

# **Regional Leader, Regional Citizen and Regional Resource: Analyzing the Embedded Role of Universities in Their Regions**

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## **Abstract**

*This paper proposes an analytical framework and discourse elements that can be used to comprehend the roles that universities play in regional development, in a way that is holistic and systemic, beyond the current tendency to reify the instrumental role that universities play in knowledge production to support the commercial development of products and processes (important as this undoubtedly is). The paper integrates and extends three existing bodies of literature that have developed along complementary but divergent lines: regional innovation systems, triple helix and university civic engagement. Three key activities of universities and their staff in regions are identified relating to human resource strategy, governance and knowledge capitalization. Drawing on and extending the existing literature, three roles are posited that represent overlapping orientations by universities to regional development: regional leader, regional citizen and regional resource. A benchmarking tool is proposed that can be used by policymakers and university managers to strengthen the contributions made by universities to their regions.*

## **The Environment of Universities**

Policymakers, industry leaders and communities increasingly view higher education institutions as performing an important role in regional development, particularly, amidst economic restructuring (OECD 1999). The role of universities has evolved over the last 20 years as a result of a number of “push” and “pull” factors that have forged new links between higher education policy and regional development (OECD 1999a). This transformation has been captured in the notion of a third role for universities, which has been described as centering on “community service” (OECD 1999a), “regional development” (Goddard and Chatterton 1999), “regional engagement” (Holland 2001), “regional innovation organization” (Etzkowitz 2002a) and “academic entrepreneurialism” (Etzkowitz and Leydesdorff 1999: 113). The nature of this role is recursive, infusing and re-shaping the traditional roles of universities in education and research; and systemic, shaping the design and structure of regional economies

generally, and regional innovation systems, in particular. Universities, thus, have increasingly become anchored to place.

The evolution in the role performed by universities has been shaped by a number of “push” and “pull” factors (Chatterton 2000: 167-169; Goddard and Chatterton 1999: 687-692). The push factors refer to changes within the higher education system, including higher education policies that are encouraging universities to engage more with regions; the move from a system of elite to mass higher education; lifelong learning needs created by changing patterns of skills demands in the labor market; the adaptation of learning and teaching activities from a linear model of transmission of knowledge, based upon the classroom towards more interactive and experiential techniques, drawing upon technologies that require locationally-specific material (Goddard and Chatterton 1999: 687); and increased competition from providers of education on a global scale. The pull factors have emerged from the wider economy and include: the use of regional policies that aim to leverage innovation-focused development; the regionalization of economies and the institutions regulating economic activity (Amin and Thrift 1994), leading to a new geography of capitalist activity associated with, on the one hand, the growing internationalization of production and the mobility of global capital flows and, on the other, the declining regulatory capacity of the nation-state; and stronger pressure from communities for institutions of higher education to adapt their research and education activities to support regional agendas.

This shift has led to the resurgence of the region through the integration of production at a regional level and the decentralization of large corporations into clusters of small business units and the greater role of small to medium enterprises (SMEs) in innovation environments. In turn, these developments have transformed the traditional client base of universities in education and research. Etzkowitz (2002a: 122, 2002b) argues that where there are gaps in regional innovation environments, universities play a broad role as regional innovation organizers, intervening directly to shape the structure of regional economies and bringing together local businesses and municipalities to develop an innovation strategy.

## **Domains of Regional Contribution by Universities**

The previous section explained the basis of renewed interest by governments, industry and communities in the third role of universities as agents of change and development in regions. This section identifies a number of key activities that universities undertake, or may undertake, in a regional setting. Boucher, Conway and Van Der Meer (2003) identify a number of tiers of engagement by universities in regional development, viz., direct injections of capital to regional economies and contributions to skilling, governance and the knowledge-based innovative activities of firms. The economic contribution that universities make to their localities through direct injections of financial capital is one important input, but may not be distinctively of a university’s added value. Any large institution located in a region will make some direct economic contribution simply by virtue of its presence there. Beyond this not unimportant

contribution, there are three specific areas of activity that universities and their staff undertake that are peculiar.

First, universities make a direct contribution to human resource strategy in a region through their education and research training programs that develop the skills base. Human resource strategy, in this sense, refers to the types of skill required in a region to meet current and emergent trajectories, where they are needed, how they should be developed and deployed and when they are needed. Chatterton and Goddard (2000) speak of universities being “of” their regions when they seek to shape regional human resource strategy by directing resources to programs that enhance the quality of a region’s skill base in line with development objectives and when they draw on regional expertise and experience in instructional design. This echoes Holland’s observation that a curricular connection is one of the most powerful and essential tools for implementing and sustaining engagement programs and partnerships (Holland 2001: 25). The literature on learning regions and on regional innovation systems also acknowledges the importance of a suitably skilled workforce as an essential element in an innovative milieu, recognizing the important role that universities play in enabling this process (Cooke 2001, Morgan 1997).

Second, universities and their staff may make an important contribution to regional governance, where governance is defined as the formal and informal strategies that shape the course of regional development (Chatterton and Goddard 2000). This aspect of university contribution has received relatively less attention in the literature; however, there is increasing interest, particularly, in the literature on university civic engagement, in the role that academic staff of universities and university managers play in influencing regional strategy development, often, within embedded networks of government, industry and community representatives. Governance institutions in a region are no less important as arenas where capabilities to learn and unlearn can circumscribe effective adaptation than firms (Lundvall and Johnson 1994). University staff and students may provide leadership, analysis, resources and credibility in the deliberations of regional development and promotion organizations (Chatterton and Goddard 2000: 490). Being anchored in multilevel national and international knowledge networks, university staff are in a unique position to broker regions’ access to knowledge and key contacts that may support strategy formulation.

Third, universities may provide important knowledge inputs to the innovative activities of firms and other organizations in a region, particularly, through research-based knowledge creation and capitalization. This is a central focus in the regional innovation systems and triple helix literatures (Cooke 2001, Etzkowitz and Leydesdorff 1997), which also turns on the notion of mode 2 knowledge production that is contingent, trans- and cross-disciplinary and cross- and trans-institutional (Gibbons, et al. 1994). Particularly, in knowledge-based industries, universities may play a unique role in providing essential innovative impulses that drive performance. The innovation systems literature points to the important of interaction and networking as key ingredients in the milieu of knowledge creation and diffusion in regions (Lundvall 1992) and the triple helix literature takes a stronger position again, insisting that universities may drive

economic trajectories through capitalization of research-based knowledge that is created within universities or co-created with industry.

These three domains of contribution – human resources, governance and knowledge capitalization – therefore, are fundamental building blocks in analyzing the role that universities perform in regions and there is broad agreement in the literature on this set of activities.

## **Existing Literature on the Roles of Universities in Regions**

Three bodies of literature have emerged that analyze the nature of the roles performed by universities in regions. These are: the regional innovation systems approach, the triple helix approach and the literature on university civic engagement. While there are a number of points of agreement, there are also key differences in emphasis that warrant closer examination, because they point to a transition from an instrumental view towards a more embedded, systemic citizenship orientation. A striking feature of these bodies of literature is the difference in emphasis centered on research-based knowledge capitalization. In some respects, there seems to be a parallel dialogue between the advocates of civic engagement and those that analyze universities as innovative animators. While the importance of industry knowledge linkages is not eschewed in the civic engagement literature, there is an evident broader focus in terms of activities and stakeholders, and particularly, in the underpinning values orientation.

Both the regional innovation systems approach and the triple helix approach emphasize a distinctive focus on innovation, which is defined as the commercialization of new knowledge in respect of products, processes and organization (Cooke 2001: 953). The mechanisms through which this occurs are different, however, in these two bodies of literature, as is the analysis of the role performed by universities. In the regional innovation systems approach, networks, interaction and learning are the prime mechanisms in knowledge creation and diffusion, building on the national innovation systems paradigm (Freeman 1995, Lundvall 1992). A distinctive contribution of the innovation systems approach relates to the notion of knowledge creation and capability development being embedded in the routines and conventions of firms and innovation support organizations, and universities are brought “inside the tent” as key actors in the endogenous innovation capacity of regions, as producers of knowledge, particularly, research-based scientific knowledge that is diffusion through co-production in networks, alliances and partnerships.

Regional innovation systems represent the intersection of the systems of innovation approach with spatial agglomeration of industry in a geographically specific area (OECD 1999b). Cooke (1998: 24-25) has conceptualized regional innovation systems as comprising “...a collective order based on microconstitutional regulation conditioned by trust, reliability, exchange and cooperative interaction” within a cohesive spatially bounded geographical area. The literature on the learning region

(Cooke and Morgan 1998, Morgan 1997, Florida 1995) and on the learning economy (Lundvall and Johnson 1994) echoes this conceptualization, emphasizing the importance of spatially bounded interactive learning, in multiple modes, within inter-firm and firm-institution networks, contextualized and energized by knowledge-based competition. Interactive learning and innovation are outcomes of a regional innovation system.

Extending this line of thinking, the triple helix approach conceptualizes a non-linear, interactive model of innovation as a recursive overlap of interactions and negotiations among universities, industry and government – the three helices conceptualized in the model (Etzkowitz and Leydesdorff 1997). Watson and Crick required only two helices to model Deiribonucleic acid (DNA); but three helices are needed to model university, industry, and government relations. A key insight offered by this approach is the hybrid, recursive, and cross-institutional nature of relations among the three helices. The institutional spheres of the state, the university and industry were formerly separate entities that interacted across strongly defended boundaries. Increasingly, individuals and organizations within the helices are taking other roles than were traditionally ascribed to them. For example, some academics and universities have become entrepreneurs in forming their own firms; some segments of industry behave as quasi-universities, employing postdoctoral researchers and implementing research and development programs that are steeped in the conventions of university research, notably publication of results in academic journals; and the state becomes a venture capitalist, underwriting research and development undertaken by universities and industry. This results in a blurring of boundaries between academia and industry and an overlapping of the institutional spheres as one sphere “takes the role of the other” (Etzkowitz and Leydesdorff 1999: 113; Etzkowitz and Leydesdorff 1997, Sutz 1997).

Thus, while industry and government, hitherto, were regarded as the primary institutional spheres in economic regulation, universities are moving into this category as they focus increasingly on boundary-spanning knowledge capitalization projects, such as incubator development, firm formation and attracting the co-location of firms through science parks. Etzkowitz summarizes the orientation of the triple helix model towards the role that universities perform in regional innovation systems thus:

“The role of the university in economic development has taken a fundamental step (beyond transferring intellectual property generated on campus): the creation of new firms” (Etzkowitz 2002b: 77).

Almost as a parallel dialogue, the engaged university approach defines university engagement as: “A direct interaction with external constituencies and communities through the mutually-beneficial exchange, exploration, and application of knowledge, expertise, resources and information” (Holland 2001: 24). The literature on the engaged university (OECD 1999a; Holland 2001, Chatterton and Goddard 2000) also focuses on the third role of universities in regional development, but it differs from the triple helix and regional innovation systems approaches in its emphasis on adaptive responses by universities that embed a stronger regional focus in teaching and research missions. A key difference is the dialectic relationship between universities and

external constituencies, whereby engagement activities influence the region and also the university's objectives and core activities, notably, teaching. This approach does not eschew research-based knowledge capitalization or hybrid, boundary-spanning mechanisms that are generative of economic growth; rather, it takes a broader, developmental focus that covers a range of mechanisms by which universities engage with their regions.

Table 1 summarizes the key ideas in the three bodies of literature that address the nature of university roles in regions.

<b>Table 1: Key ideas in the theoretical literature on universities and regions.</b>		
Regional innovation systems approach	Triple helix approach	University civic engagement approach
Universities provide knowledge inputs to the innovative activities of firms.	Universities develop a focus on knowledge capitalization, through incubators, spin offs, science parks, licensing.	Emphasizes systemic interaction between universities and communities.
Learning, interaction and networking are key mechanisms for knowledge creation and diffusion.	This focus involves interaction with industry and government.	These interactions are focused on mutual benefit for the university's activities and the communities.
Emphasis on knowledge creation and diffusion in a commercial context.	Universities perform hybrid roles as animators of regional economic development.	Limited emphasis on commercialization of knowledge and on science-based interaction with firms.

These three bodies of literature characterize the roles performed by universities in regions differently. On the one hand, the regional innovation systems approach and triple helix approach emphasize the commercialization of knowledge that enables firm innovative activities. But, the university engagement literature, on the other hand, takes a broader view of universities that emphasizes mutually-beneficial partnerships that are not necessarily founded on commercial transactions, or on firm innovation.

These orientations are reflected in empirical studies of the role that universities perform in regions. A key point is that much of the empirical literature has been dominated by an instrumental view of universities that has focused on the commercialization of knowledge, with particular reference to high technology industries and regions, amidst firm clustering. Less attention has been paid to a broader view of universities as citizens of regions, influencing, and being influenced by, interaction with a broad range of

regional stakeholders. Table 2 summarizes a number of the key studies of universities' regional roles, highlighting the core propositions explored.

<b>Table 2: Key empirical studies of university roles in regions.</b>	
<b>Empirical study</b>	<b>Core proposition(s) explored</b>
Lawton Smith (2003)	Drivers of university (scientific) knowledge transfer to regional firms.
Van Looy, Debrackere and Andries (2003)	Effectiveness of regional policies to stimulate university-industry collaboration in commercial knowledge transfer, in high tech regions.
Boucher, Conway, Van Der Meer (2003)	Multiple roles of universities supporting regional development.
Cooke (2002)	Role of universities in supporting biotechnology clusters.
Etzkowitz (2002b)	Role of the university in shaping regional growth through knowledge capitalization.
Todtling and Kaufmann (2002)	The reliance of SMEs on external partners, including universities, for knowledge inputs to innovative activities.
North, Smallbone, Vickers (2001)	Effectiveness of policies to foster university (and other) support for the innovative activities of SMEs in technology-based industries.
Holland (2001)	Exploring the nature of university civic engagement.
Grossman, Reid and Morgan (2001)	Effectiveness of the contribution of academic research to innovative performance of high tech industries.
Lee (2000)	Conditions for successful research-based cooperation between universities and firms in high tech industries.
Klofsten et al (1999)	Role of universities in fostering the development of high tech industries through research-based commercial knowledge transfer as well as education.

The purpose of Table 2 is to illustrate briefly the range of empirical literature that has emerged in recent years exploring the nature of university roles in regions. A key points evident from this scan of the literature is that the study of university roles has tended to concentrate on the commercialization of knowledge, largely at firm level, in high technology regions. In this sense, the literature has tended to be dominated by an instrumental view of universities, grounded in the regional innovation systems and triple helix approaches. In Australia, it is thus unsurprising that policy settings in regard to higher education and innovation have echoed this instrumental view, with a strong emphasis on fostering collaboration with industry towards the commercialization of knowledge outputs (Howard 2001).

## **An Integrative Typology of University Regional Roles**

This section proposes a typology for understanding the roles that universities perform in regions that integrates and extends the key ideas behind the three bodies of literature discussed earlier. Underpinning this typology is the value position that universities make, or can make, a broad contribution to regional development and that a different discourse is needed to capture and explain this. The three bodies of literature point to an important distinction between what might be described as instrumental and citizenship views of universities in their regions. That this distinction has arisen is something of a puzzle. Yet, it is evident in the language used to describe and analyze the role of universities. One group of authors speaks of research-based “commercialization of knowledge,” “knowledge transfer,” “technology transfer,” “clustering” and “networked learning,” and the other speaks of “civic engagement,” “citizenship” and “mutual benefit.” The distinction is also evident in the scope of journals. There are several leading journals that are specifically devoted to capturing the instrumental view of universities; but far fewer journals that appear to canvass the broader, citizenship orientation of universities in regions.

Yet, the two positions can be reconciled; indeed, the civic engagement perspective may enrich and enhance the instrumental view. This is because the instrumental view of universities does not appear to acknowledge sufficiently the importance of mutual benefit and systemic relationship. On the other hand, the civic engagement perspective is a broad church and encompasses research-based interaction, as well as interactions centering on education and governance. The typology set out in Table 3 is based on the three bodies of literature. In this typology of roles universities are viewed, potentially, as performing three overlapping roles.

<b>Table 3: Typology of regional roles of universities.</b>	
University role	Key elements
Regional leader	Shapes regional strategy, including innovation strategy, through knowledge-based initiatives centered on the university.
Regional citizen	Invests resources in initiatives (including identifiable institutional mechanisms) to develop knowledge capabilities that directly benefit the region, and adapts and enhances its own objectives and activities as a result of learning from these initiatives.
Regional resource	Provides specific inputs to regional stakeholders to support their activities, including firm innovation.

This typology suggests levels of progress in the embeddedness of a university in a region and, hence, is developmental in orientation. It also blends and extends the emphases found in the current literature, adopting a holistic focus. Leadership involves a distinctive contribution to regional strategy that centers on the capabilities of the university itself, for example, regionally-based spin offs, supporting existing or emerging clusters. Here, the university directly shapes, or re-directs, a regional trajectory. On the other hand, the citizenship role connotes embeddedness that carries mutual benefits and responsibilities, much as in the civic notion of citizenship. In this role, the university makes specific investments in regional capability development and, critically, learns and adapts its own objectives and activities as a consequence (or expects to do so). The notions of specific investments and mutuality distinguish this role from that of the regional resource, where the university is an expert input to others' agendas in a region and, in this sense, contributing to regional development. However, there is little investment of resources in specific regional initiatives nor an avowed expectation of, or commitment to, adaptation through these activities.

These roles may overlap, as shown below, where universities reach a level of maturity that involves a combination of leadership, citizenship and resource.

In turn, the three roles of universities can be articulated in regard to the major spheres of activity discussed earlier, viz., human resource strategy, governance and knowledge capitalization. This is depicted in Table 4, with examples of activities that illustrate the relationships.

<b>Table 4: Illustrating the roles of universities in regions.</b>			
	Regional leader	Regional citizen	Regional resource
HR Strategy	Skill formation linked to knowledge capitalization initiatives.	Key actor in development of regional HR strategy. Adaptation of programs, pedagogy and institutional mechanisms to support.	Input to implementation of regional HR strategies.
Governance	Leading a regional industry development strategy based on university knowledge capabilities.	Point of authority for regional human resource strategy development.	Participation in regional forums.
Knowledge Capitalization	Commercial development of university knowledge that resides in region.	Commercial development of knowledge in collaboration with regional firms.	Providing advice and other input to regional firms and stakeholders drawing on the knowledge capabilities of the university.

The framework described in Table 4 can be used to benchmark the roles performed by universities in regional settings and to make choices regarding desired states. Further, specific developmental initiatives may be developed that contribute towards movement between roles or to strengthen a university's focus in one or more areas. This framework integrates and extends the key ideas of the three bodies of literature relating to the role of universities in regions. Figure 2 depicts the framework when used as a diagnostic tool to reflect on the role of a university in a region and to benchmark a university's role with others.

The tool depicted in Figure 2 can be used by university managers or a cross-section of university staff and external stakeholders to map the role that a university performs in its region. The central triangle captures the three key domains of contribution of universities. For each domain, separate triangles are drawn that contain a scale from 0 to 5 for each type of role – regional leader, regional citizen and regional resource. Using appropriate data collection and reflection, parties can allocate a score for each of these roles and the result can be shaded to present a visual description of the current state. This process can then be repeated for a desired state, which in turn, can prompt

strategy formulation. As indicated earlier, a menu of possible options can be prepared that is indicative of what it takes to move between roles and this can serve as a basis for discussion, without being overly prescriptive. Alternatively, this kind of process can be used to compare the roles performed by different universities, perhaps in different regions, and used by policymakers and university managers to reflect on larger systemic changes that may be foreshadowed.

## **Applying the framework**

The proposed typology of university roles is applied in the Australian setting through case studies of three universities in peri-urban, provincial city and rural regions. The case studies involved over 100 interviews with university managers and academic staff, representatives of government agencies, regional development bodies, peak business and industry bodies and representatives of community groups. Extensive document review of relevant government reports, university reports, planning documents and annual reports was also undertaken. The data collected was classified into domains of contribution and roles using the descriptions set out in Table 3.

The peri-urban university was established as a focal point for the delivery of tertiary education for residents of its region. The industry base of the region largely comprises services and light manufacturing firms and is dominated by small and medium enterprises (SMEs). Although its enabling legislation makes it clear that the university must engage, foremost, with its own region, the size, spread, and economic diversity of the geographical area covered makes engagement a particularly complex challenge. The provincial city university was established to service acute post-war demand for professional engineers, metallurgists and chemists in its region, which was the hub of a thriving manufacturing and coal mining industry base. From this beginning, the university has deepened and extended its role beyond education, to the development of leading edge research, in partnership with regional, national and international collaborators, and in making a significant contribution to the governance of its region.

The rural university was established by the amalgamation of two colleges of advanced education to service the educational needs of its region. Although it has had a strong record in meeting the tertiary educational needs of students in rural Australia, initially, in science and agriculture, and education, the university has extended its reach over the thirteen years of its history, in research and engagement with governance processes, as well as enhancing the social and cultural life of its surrounding communities. The mission and objectives of the university are infused with a broad sense of being a truly regional university, with national and international aspirations.

Tables 5 to 7 provide an overview of the key findings of the study. Although these tables do not capture the richness in the empirical data, they do illustrate the application of the framework proposed in this paper.

**Table 5: Regional role of the peri-urban university.**

	Regional leader	Regional citizen	Regional resource
HR Strategy			Key contribution to skill formation in the region through general education programs. Limited role in strategy.
Governance			Extensive participation in regional forums.
Knowledge Capitalization		Limited, emerging commercial development of knowledge in collaboration with regional firms.	Key provider of advice and other inputs to regional firms and stakeholders, drawing on the knowledge capabilities of the university.

**Table 6: Regional role of the provincial city university.**

	Regional leader	Regional citizen	Regional resource
HR Strategy	Limited skill formation linked to K Capitalization initiatives – incubator and technology precinct.	Key role in the development of regional HR strategy. Limited adaptation of programs, pedagogy and institutional mechanisms to support.	Limited input to implementation of regional HR strategies.
Governance	Leading a regional industry development strategy based on university knowledge capabilities – major science park development.	Limited role as point of authority on regional development issues.	Staff participation in regional forums.
Knowledge Capitalization		Some commercial development of knowledge in collaboration with regional firms.	Providing advice and other input to regional firms and stakeholders drawing on the knowledge capabilities of the university – engineering, advanced manufacturing.

<b>Table 7: Regional role of rural university.</b>			
	Regional leader	Regional citizen	Regional resource
HR Strategy		Adaptation of programs, pedagogy and institutional mechanisms to support.	Input to implementation of regional HR strategies.
Governance			Participation in regional forums.
Knowledge Capitalization		Limited commercial development of knowledge in collaboration with regional firms.	Limited provision of advice to regional firms and stakeholders drawing on the knowledge capabilities of the university.

Tables 5 to 7 illustrate the application of the framework proposed in the paper, although the visual representation of the relative strength of the roles undertaken by the universities was not applied in the study. These tables and the accompanying detailed empirical material can be used by university managers to reflect on their existing and desired states, in the context of others' activities. The tables may also be used by policy makers to identify patterns in the roles undertaken by universities on a broader scale, which can inform policy strategies aimed at enhancing the regional performance of universities.

## **Conclusion**

The framework presented in this paper adopts a holistic, systemic approach to understanding the contributions that universities make, or can make, to regional development. Although the renewed interest in universities as key agents of endogenous growth is welcome, there has been a tendency in some governments and among some university managers to be enamored with an instrumental view of universities as knowledge producers to support the commercial development of products and processes. This is evident in the discourse on the role that universities perform in innovation systems and in knowledge capitalization. This is an important part of what universities do, but it is by no means the sum total of what universities offer to their regions. Hence, this paper is born out of a desire to broaden the field of vision and to introduce language into the policy discourse that connotes a deeper, systemic understanding of the identity of universities in regional settings. It is for this

reason that the paper does not seek to add another layer of meaning that is independent of existing constructed understandings, but to extend what already exists.

The framework of regional leader, regional citizen and regional resource thus seeks to encourage energy and exploration within policy communities and universities of a different way of thinking about universities, beyond the predominant discourse on the commercialization of knowledge, important as this is. To this extent, the detailed explication of the framework is a continuing dialogue rather than a precise, elegant formulation.

The existing bodies of literature on the regional role of universities contain the seeds of this framework, although there is an evident skew towards instrumentalism. The added value of this paper has been in integrating, extending and re-casting elements of the current discourse on university role and proposing a practical tool that can be applied by university managers and policy analysts to take stock of the current state of a university's contributions to its region or to compare a set of universities across a region or in different regions and to use this to reflect upon a desired state and strategies for change.

There are a number of limitations in the framework as proposed above and addressing these adds to the richness of the process of reframing understandings of what universities are and how they can benefit from, and add benefit to, their environments. The three domains of contribution are reasonably well settled in the literature, although there may be some debate about the scope of each domain and whether the direct economic contribution of the university ought to be included. As indicated earlier, the latter was not included because it seemed that this was not distinctive of a university and would apply equally whether the institution was a university or a hospital or a prison. The three roles do represent qualitatively different constructs that might reasonably be regarded as connoting levels of maturity, notwithstanding obvious areas of possible overlap. Thus, a university may occupy all three roles or some combination. The benchmarking tool proposed here takes the framework beyond a descriptive device, adding some analytical power, particularly, when it is used in group processes of reflection and planning. The three roles of regional leader, regional citizen and regional resource aim to integrate and extend existing understandings and hold them together in a broader crucible that is holistic and systemic. That said, the three labels and their definitions need to be developed further, preferably, through empirical study.

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