institutional level can prevent or reduce the local and regional engagement of higher education institutions.

3.1 Barriers caused by policies

Incentives to promote regional engagement of higher education institutions tend to remain under-developed, especially in terms of funding. Some countries have developed legislation to boost the role of higher education institutions in knowledge transfer, exchange and partnerships, but core funding for higher education institutions does not usually support this purpose. Given the lack of funding for regional engagement, it is hardly surprising that many higher education institutions prioritize their national and international role.

Incentives for HEIs' regional engagement are limited

Public policies emphasize scientific excellence rather than local utility

Most national education policies focus on encouraging "scientific excellence" rather than applied research and skills development for local utility and needs. The reputation race and global rankings have caused governments to concentrate their investments in world class centres of excellence. In Europe, the EU instruments encourage research excellence which has led to the concentration of research funds in the most prosperous regions. At the national level, the lack of territorial dimension to higher education policy is often enhanced by the uncoordinated higher education, science and technology and territorial policy.

Higher education and science policies tend to marginalize HEIs' regional mission

The national higher education policies often treat regional engagement or business/community collaboration as a "third mission" or a task allocated only to a part of the tertiary education sector. In research-intensive institutions that pursue global excellence in basic research, any locally or regionally relevant activities – apart from industry collaboration with global firms – may be perceived as a risky diversion from internationally recognized research or simply a "third mission" which is marginalized from the core research or academic subjects. The academic community may also remain passive because regional engagement involves a risk for reputation, international collaboration and most importantly to personal career progress which is based on "research excellence" measured by publications. Polytechnics, universities of applied sciences or colleges are often closer to the needs of local firms and the SMEs, with a specific remit to serve a particular region, but tend to lack critical mass in R&D, which limits their capacity to contribute to the development of a new economic base or to renew old and declining industries. (Cf. also Goddard, Kempton & Vallance, 2013)

HEIs often lack scope of manoeuvre

Many governments have reformed their higher education systems in recent years in order to provide greater opportunities for the institutions to engage with their stakeholders and diversify their funding streams. These reforms are commendable as institutions need flexibility to run their increasingly complex business. However, often the governments have not awarded a full autonomy in the use of human, financial and physical resources, or in terms of mission, academic profile and programmes which limits the capacity of higher education institutions to align their education and R&D offer with the needs of the region. The national accreditation systems may also limit the ability of higher education institutions to respond to regional skills and socio-economic development needs due to a lack of focus on labour market relevance and the inability to properly evaluate or reward such focus in the academic setting and regulations which dictate the delivery and content in detail. In some cases higher education institutions have used their strengthened autonomy to resist the changes in their profile towards a direction that would support regional development.

Many regulations outside of education policy can act as a barrier to collaborative action and regional engagement and constrain the agility of higher education institutions to respond to regional needs or to collaborate with other education institutions. There can be barriers for example between different types of higher education – particularly vocationally-oriented and research-intensive – higher education institutions which undermine collaborative efforts of higher education institutions in a region. Typically such regulations related to public procurement or tax regulations.

Regulatory frameworks may act as a barrier

3.2 Barriers at the regional and city level

Higher education is seldom a competence of local government so the powers and authority of a city or regional government and development agencies may be limited to actively engage with the higher education sector. The lack of collaboration contributes to the lack of understanding of why or how higher education institutions can be important agents in economic development. The fragmentation of local governments in many countries further contributes to the lack of focus on the knowledge-based development of cities and regions. There may also urban/rural tensions that limit the ability of higher education institutions to effectively engage in the regional "knowledge triangle". In some cities and regions higher education institutions have a minimal role in local or regional skills development and innovation strategies. In some cases there may even be mutual "exclusion strategies" when higher education institutions exclude local or regional agencies from their own strategy development and the city or regional agencies do not take advantage of higher education institutions in the strategy development and implementations.

Formal collaboration at the city and regional level remains a challenge

Higher education institutions are usually better equipped to collaborate with bigger firms or knowledge-intensive spinoff with university roots. Most regional economies are, however, dominated – at least in terms of numbers – by small and medium-sized enterprises (SMEs) which in traditional industry tend to have a low demand for R&D. The low "absorption capacity" of local and regional firms effectively limits the development of R&D by higher education institutions for local utility. SMEs also face difficulties in accessing the higher education institutions' knowledge and expertise which are often fragmented across the institutions or simply articulating their demand for R&D because of an absence of representative bodies or industrial clusters. A lack of local supply networks in less advanced regions limits the opportunities through which new innovations could flow to transform and upgrade existing industries. Differences in the language, in the concept of time, as well as conflicts between industry secrecy re-

Local industry structures often limit the impact of HEIs' R&D activities

quirements and higher education institutions' need to openly publish the research results further limit collaborative research, even with the leading firms.

A narrow interpretation of smart specialization may limit the HEI's role

A smart specialization strategy implies that the scarce public resources and investment to support knowledge-based economic development are concentrated in targeted priority areas where they are likely to have the greatest impact. Regions developing smart specialization strategies must therefore prioritise specific R&D and innovation strengths in which they have potential to develop strong competitive advantages. The focus on the industrial capabilities requires a selective and "smarter" match with research capabilities which may not necessarily correspond to the leading areas of scientific strength in local higher education institutions. Higher education institutions and regions should establish how higher education institutions' diverse research base can contribute to long term regional development that underpins innovation through "spill overs" and supporting the uptake of facilitating technologies that can upgrade the existing industries. If smart specialization has been interpreted in a narrow way it can imply matching research fields to the current industrial profile which may lead to a "lock in" and "path dependence" in the region. (See also Fotakis et al,. 2014 and Puukka, 2014)

3.3 Barriers at the HEI level

Many HEIs have insufficient internal mechanisms to support regional development

Higher education institutions may lack the institutional autonomy needed to respond to regional opportunities and challenges because of their limited control over their governance, funding, facilities, senior academic appointments, human resources in general and the education offer etc. As a result, regionally relevant action is often not reflected in the institutional strategic development, internal budget allocation or curriculum development. Even in countries which allow flexibility in higher education institutions' funding allocation, some institutions have not developed strategic internal funding allocation which remains either historical or replicates the system of national funding allocation.

HEIs tend to be "loosely coupled" organisations, difficult to manage and lead

Though this is changing in many countries, higher education institutions are traditionally "loosely coupled" organisations with relatively weak central management capacity, a lack of co-ordination across faculties and different departments, and limited horizontal services that could support regional development. While this does not necessarily prevent individual departments or entrepreneurial professors from delivering their own activities and services, it does not facilitate institutional commitment and action which is expected by local and regional stakeholders. The all important local partnerships can also be confined to senior management or isolated entrepreneurial academics, but not scaled up at the institutional level.

Finally, intermediate organisations such as science parks and centres for continuing education, university-industry liaison offices and others, which have been specifically created to bridge the gap between higher education institutions and external stakeholders, can remain detached from the academic core of higher education institutions.

Gaps between intermediate organisations and HEIs reduce the role of HEIs

4. How to develop an institutional strategy for local and regional engagement?

Becoming an engaged higher education institution at the local and regional community is often a long journey; higher education institutions are often slow to change due to barriers and constraints which are often beyond their control. Some institutions – or their staff – may even be resistant to change in spite of policy incentives. For many different reasons institutions may view their national and international pursuits as more prestigious or simply just more important for their survival in an increasingly competitive environment. But to reap the benefits of partnerships and engagement at the local level, a change is necessary.

A necessary change …

Strategic collaboration between a higher education institution and its regional and local stakeholders implies balancing or shifting from the *ad hoc* one-on-one collaborations between individuals to collaborations between organisations whether public sector or business and industry. Often this implies a formalisation of the collaboration by creating a steering committee or a working group. Strategic collaboration also implies a move away from short term relations to long term partnerships and strategically oriented collaboration with coordination. The aim can be to coordinate existing and new collaborative projects, to achieve long term partnerships which are characterized by multidisciplinary action, greater commitment, shared responsibility and shared benefits.

From collaboration between individuals to institutional collaboration

Developing an institutional engagement role for a higher education institution with a focus on local and regional economic, social and cultural development, requires ten strategic steps:

Ten steps to forge the change

1. Institutional commitment

2. Needs assessment

3. Institutional capacity assessment

4. Institutional activity audit

5. Gap analysis

6. Target setting and role definition

7. Organisation development

8. Policy development

9. Policy implementation

10. Monitoring, evaluation and improvement

4.1   Step 1. Institutional commitment

Making a commitment to regional and local engagement

During Step 1, a university or a higher education institution needs to consider its institutional interest in and commitment to the regional and local engagement. It needs to consider what it can gain and potentially lose from such an engagement. Can it win new resources? A stronger brand? Improved and more relevant study programmes or research activities? Or does the regional engagement dilute its scientific capacity and distract from the pursuit of excellence and other important objectives? The higher education institution needs to consider how the potential risks can be transformed into opportunities.

Given the many demands that are now placed on higher education institutions, it is important to reflect on how the engagement can relate to the core missions – teaching, research and service – of the institution and to acknowledge and take into account the perspectives, concerns and diverse views of key stakeholders: the university staff, students, alumni, the government, the community and industry. The role of the institutional leader is critical, as he/she should lead the process of the consensus building and mission development.

Forging an institutional commitment to local and regional engagement often requires a consensus building process within and outside the institution to define a new vision and mission which explicitly addresses local and regional engagement. It can also mean formalising ongoing but *ad hoc* activities and embedding engagement into the university's existing mission statement.

An explicit recognition of local and regional engagement in the institutional mission statement will enhance its legitimacy within the university community and external stakeholders. Once the higher education institution's role or mission has been agreed upon, it needs to be clearly communicated to the higher education community, key stakeholders and the wider community.

> **The University of Aalborg (DK) and long term commitment to the region**
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> After a long local campaign to establish a university, Aalborg University (AAU) was established in the northern Jutland in 1974. The popular campaign established a basis for an ongoing close dialogue with business and industry, trade unions and municipalities. An important early decision was to base research and educational activities on interdisciplinary integration and problem-based learning. Forty years later, the university takes pride in offering half of its course work in multidisciplinary project teams where students from different disciplines are brought together to solve authentic problems identified by the industry.
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> Partnerships with the municipalities form the backbone of the AAU's regional engagement and are based on a formalised collaboration system. A steering committee sets the strategic objectives for collaboration and has the oversight of the activities and progress made, whereas working groups are in charge of the delegation of the actions, identifying the university staff with relevant skills and expertise for different collaborative projects. The collaboration is based on a general agreement, a log book and an action plan, and may cover diverse activities in the form of R&D, productions, activities linked to experience economy, business development and student collaborations. With the Viborg Municipality, for instance, the AAU has multiple business and industry linkages such as the Spring Board which focuses on business development, Solution Camps which focus on providing creative solutions to authentic problems of firms, and the Tour of the Municipality, where AAU students meet with the local business community. The AAU organises conferences which bring together industry, students and researchers and acts as a "matchmaker" connecting university staff and students with the key industries such as the animation and computer games industry. The AAU and the municipality help each other build up their networks to succeed in European competitive programmes such as the Horizon 2020 and the global competition. The AAU also attracts students and maintains and develops partnerships with other education institutions in Viborg.
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> Source: OECD (2010a) and interviews by the author.

4.2 Step 2. Needs assessment

During Step 2, a university or a higher education institution needs to develop a clear understanding of the local and regional environment as well as the needs for socio-economic development. Using its own expertise and external knowledge resources, it will need to scan the environment and understand the local and regional context as well as

Analysing community and industry needs

the development trajectory of the operational environment. Here the institution should also take a broader look at the national, supra-national and global contexts.

An active outreach to industry and society and collaborative efforts will help the higher education institution to understand how the local economy and society are changing. It is important to grasp the economic and social development issues facing the regional and local government officials as well as the capacity-building needs of the area, its government, industry, labour market and the wider population. The institution will need to identify workforce, technical assistance, RDI, technological needs of the local and regional industries. The analysis of community and industry needs is best done in collaboration with the stakeholders.

Widening access and improving success in Victoria University (AU

One of the key needs for cities and regions is to improve the skills levels of the local population. Victoria University in Australia is a dual sector institution that provides both higher education, and technical and further education. It has over 50 000 students enrolled at campuses across the city-centre and western suburbs of Melbourne, which have below-average educational outcomes. The VU's Access and Success programme works with schools in the west of Melbourne to improve access to, and successful participation in, post-secondary education. It comprises different "arms", which involve university staff and students working in schools (Learning Enrichment), professional development of teachers via participation in postgraduate education (Teacher Leadership), working with senior secondary students to support their aspirations and provide information on pathways to tertiary education and employment (Youth Access), increasing the engagement of children and families with education and community life (Schools Plus) and developing and disseminating research (Access and Success Research). For example the Schools Plus Kinda Kinder programme seeks to address low levels of preschool participation by engaging with parents and children. Children attend once a week with a parent or a caregiver for a one hour free programme in public libraries, other community settings and schools. Pre-service early childhood teachers provide education through storytelling and other play activities, while supporting parents to develop social networks and familiarisation with formal education and community services. Kinda College has been developed with the vocational higher education part of the university to offer parents the opportunity to gain further education accreditation for their skills.

Source: OECD (2010b).

4.3   Step 3. Institutional capacity assessment

After the regional or community needs assessment the higher educa-
tion institution should assess to what extent it has the capacity – re-
sources and expertise – to meet these needs and how it can best con-
tribute to the regional and local development. Its capacity in educa-
tion, research, development and innovation and service all need to be
reviewed, not forgetting facilities and infrastructure. A focus should be
in the areas of expertise where the institution's capacity to contribute
is likely to be strongest. In addition potential and/or emerging areas of
strength should also be identified and analysed as these can be bol-
stered if they become more closely connected with the local and re-
gional needs.

Assessing the HEI's strengths and weaknesses

For best results the higher education institution should consider under-
taking the capacity assessment review in collaboration with other
higher education institutions and VET-organisation in the community
or region. Keeping a higher education system perspective would help
identify expertise also in other organisations which can take the lead
in specific areas of local and regional development.

4.4   Step 4. Institutional activity audit

During Step 4 the higher education institution needs to carefully map
its partnerships, projects and activities with the local community and
industry. The purpose of this mapping exercise is to help the institu-
tion to build a strategic approach to regional development by deter-
mining a focus or niche for engagement. The past and current areas of
collaboration and engagement with the community and industry need
to be mapped and reviewed in terms of their functionality and fitness
for purpose to determine how well they address the current and emerg-
ing needs. This is important because existing (or past) collaborative
efforts can form the basis of new and stronger initiatives. Existing
areas of strength which are not involved in economic or community
development should also be reviewed to determine their potential.

Mapping engagement activities and linkages of relevance to the local and regional develop-ment

Some of the engagement activities, projects and linkages are large
scale and visible but a lot of activity is likely to go on outside of the
radar of the higher education institution's leadership or central admin-
istration. The mapping of the linkages should take advantage of the
existing accountability and reporting systems but also highlight other
activity which is not usually covered by these systems such as the staff
activity in local and regional associations, business and industry and
public sector organisations.

4.5 Step 5. Gap analysis

Carrying out an analysis of gaps in the HEI delivery and regional needs

It is important to recognize that no single institution is capable of meeting all the needs and expectations emerging in the local and regional community and industry. A higher education institution will therefore need to be strategic in its approach to regional engagement. There are likely to be gaps which the institution can relatively easily bridge and others which would take greater efforts to address. The gap analysis should be based on the previous steps, i.e. the needs assessment, the university capacity assessment and the activity audit, keeping in mind as well what other higher education institutions can or are already offering.

The institution should assess the need for new or strengthened capacity to respond to the unmet or emerging community and industry needs. These could include new study programmes, enhanced focus on soft skills in existing programmes, new R&D focus, projects that would benefit the local community and industry, services for students, community that the higher education institutions can offer or even infrastructure or facilities that can meet the immediate needs of the local community or industry or build long term capacity. These needs could also include helping tap the local industry to the institution's global knowledge networks and supply chains.

Mondragon University's (ES) close engagement with the industry

Mondragon University is a non-elitist co-operative university and part of Mondragon Corporation, the largest business group in the Spanish Basque Country. It has five co-operative entities, each with their own legal capacity. These include four co-operatives, each of which "owns" one of the four faculties. The fifth cooperative, Mondragon Unibertsitatea S.Coop. is made up of the other co-operatives and other companies and institutions. The Deans, the Rector and the Boards of Directors are responsible for the achievement of annual targets, which are measured by qualitative and quantitative indicators. Each employee is a member and a co-owner with a personal financial stake (at least one year's salary) in the future of their co-operative. The university reward system allows members to receive a small share of their annual salary (3-6%) at the end of the year, whereas losses can be "covered" with part of the members' capital.

With its co-operative traditions Mondragon University is deeply embedded in the local community and industry development. It has introduced a range of innovations to respond to the needs and opportunities of the region including the Mendeberri learning model which helps embed soft skills and work-based learning in all programmes and the adoption of the Finnish entrepreneurship education model Team Academy, which aims to escalate student startups and targeted inter-

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nationalisation efforts underpinned by the development of the governance and management systems in Latin American universities. Capitalizing on the culinary reputation of San Sebastian (which has the largest concentration of Michelin star restaurants per capita) Mondragon University has also built the Basque Culinary Centre with the help of local governments, food industry and regional technology agency to develop research and training in gastronomy. Finally, for R&D Mondragon University has developed a collaborative research model in which a technology committee involving the university, companies and other technology partners develops a technology roadmap: a three to four year agenda on future technology needs within a particular industry. The roadmap is then used to identify a series of potential projects with budgets which can be offered to the industry partners. Specific projects are then implemented according to the needs of the industry partners, each with their own characteristics and dynamics through teams involving academic staff, PhDs and students. The outputs from the projects are monitored and fed back into the technology committee with members from the Mondragon group and other local firms. Multiple benefits arise from this scheme such as technical outputs and improvements, the development of mutual trust among the participants, a commitment to expand R&D activities within the companies, an alignment between the university's research and the companies' needs, genuine collaboration rather than the customer-supplier model, and a culture of external monitoring and idea generation.

Source: Puukka et al. (2013)

4.6 Step 6. Target setting and role definition

Once the base line analysis is completed, the higher education institution can start making strategic decisions about its specific role in the city or a wider region in terms of economic, societal and cultural development. This role should support the institution's basic missions – teaching, research and service – and build on the strengths and expertise of the institution – areas in which it has competitive advantage or specific resources. This role can equally require action in areas where there are identified gaps in the current capacity and the needs of the regional community and industry.

Determining the target of opportunity in which HEI's engagement will bring added value and makes sense

In order to be able to make a strong contribution in the regional and local development, the higher education institution will need not only to define the objectives but also align resources with these objectives. While project funding can be used to launch operations, key activities should be embedded in the normal business of the institution and receive core funding. For this reason, it is important to embed regional development activities into the institution's core functions.

Investing in selected areas of comparative advantage can contribute to long term benefits and payoffs. This could involve developing entire new study programmes to support high-tech industry or a new research focus.

4.7   Step 7. Organization development

Once the new role has been identified and agreed-upon the higher education institution will need to determine how to organize the supporting activities. In some cases existing organisational arrangements may be sufficient, but often new arrangements may be necessary.

The higher education institution will also need to determine who will lead the engagement agenda and make assignments and communications arrangements clear. Some higher education institutions have a Deputy Vice Chancellor/ Vice Rector in charge of regional development and community engagement. There may also be a need for staff members who have a dedicated task to communicate/cooperate with the external stakeholders.

4.8   Step 8. Policy development

Establishing new policies to facilitate engagement

The higher education institution will need to ensure that policies are in place to support its role in local and regional economic development and community engagement. Efforts need to be made to develop and maintain a supportive culture and climate for engagement which will enable the institution to respond to the needs but also protect its own interests. For many higher education institutions this requires a step change from an institution which is focused on its excellence in basic research or education to an institution which has a focus also on local relevance and embeds innovation and engagement in research and teaching and learning.

The establishment of a culture of engagement may require a significant shift of focus and a new model of leadership, moving away from either excessive collegiality or command and control, towards a learning organisation which learns and adapts as it goes.

An engaged higher education institution is an agile organisation where outreach, engagement and risk-sharing are actively encouraged, championed and rewarded. This may require revisiting the human resources policies and a stronger recognition and rewards policy for community engagement and industry collaboration. It may also require that academic staff's consulting activities be permitted and bal-

anced with academic responsibilities, and that financial policies (patent, licensing, royalties etc.) be in place before new industry linkage arrangement are formalised.

University of Rovira i Virgili's human resource systems acknowledge staff participation in regional engagement

All Spanish regions have their own universities, but their regional engagement strategies often remain underdeveloped and constrained by framework conditions and governance. Some institutions have nonetheless made efforts to play an active role in the design and delivery of regional strategies. A case in point is the University of Rovira i Virgili, which has mobilized its knowledge resources to address the challenges and opportunities in Tarragona and southern Catalonia and features education provision and R&D which are aligned with the key industries in the region.

An important element that supports the URV's regional engagement and strategic goals is the human resources strategy which sets a base expectation for the staff performance in core activities, by enhancing, recognizing, rewarding and evaluating regional engagement along with excellence in teaching, research and management. The URV's staff contracts recognize the importance of and give value to the staff participation in these tasks. Staff members are allowed to spend time working in local firms during their leave periods and have on-going relationships with the firms. The university staff contract includes a system with a ten-point base. All staff members are expected to do research and to teach, with the minimum contractual obligations constituting six of the expected ten points. To reach the expected ten points, the university staff member can contribute in a variety of ways, according to their interests and expertise, by working with SMEs to implement technology transfer or technology commercialization projects or producing additional research and publication. All criteria for performance constitute a unit contributing to the ten-point base. The results are available in the university intranet to all members of the department. This evaluation method creates the flexibility required to allow all staff members to contribute to regional engagement activities.

 (Fotakis et al., 2014; OECD, 2011).

4.9   Step 9. Policy implementation

The regional engagement role of a higher education institution is likely to fail to deliver on its goals if it is not well implemented. Any

Implementing the new role

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change programme can benefit from "quick wins" or early indicators of success.[6] Quick wins and grasping the low hanging fruit can build confidence also within a higher education institution and staff and students and pave the way to the generation of new ideas.

When the new role involves significant change in the higher education institution's behaviour, the changes need to be clearly demonstrated, lead and managed from the top. This leadership needs to be assumed by academic leadership.

One possible way to accelerate the pace of change is to launch a programme of change agents or engagement enablers. This could target those people at the faculty and department level or students, who can act as catalysts of change, by successfully engaging with business and industry and the civil society. These individuals could comprise staff from a range of levels and roles, working together to bring forward a change in their own departments and institutes, or students who could take up a key role in regional development, industry collaboration or entrepreneurship activities. A critical step is to encourage staff and student involvement in the local and regional engagement. Higher education institutions need to publicise and inform the community and industry as well as public sector leaders about the resources and expertise that they can offer.

4.10 Step 10. Monitoring, evaluation and improvement

Procedures will need to be put in place to monitor and evaluate the effectiveness and impact of the engagement activities. Steps will also need to be taken to publicise the efforts made and to ensure that the institution and individuals receive credit for the contributions made. It is also important to ensure that monitoring and evaluation will lead to incremental improvements in the systems and mechanisms in place and, where necessary, termination of programmes and activities.

Funding and monitoring industry and community engagement: HEIF and HEBCIS (UK)

National level funding and monitoring mechanisms that support university industry and community engagement include the Higher Education and Innovation Fund for England (HEIF) introduced in 2001 and the associated monitoring system HEBCIS (Higher Education and Business and the Community Interaction Survey). The HEIF funding represents only a small component of the budgets of English universi-

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[6] Kotter, John P.1995. Leading Change. Why Transformation Efforts Fail. Harward Business Review. March April 1995.

ties, but its cumulative impact on the behaviour of universities has been significant. (PACEC, 2012) Higher Education Funding Council has maintained the HEIF funding at GBP 150 million per annum for the four year period 2011-15 when 99 English higher education institutions were awarded funding. Institutions were eligible to receive an allocation if they exceeded GBP 250 000 allocation threshold related to their external income earnings and the performance of the sector over all as captured in HE-BCI survey

The HEBCIS monitoring system covers a range of higher education institution activities, from the commercialisation of new knowledge, through the delivery of professional training, consultancy and services, to activities intended to have direct social benefits. Data collection has been the responsibility of the Higher Education Statistics Agency (HESA) since 2011.

In 2014, HEFCE introduced tools to identify higher education "cold spots" in the form of data maps on the higher education provision as well as evidence on student numbers and characteristics, graduate employment, and higher education institutions' interaction with business and the community across England at local and regional level.[7] These data and tools clarify the scale and impact that higher education institutions have on an area, and the contribution they make to the delivery of the local development plans and can enhance opportunities for coordination that will help institutions and local partners identify more effective delivery of local economic plans and monitor the progress made in widening participation. HEFCE is also funding the Student Engagement Partnership to promote student engagement activity in the higher education with the help of a central resource for practitioners and institutions housed and managed by the National Union of Students, which coordinates the sharing of knowledge relating to student engagement at a national level.

Source: HEFCE (2012a, 2012b, 2014.

Table 1 below provides a checklist of the ten steps, their key content and the questions that the higher education institution should consider in developing its regional engagement strategy.

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[7] The data were compiled from the Higher Education Statistics Agency (HESA) student record for 2012-13, the Individualised Learner Record from the Data Service for 2012-13, the Destination of Leavers from Higher Education survey 2012-13, the Higher Education – Business and Community Interaction survey 2012-13, the HESA finance record for 2012-13, the HESA performance indicators (2011-12 for non-continuation, 2012-13 for low participation) and Ordnance Survey Open Data.

Steps	Contents	Key questions
Step 1. Institutional commitment	Making an institutional commitment to local/regional development. Development of an overall vision for the future of the HEI as an engaged institutions embedded in the community and industry development in its city/region.	How does to HEI's governance system support local and regional engagement?
		How does the HEI mission relate to local and regional engagement? Should engagement be explicit in the mission?
		How do the academic and administrative staff and students see the university mission?
		How do the community, industry, public sector and civil society see its mission?
		What processes can be used to achieve a consensus on the HEI's role?
Step 2. Needs assessment	Conduct of a needs assessment of the community and industry e.g. simple technological/scientific/societal foresight exercise.	What is the nature of the local/regional economy and society?
		What are the key industry sectors? How is the economy changing? What are the future needs? What are the workforce needs?
		What are the research needs of local firms and other organisation? What are their technology development needs?
		What are the opportunities for new business development?
		What are the key social challenges in the region? Are the groups which are underserved by HEIs (gender, ethnic or migrant background, remote areas)?
		Is there a robust system of information gathering of regional environment and needs?
Step 3. Capacity assessment	Capacity assessment of the HEI's strengths and weaknesses in terms its potential to drive local/regional growth, innovation-driven differentiation and sustainable development	What resources and expertise does the HEI have that relate to community and industry needs?
		How do the study programmes relate to the labour market needs? Is there a mismatch or match?
		How does the research areas and research focus relate to the industry and community needs? How do service and outreach activities relate to the industry and community needs?
		Are there new capacities that need development?
		Is there a need for strategic investments?
		Is there a robust system of information gathering of successes and failures of HEI's engagement activities? Is there robust data on RDI performance and capacity, student's socio-economic and

		geographical background? Or students' work-based learning activities and volunteering or graduate employability, graduate destinations?
Step 4. Activity audit	Mapping of the HEI's (and HE community's) engagement activities and local and regional linkages	Are the systems in place to collect information on the HEI staff and students' diverse activities that benefit the economy and society including participation in committees, volunteering, consulting, participation in projects etc.? Is there sufficient analysis of potential partners in the region or other regions (also internationally) to avoid duplication of efforts and to source expertise?
Step 5. Gap analysis	Conduct of a gap analysis based on a needs assessment, HEI's capacity and the activity audit	Are there local/regional needs that can be met with by existing HEI's resources and programmes? Are there local needs that could be met by new programmes that would be appropriate for the institution? Are there areas of strength/excellence that could be developed as an economic asset? Are there existing areas of collaboration that could be enhanced? Is there a mismatch of HEI's scientific strengths and regional competitive advantages? Is there and overs-specialization that can narrow the pool for talent and resources in HEIs, undermining its responsiveness and potential for generating innovations.
Step 6. Target setting and role definition	Determining involvement, selection of priorities for strategy and the definition of objectives. Determining target of opportunity in which HEI's involvement will bring added value and makes sense.	What are the HEI's competitive strengths? Where can it make a unique contribution to the local economy, industry and community? How do its capacities compare with those of other HEIs and education institutions in the area? Which roles should be left to others? Where is the room for collaboration? What resources are available for the HEI to carry out its new role? Which roles are most supportive of the core missions? How to ensure that HE research interests and learning programmes are better linked to regional potential?

7. Organisation development	Development an organisation for the new roles	How well is the HEI organised to carry out the new role? How can existing mechanisms, departments and functions be developed so that they will better support the engagement agenda? How to improve coordination of information and action by HE departments and external stakeholders? Is there a need for new organisational arrangements?
8.Policy development	Definition of a coherent policy mix, roadmap and action plan	Do the current policies support moving in new direction? Do the policies ensure stakeholder participation & ownership in strategy design and governance? How do policies affect staff engagement with the community and industry? Are public-service and industry engagement activities given sufficient recognition? Do consulting policies balance the use of staff expertise with academic responsibilities? Is full advantage taken of student engagement activities? Are adequate human resource and financial policies in place?
9. Policy implementation	Implementing the new policies and the new engagement role. Aligning resources to support the goals.	Who will take the lead of the engagement agenda? Is there need for a champion of the new role? How will the linkages with government, civil society and industry be developed and maintained? How to ensure an appropriate selection of policies and tools: grants, soft support, infrastructure, HR policies. How to implement engagement policies in the time of limited continuity of public policies or fragmentation, lack of capacity of local authorities or limited absorptive capacity of small and medium-sized enterprises?
10. Evaluation	Integration of monitoring and evaluation mechanisms	How will the HEI's engagement be monitored and evaluated? How to design criteria to evaluate the strategy? How can the evaluation measure HEI's success in terms of the sustainability and transformation of regional economy and social progress? How will the evaluation be publicized? How can successes be built on, scaled up, amplified or replicated?

Table 2   **An institutional strategy for regional engagement: Ten steps to design and implement the strategy and key questions**
Source: Own elaboration.

5. Conclusions

Universities and other higher education institutions are places of learning, discovery and innovation and, as such, important players in regional and local development. An increasing number of higher education institutions are now viewing their academic tasks through the lens of enterprise, while some have extended their activities and strategies to cultural and social engagement. Higher education institutions are recognized as important anchor institutions within a city and a region where they are located and as key assets that retain and attract knowledge-based enterprises. A strong university with a broad industry collaboration is a magnet to enterprises competing on innovation and highly skilled workforce. Higher education institutions can also help upgrade traditional industries by knowledge transfer and continuous industry collaboration.

Despite the obvious benefits in this domain many higher education institutions continue to struggle in trying to find an appropriate role in regional and local engagement. Whether higher education institutions are able to effectively take part in local and regional development – human capital and skills, knowledge transfer, innovation and enterprise formation and community development – depends on the broader policy context at the national at regional level, the local industry structure and the decisions made by the institution itself.

Key to a successful engagement role for higher education institutions are partnerships with local and regional stakeholders. Higher education institutions' regional and local engagement and the related partnerships bring mutual benefits to cities and regions and higher education institutions. In order to take full advantage of the partnerships at the local and regional level, universities and other higher education institutions need to become more entrepreneurial and strategic by identifying challenges and opportunities in the development of their cities and regions. Given the often limited funding incentives for regionally relevant action and other financial constraints, higher education institutions should explore ways to address regional challenges and opportunities through their core missions of teaching and research. Sometimes strategic investment decisions are necessary in order to build up the institution's and the region's competitive edge. Strategic planning in an increasingly competitive situation requires careful examination of the local market and community demand for university "products and services", a mapping of regional and other external linkages in teaching and learning, RDI and service to the community, and scaling up isolated examples of good practice into a system. Strategic planning also requires a long term commitment to local and regional development; a readiness to "grow" with the region, its industry and population; a capacity to anticipate changes in the higher education institution's operational environment; finally, chart-

ing a new direction towards the future in order to achieve the institution's goals and objectives.

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Jaana Puukka is a higher education expert with 20 year experience at international, national and institutional level. She is the owner and founder of Innovation Engage and a former OECD analyst who advises international organizations, governments and universities across the world. Among her other tasks she is the External Consultant for the European Commission on Modernization of Higher Education and the Rapporteur for the Horizon 2020. As part of her work on Higher Education in Regional and City Development for the OECD in 2005-2013 Puukka co-authored the OECD flagship publication "Higher Education in Regions – Globally Competitive, Locally Engaged" (OECD, 2007) and more than 20 reports that examine higher education's role in socio-economic development.

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