

Tiers of Engagement by Universities in their Region's Development

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BOUCHER G., CONWAY C. and VAN DER MEER E. (2003) Tiers of engagement by universities in their region's development, *Reg. Studies* 37, 887–897. This paper identifies structural, institutional and social factors that interact to shape the participation of mostly European universities in their region's development. The interactions of these factors can foster or hinder the contributions of universities to their region's development. These factors include regionalization of the higher education system, regional identity and networks, type of region and university. Of particular importance at the university level are competition and hierarchy effects between universities in a region. The existence and level of these effects are used to generate four categories of tiers of engagement by universities in their region's development.

Universities Regions Regional development Knowledge Engagement Networks

BOUCHER G., CONWAY C. et VAN DER MEER E. (2003) Les niveaux d'engagement des universités dans l'aménagement du territoire, *Reg. Studies* 37, 887–897. Cet article cherche à identifier les facteurs structurels, institutionnels et sociaux qui agissent les uns sur les autres afin de déterminer la participation des universités, européennes pour la plupart, dans le développement de leur région. L'interaction de ces facteurs risquent d'encourager ou d'entraver la participation des universités au développement de leur région, y compris la régionalisation de l'enseignement supérieur, l'image de marque et les réseaux régionaux, les caractéristiques de la région et de l'université. D'une importance particulière au niveau de l'université sont les effets de la concurrence et de la hiérarchie pour ce qui est des universités au sein d'une même région. On se sert de la présence et l'ampleur de ces effets afin d'esquisser quatre niveaux d'engagement par les universités dans le développement de leur région.

BOUCHER G., CONWAY C. und VAN DER MEER E. (2003) Stufen des Engagements von Universitäten bei der Entwicklung ihrer Region, *Reg. Studies* 37, 887–897. Dieser Aufsatz stellt strukturelle, institutionelle und soziale Faktoren heraus, die auf einander einwirken und damit die Beteiligung der meist europäischen Universitäten an der Entwicklung ihrer Region prägen. Die Wechselwirkungen dieser Faktoren können die von Universitäten zur Entwicklung ihrer Region geleisteten Beiträge fördern oder hindern. Die Faktoren schließen Regionalisierung des höheren Bildungswesens, regionale Identität und Netzwerke, Typ der Region und Universität ein. Auf Universitätsebene sind Wettbewerbs- und Hierarchiewirkungen zwischen Universitäten einer Region von besonderer Bedeutung. Vorkommen und Ausmaß dieser Wirkungen werden dazu benutzt, vier Kategorien des Engagements der Universitäten bei der Entwicklung ihrer Region aufzustellen.

Universités Région Aménagement du territoire
Connaissance Engagement Réseaux

Universitäten Regionen Regionale Entwicklung
Wissen Engagement Netzwerke

INTRODUCTION

This paper focuses on the role of universities in regional economic development. It examines how local institutional networks can embed universities into the region to promote a learning environment, develop skills and build resources for competitiveness and social cohesion. Regional development is understood in terms of the

existence, creation and strengthening of informal and formal linkages, as a 'set of functioning institutions, organizations, funding structures and streams, interactive networks and forums for collaboration, for the pursuit of common economic, social and cultural goals' (HOLTITA, 2000).

One purpose of the research has been to identify structural, institutional and social factors that interact to

shape the participation of universities in their region's development. The interactions of these factors can foster or hinder the contributions of universities to their region's development. The main factors identified in the UNIREG research are: the extent of regionalization in the national higher education system; the type of region in terms of its core and peripheral features; the character of regional identity; the existence and type of regional networks; and the number and scale of universities in the region.

The comparative research results broadly support some of the main findings of the Dearing Report in the UK with respect to the developmental role of universities in their regions (NATIONAL COMMITTEE OF INQUIRY INTO HIGHER EDUCATION, 1997a, 1997b). Thus the UNIREG results also highlight the significance of competition between universities; differences in international, national, regional and local orientations by type of university; the role of regional identity; and the importance of funding to steer regional engagement by universities. The particular relevance of the UNIREG research is that it shows how the interaction between these factors, especially competition and hierarchy effects, helps to explain variations in regional engagement by universities. This could lead to institutional reflexivity and policy initiatives by university management to overcome the limitations of the effects. It could also lead to greater awareness by regional stakeholders of the need to address these factors in planning and implementing strategic frameworks for regional development.

These findings have been based on research from an EU-funded Fourth Framework Targeted Socio-Economic Programme on the role of universities in regional development (UNIREG). The paper draws on evidence from 14 regions in seven European countries. The 14 regions studied are the North East of England and London in the UK; Shannon and Dublin in Ireland; North Karelia and Helsinki in Finland; Overijssel (Twente) and Noord Holland (Amsterdam) in the Netherlands; R uhr and Aachen (North Rhine Westphalia) in Germany; Andalucia and Madrid in Spain; Crete and Attica (Athens) in Greece. The project methodology comprised three empirical modules relating to the role of universities in regional development.

The first provided a national policy context for the research by reviewing national documents relating to university policy and role in regional economic development. A common framework was used in each of the eight countries to address issues such as the institutional arrangements governing universities, the mission and culture of universities, the funding of universities, and policies for research and innovation support. This involved a desk-based review of national policy documents, literature and statistics to identify key drivers and trends, whilst also ensuring that each report identified national specificities. Interviews were

also conducted with national policy makers in higher education.

The second module examined the nature of links between universities and their regions around a set of core themes:

- universities and the governance of regions
- student migratory flows and local labour market dynamics
- the role of universities in information society initiatives
- management of universities
- the social shaping of knowledge workers
- universities and regional culture
- the role of universities in regional innovation strategies
- universities and sustainable regional development.

A common set of questions were posed for each theme and information was collected using face-to-face interviews with key actors in the region and within universities, reviews of existing documents, data collection and analysis. This provided the groundwork and material for the third module as well as identifying specific examples of university engagement within the regions.

The third module comprised more detailed investigation through a horizontal synthesis across the case studies. Each member of the team took responsibility for one of the themes identified above and produced a synthetic report. The analysis drew upon the information produced in the regional case studies, supplemented with other literature, data and material gathered using qualitative and quantitative methods.

KNOWLEDGE, UNIVERSITIES AND REGIONAL DEVELOPMENT

Studies of economically successful regions suggest that success partly depends on 'institutional thickness' (AMIN and THRIFT, 1994) where institutions engage in the sharing of knowledge and expertise to promote cooperative activity. It makes sense that universities should be identified as significant institutional 'players' in knowledge-based regional development. Universities are by definition and practice institutions of higher learning. This learning is primarily based on the acquisition, synthesis and transmission of knowledge. Academics are trained and partly paid to create 'knowledge innovations' that can be informally and formally 'learned' by others through interactions, networking, teaching, presentations and publications.

The contribution of universities to their region's economic development has been studied with respect to their roles as 'economic entities'; commodified knowledge producers; shapers of human capital; and institutional actors in networks (THANKI, 1999). The first two focus on the universities direct economic contribution to their regions' development and the latter two include non-economic socio-cultural factors.

Their role as economic contributors includes combining measures of the university as an employer, payer of wages and salaries, buyer of products and services from local firms, and attractor of students who spend money in the regional economy (FLORAX and FOLMER, 1989; BLEANEY *et al.*, 1992; ARMSTRONG *et al.*, 1997). Their second role involves the commodification of knowledge produced in the university through intellectual property rights, technology transfer, science parks and spin-off firms (BRETT *et al.*, 1991; CHARLES *et al.*, 1995; O'KEY, 1995). The third concerns the role of universities as an attractor, educator and retainer of students, shaping them into knowledge based graduates for firms in the region. To date, there is not much research on this particular topic. The fourth role concerns their formal and informal participation as an institutional actor with other regional actors in linkages and networks of learning, innovation and governance (GODDARD *et al.*, 1994; KEANE and ALLISON, 1999). In general, there has been a move away from economic to a broader inclusion of non-economic contributions of universities to their region's development. The next section highlights a number of mediating factors that influence the relationship between universities and regions.

THE REGIONALIZATION OF HIGHER EDUCATION

National discussions about the regional role of universities have revolved around a few themes in most European countries. The geographical distribution of universities and student places over the country and the equality between them dominated discussions about regionalization during the 1950s and 1960s. Geographical decentralization of universities has been justified by equity arguments such as a regionally balanced spread of welfare and equality of opportunities, and efficiency arguments like increase in the supply of skilled labour. The most well known examples of geographical decentralization of higher education can be found in the UK, Finland, Germany and Spain from the 1980s (GELLERT, 1993).

The equitable distribution of universities poses questions for the retention of graduates within peripheral regions. National higher education systems without an even distribution of higher education institutions may encourage interregional mobility of students at point of entry. This may lead to a greater propensity for students to move again after graduation. Conversely, university systems where there is national regulation of entry in favour of localized study may lead to better outcomes in terms of the regional retention of human capital. Graduate retention is particularly important in peripheral regions due to the problem of matching the supply of graduates to the demand of the regional labour market. It is implicit that the knowledge and

skills of these graduates may be lost to other areas through migration.

Other issues are the extent to which the funding of higher education is regionalized, and discretionary power transferred to the regional government or higher education institutions. This often depends on the existence of regional levels of government with fiscal responsibilities. The federal system of Germany for example has a long history of regional funding for universities shared evenly between the *Länder* and the Federal Government (KUNZMANN and TATA, 1999). In Spain, the main responsibility for funding universities has been gradually transferred to the regional governments, starting with Catalonia and the Basque Country in 1985, and concluding with the final regions in 1997 (GARCIA and MACIAS, 1999). Yet the research also showed a strong national focus regarding funding in Greece, Finland, Ireland and the Netherlands. Even if universities are funded by regional governments, this does not guarantee that the orientation of the university is to the region. This partly depends on the extent to which discretionary power is transferred to the regional government or to the universities. The internal agenda of the university may be shaped either by directing resource allocation to specific kinds of activities or by providing additional incentives or special funds for new regional activities.

The geographical distribution of universities based on arguments of equity and efficiency influences the ability of universities to meet the aspirations of their regions in terms of research infrastructure and regional innovation systems. Typically, countries with a primate city that houses the largest and most prestigious university, and a centralist government, have seen highly concentrated R&D within that university as well as within government and private sectors. This has been true of Ireland, Greece and Finland. Only Germany and the Netherlands have had a more balanced distribution of research resources due to a mixture of federalist policies (in Germany) and the concept of equality among universities (in Germany and the Netherlands). The system within the UK and Spain is more complex. In the UK there has been a widely dispersed system of universities, reinforced by the 1960s expansion and unification of the university and polytechnic systems in 1992 (CHARLES *et al.*, 1999). However, the quasi-market funding of research, based on research assessment, has had the effect of concentrating research resources, with 33% going to just five institutions in London, Oxford and Cambridge (*ibid.*). In Spain there is a wide distribution of universities with new institutions established in the 1980s and 1990s (GARCIA and MACIAS, 1999). The move to regional funding has increased regional R&D capacity, but the historic dominance of Madrid still continues alongside Barcelona (*ibid.*).

Depending on these variables, regional governments in different countries are able to shape the range and

level of engagement by universities in their region. In countries where regional governments are responsible for higher education regulation and control, there may be greater commitment of the universities to participate in regional governance structures. For example, in Spain higher education regulation and control is shared between the central state and the regional governments (*ibid.*). Regional authorities in Andalucia are responsible for many policy actions influencing universities, including new campuses, large equipment, and allocation of budgets (CAMPAYO *et al.*, 2000). This means that the universities are highly dependent on regional government funding and policies. However, this is not the case in Madrid where the universities lack a clear regional identity despite the regionalization of university funding and policy making. Linkages between universities and regional governments are more significant in Andalucia than in Madrid, resulting in a stronger regional identity among universities (*ibid.*).

REGIONAL IDENTITY AND LOCAL COMMITMENT

An important issue for all of the case studies is the identity of the region and the way this influences the university's commitment to the region. Most of the central regions in this study are the seats of the national government and the main economic regions in their country. Examples are London, Madrid and Dublin. In these regions, the groups and institutions that universities engage with in the region are seated within the local area, but their business is often focused on the national and global scales. So, in a way the local is the global in cities like London, Madrid, and Dublin and to a lesser extent Amsterdam (which is not the seat of the national government but is the prime centre in almost every other aspect of economic, social and cultural life).

It appears that informal personal engagement in central regions is more important than in peripheral regions. In the Netherlands, the number of informal and *ad hoc* relationships with regional, national and international actors located in the Amsterdam area is much larger than in the Twente region where engagement is more often of a formal character and related to formal policy initiatives (VAN DER MEER and GROENEVELT, 2000a, 2000b). The same pattern of linkages is also evident in Ireland, when the Dublin and Shannon regions are compared. In the Shannon region, there is a common institutional emphasis on creating linkages and networks as an integral component of the regional development strategy. It could be that the need for formalized linkages in peripheral regions is largely because of the spatial scale of the day-to-day businesses of regional partners. In peripheral regions the connection between academic work, which still is highly specialized and globally oriented, and regional actors whose work is mainly focused on the

level of the region is less self-evident. Formalization of engagement in these regions may be more necessary than in central regions.

Another issue applies to older industrial regions in which older institutional structures and beliefs hinder the participation of the university in regional networks of learning. This suggests that human assets and cultural factors, deeply embedded in the social fabric of the region, might explain differences between regions in terms of university engagement in support of learning processes. For some especially older industrial regions, there is a need to 'un-learn' (LUNDVALL, 1994) the institutional structures and beliefs of past successful times before working on new network structures to support the learning region (MASKELL and TORNVIST, 1999). Within the German Rühr region, the old networks of local politicians, large scale industry and conservative lobbies still exist and dominate the regional decision-making process, excluding other organizations and institutions from the network (KUNZMANN and TATA, 2000a). These older networks inhibit the creation of new networks for knowledge sharing between regional stakeholders such as SMEs, universities and research institutions (*ibid.*).

A third issue related to regional identity refers to the size of the region, specifically the number of regional stakeholders who articulate regional needs. In smaller, less central regions, universities often represent a unique repository of knowledge, largely because of the lack of other institutions providing similar services such as governmental research laboratories, social science research centres, and businesses with R&D departments. Thus the 'enabling' ability of the universities in these regions is greater: universities enjoy a position as vital partners necessary for the success of particular policies and projects. Universities in these regions are better positioned to shape the institutional environment and regional agenda rather than participating in a reactive fashion. In the case of Spain, the influence of universities on the regional policy agenda is less clear in Madrid than in Andalucia, which can be attributed to the increasing number of actors within the regional system of research and higher education located in Madrid (CAMPAYO *et al.*, 2000; GARCIA and MACIAS, 2000). This situation is also shown in Ireland and the Netherlands. In Dublin, there is a relative lack of formal institutional linkages and networks between the three Dublin universities and external actors in the Dublin region (BOUCHER and WICKHAM, 2000a). By contrast, the Shannon region shows a multitude of formal institutional linkages and dense actor networks in which the University of Limerick is a vital partner (BOUCHER and WICKHAM, 2000b). In the Netherlands, the University of Twente has become one of the determinants of regional policy and flagships of economic development in the region, whereas the universities in Amsterdam are one of many research service providers (VAN DER MEER and GROENEVELD, 2000a, 2000b).

NUMBER AND SCALE OF UNIVERSITIES

Another mediating factor involves the number and scale of universities. The case studies indicate that a single relatively large-scale university in a peripheral region is of much more direct importance to the region's development than a number of relatively small-scale universities in a core region, particularly if the universities in the core region compete with one another and are not linked into a regional development strategy. In order to play a significant role in its region's development, the university must choose to prioritize the region over other competing demands on its resources. However, the case studies indicate that most universities require financial incentives to increase their regional involvement relative to national or international priorities, and outside of certain programmes in the UK, Spain and Finland these incentives tend to be lacking.

An additional mediating factor concerns the 'type' of university or whether the university is 'older' or 'newer' and 'traditional' or 'technical' in nature. The terms 'older' and 'newer' signify a distinction between universities established before and after the 1960s mass foundation of universities in Europe. While traditional refers to historical liberal academic 'town and gown' type universities, the term 'technical' university includes those that are more vocational or professional in emphasis. The case studies suggest that older and traditional universities tend to be less involved in the development of their regions than newer and technical universities, many of which have been upgraded from municipal technical institutes or amalgamated from a number of more vocationally oriented non-university institutes located in a core or peripheral municipality.

TIERS OF REGIONAL ENGAGEMENT

The research discussed so far reveals considerable heterogeneity across universities and regions according to the character and extent of university engagement in regions. Not all universities are equally involved in their region's development and particular types of universities are more engaged than others. In addition, not all regions have built knowledge interaction networks between their regional partners, and those that have built these networks have not done so to the same extent. Several explanations for these differences have been discussed, such as national government policy, regional identity, type of region, and the number and scale of universities. This section focuses on four categories of universities, examining differences in tiers of engagement by universities in their regions.

The four categories are generated from differences in the existence and level of competition and hierarchy effects in the relationship between universities and

their regions. Thus the regional engagement of single universities in peripheral regions is not impeded by competition or hierarchies between other universities in the region, while both seem to hinder the regional engagement of multiplayer universities in these regions. The level of these effects appears to be heightened in core regions between multiplayer traditional and newer technologically oriented universities, tending to severely limit the specifically regional engagement of these universities. The newer universities in core regions often respond by focusing on sub-regional or local engagement. Table 1 provides some information on the range of engagement and the level of impact at a regional level.

SINGLE PLAYER UNIVERSITIES IN PERIPHERAL REGIONS

Universities in this category are large players in the region in terms of knowledge production and their economic impact. However, they are not necessarily large universities in their national context. Their relative size gives them the potential to play important enabling roles in regional policy making. This means that universities in these regions are better positioned to shape the institutional environment to their own ends, which gives them the capacity to engage pro-actively and to seek to determine the regional agenda.

The regions in which these universities are located tend to be peripheral in socio-economic terms compared to the rest of the country. The incentive to establish a university in these regions often had a regional development component expressed in terms of equity or efficiency. This regional development component usually set in place part of the infrastructure to facilitate regional engagement. Often this infrastructure involves areas of engagement such as university technology transfer centres and graduate employment centres.

The peripherality of these regions often makes them eligible for European structure and social funds. Part of these funds are directed towards cooperation between universities and other regional stakeholders, which increases the incentive to start up working groups and projects together aimed at regional development.

The best practice examples in this category are the University of Twente, the University of Limerick, the University of Joensuu and, to a lesser extent, the University of Aachen. Generally speaking, these universities are the most engaged in their regions where they play a critical role in economic, social and cultural development.

The Twente region has a comprehensive regional innovation network in which the national government, regional authorities, regional business community and the University of Twente cooperate to foster innovative high-tech and knowledge based companies (VAN DER

Table 1. *Types of university engagement and regional impact*

	Types of engagement	Outcome/impact
Single player universities in peripheral regions	Encouraging entrepreneurship	The University of Twente's Temporary Entrepreneurship Programme supports and stimulates the creation of knowledge intensive businesses by offering financial, legal, technical and managerial support to graduates during the incubation period of their business. Since 1984 TOP has supported 220 individuals and incubated 180 new companies.
	Science and technology transfer	The University of Limerick's involvement in the National Technology Park has been instrumental in attracting overseas and indigenous science and technology companies to Limerick and encouraging collaborative research and work placements between the university and locally based firms. The University of Joensuu's involvement in the Karelian Science Park has been fundamental in improving competitiveness and promoting enterprise and employment opportunities within one of the poorest parts of Finland. In 1998 there were 40 small firms and over 150 employees in the Science Park.
Multiplayer universities in peripheral regions	Regional consortia	Within North East England a higher education consortia has been set up to collectively represent higher education in the regional consultative process and to create a single point of contact for businesses to access the knowledge, expertise and resources in North East universities.
	Cultural networks	The universities in Crete and Andalucia play a critical role in underpinning and strengthening the cultural resources in the region both for the academic community and the local population. Both universities fill cultural gaps through the provision of theatre, cinema, festivals, events and cultural heritage.
	Regional promotion	Despite the lack of an explicit regional strategy between universities and regional actors, local government in the Ruhr is increasingly using universities as important location factors in campaigns and material to promote the region and attract knowledge based businesses.
	Telematics networks	Universities in Crete have been crucial in the support and development of HYGIEAnet. This system provides the ICT infrastructure that ensures the transfer and integration of consistent information throughout a network of health care providers with the aim of supporting all patient related clinical processes within a regional network.
Traditional universities in core regions	Strategic planning and knowledge transfer	The University of Amsterdam has been instrumental in the establishment of 'Knowledge Circles' which aim to stimulate cooperative strategic thinking about regional development by periodically bringing together local and regional actors to share knowledge and exchange expertise.
	Sustainable development	Evidence outside Europe indicates that the University of Canberra and the Australian National University contribute to the sustainability of the Australian Capital Region through estate management practices, research into environmental technologies and raising community awareness programmes.
	Education and training	Universities in Helsinki have been involved in introducing new degree programmes or changing their structure and content to reflect the current needs of the labour market for skilled graduates in electronics and telecommunications. These subjects were considered to be cornerstones in the revival of the Finnish economy in the 1990s.
Newer technologically oriented universities in core regions	City regeneration	Dublin City University has created a network in the area around the university as part of its policy to regenerate this part of the Dublin sub-region. The university's policy includes small business development, tackling educational disadvantage and attracting cultural, sporting and other facilities to North Dublin.
	Widening access to non-traditional students	Several post-1992 universities in London are involved in initiatives aimed at providing opportunities for the local community. London Guildhall University through its Bengali Education Advice Centre has pioneered the development of pre-access and bespoke courses designed to improve educational opportunities for members of the Bangladeshi community and as a result the enrolment of Bengali students has risen dramatically.

MEER and GROENEVELD, 2000b). The University of Twente was established during the 1960s with a regional socio-economic development aim in mind. The university has developed working links within the region especially in the field of regional innovation and knowledge transfer. A major contribution to this liaison system has been the role of subsidies from European Structural Funds. The requirement for coalition building between the regional partners has been important in shaping the Twente Network based on linkages between the university and regional partners mainly focused on the SME sector. Whenever there is a project related to education, R&D, the SME sector or technology transfer, the University of Twente is one of the partners. Although these partnerships are *ad hoc*, members of the network suggest that European funds have contributed to the organizing power of this region.

In Ireland, the University of Limerick is a good example (BOUCHER and WICKHAM, 2000b). The university and the regional development corporation, Shannon Development, have created a multitude of inter-institutional linkages and a regional network, whose institutional expression is best exemplified by their partnership in the National Technology Park for science and technology companies on the University of Limerick's campus.

In Finland, the University of Joensuu is another example (HOLTTA and MALKKI, 2000). A central element of government policy in Finland has been to promote high-tech and knowledge based production in the economic recovery process. Within North Karelia, one of the poorest regions in Finland, a number of measures have been undertaken aimed at improving competitiveness and promoting enterprise and employment opportunities. These include the development of the Karelian Science Park linked to the University of Joensuu and the establishment of a Centres of Expertise Programme. The Karelian Science Park coordinates the Centre of Expertise Programme in Wood Technology and Forestry, and its activities are connected with the Faculty of Forestry at the University of Joensuu.

In the German region of Aachen, the Rheinisch-Westfälische Hochschule is the main example (KUNZMANN and TATA, 2000b). In attracting business investment, organizations involved in public relations for the Aachen region often cite the university's important role for the region's life and economy. Aachen is presented as a successful and dynamic technology region in which industry benefits from the proximity of the university. During the 1990s, international companies like Ericsson, Mitsubishi Electric Corporation and Ford chose Aachen as location for their plants and research laboratories, linking their decision to the location of the university.

These examples show single player universities that are highly connected to their peripheral regions in terms of knowledge and technology transfer relations. However, there is one key area in which these single

player universities in peripheral regions score relatively badly. This area is the extent to which these universities are capable of retaining a substantial part of the graduates for the regional labour market. There is evidence of a strong migratory pull of graduates to core regions.

To address this issue, a number of initiatives have been introduced in these peripheral regions to create more regionally relevant educational systems and provide opportunities for graduates to remain in or relocate to peripheral regions. One of the most interesting is the efforts of the University of Twente's Liaison Group to stimulate the creation of spin-off companies through the Temporary Entrepreneur Place (TOP) project (VANDER MEER and GROENEVELD, 2000b). Graduates and academics that want to start their own business are provided with technical, location, educational and financial facilities at the university during the incubation period of their company. The university also provides educational training in entrepreneurship, part of which is the development of a business plan in cooperation with the Faculty of Management studies.

The University of Joensuu has increased the regional relevance of its educational programme, and has also introduced entrepreneurship into the curriculum (HOLTTA and MALKKI, 2000). One example is the Entrepreneurial Education Programme introduced in 1994 in association with academic departments and the Karelian Science Park in Joensuu. The aim of the programme is to provide students with better opportunities to find employment in the private sector either as an employee or entrepreneur. Students can take the programme at three different levels, the most intensive of which is for students who intend to be entrepreneurs. In association with the Careers Service, students are also offered opportunities to spend periods of time in occupational training in firms.

At the University of Limerick (UL), staff and students are encouraged to participate in knowledge exchange with locally based businesses through the Co-operative Education Programme (BOUCHER and WICKHAM, 2000b). This programme contributes to the vocational aspect of education by introducing periods of off-campus work experience into the academic programme. Nationally, over 2,000 undergraduates are placed in six-month to nine-month work placements through a network of over 1,200 employers in commerce, industry and the professions. Although the firms that tend to recruit at UL are mostly national, with those located in Dublin being the single most important of these, there have been opportunities for local recruitment as a result of contacts developed through the scheme.

Yet, in spite of all these measures to increase the regional relevance of the educational programmes at these universities, the UNIREG research suggests that there is a still strong migratory pull from these peripheral regions to the core regions in these countries.

MULTIPLAYER UNIVERSITIES IN PERIPHERAL REGIONS

Universities in this category are often located in larger administrative regions and are not the only university establishment. Between these higher education institutions, there is often a difference in status, specialization and focus. The way these universities are involved in regional development shows a less coherent system than in the first category. The universities in these regions enjoy a less clear cut position in terms of knowledge provision and their ability to shape the regional agenda.

A good example is the North East region in Britain (CONWAY *et al.*, 2000a). The extent to which the universities are involved in regional socio-economic development is less than in the first category, although the universities make a determined effort to bridge this gap. Within the North East, a regional higher education consortium has been set up to represent the interests of higher education and combine their expertise. Universities for the North East is the regional consortium of the five North East universities. It represents the universities in regional consultative processes with regard to issues such as regional development, human resources and regional governance. It forms the main structural link between the universities and regional consultative process in which the universities are involved.

Another example of multi-player universities in peripheral regions are the universities in the Ruhr area in Germany (KUNZMANN and TATA, 2000a). For a long time the universities in the Ruhr were unable to become part of the relevant regional and local networks. These were dominated by conservative lobbies of local politicians and large industry representatives from the large-scale industry era. While the situation is slowly changing, this older network continues to dominate the regional decision-making machinery, more or less excluding potential innovative actors such as small and medium sized firms, universities, and research institutions or grassroots movements. According to those interviewed, the universities in the Ruhr are often not interested in becoming more involved in regional networks, focusing instead on their own problems such as university reforms. Further, the universities tend not to see themselves as parts of one university landscape, suggested by the fact that there is no joint association of Ruhr universities. Those interviewed also indicate a lack of willingness to collaborate at the senior management level of the universities.

The importance of combining interests is shown in the peripheral region of Crete (TSIPOURI *et al.*, 2000b). This region is characterized by the absence of institutional contacts between the universities and actors engaged in regional governance. This is partly due to the absence of formalized links between the

University of Crete and the Technical University. Those interviewed suggest that the deeply rooted antagonism between the two sub-regional areas of Heraklion and Chania seems to have been transferred to the academic system. Despite the relatively short distance between the two universities, they share no common infrastructure and each one tries to promote its own activities against the other. In isolated cases professors from the two establishments have applied for common projects, but again these are personal rather than institutional contacts and they are the exception rather than the rule.

Although the universities in this category do not show intensive regional involvement in socio-economic terms, they often fulfil wider regional missions by supplementing gaps in regional cultural provision. For example, the universities in the North East of England in the UK complete the cultural landscape of the region by providing facilities such as museums, galleries, theatres and other services and events. This is similar to Crete where all cultural actions organized by the universities target the whole population.

TRADITIONAL UNIVERSITIES IN CORE REGIONS

Universities in this category are located in the central metropolitan regions of their countries. Most of the central regions studied in the UNIREG research are the seats of the national government and the main economic regions in their country. Examples are London, Madrid, Dublin, Amsterdam, Helsinki and Athens. The universities in this category often belong to the most prestigious, oldest, best endowed and most internationally focused in their country. The engagement of these traditional universities in their region is less visible in terms of a coherent system of regional engagement than in either the first or second categories of types of universities and regions. There is evidence that these universities, more than others, engage in their regions on an informal, personal basis. This makes their engagement often less clear-cut and less visible, although not of less importance.

Thus, university representation on boards of regional institutions such as Chambers of Commerce, Innovation Centres and Technology Parks tends to have a more informal and *ad hoc* character at traditional universities in central regions. Conversely, universities in peripheral regions tend to institutionalize informal personal relations into formal and strategically planned networks. In Ireland, for example, the importance of informal linkages among Dublin's main institutional actors engaged in regional development is far greater than in the Shannon region, where there exists a dense network of formal relations between the University of Limerick and regional actors engaged in regional development (BOUCHER and WICKHAM, 2000a, 2000b). The same situation applies to Greece. In

Athens, the involvement of academics takes place on an *ad hoc* basis: informal engagement by certain university research teams or departments is the most important basis of regional engagement (TSIPOURI *et al.*, 2000a). Informally, most consultative committees include the input of universities. For example, in Attica the Technical University played a role in the creation of the Lavrion Technology Park, and the University of Athens is the chief scientific adviser to the region for the Regional Information Society Initiative (RISI) and RISI Plus of Attica.

One explanation for this informal character of engagement could lie within the content of regional engagement: the local is often also the global in cities like London, Madrid, Dublin and Amsterdam. When universities are engaged in these central regions, this does not mean that the content of their relationship is of a local or regional character. The groups and institutions that the universities interact with in the region are seated within the local area, but their business is nationally and globally as well as locally or regionally oriented.

Interviews with university management suggest another explanation. Traditional universities often perceive that increased regional engagement detracts from their national and international reputations in teaching and research. These universities that serve as elite institutions in their own national or state systems of higher education often attach a negative connotation to regional engagement. They primarily see themselves as national and international institutions with a global disciplinary orientation of academic scholarship that privileges high-level theory over description of local practice. As such, there is often a lack of correspondence between the interests of these traditional universities and those of local actors and authorities.

NEWER TECHNOLOGICALLY ORIENTED UNIVERSITIES IN CORE REGIONS

The universities in this category are also located in or near the core regions of their country, but most have a technical character and a vocational orientation. Many of them were initially regionally or locally based and were often established in disadvantaged communities. More recently, a number of these newer universities have strategically used their locations to market themselves in niche terms as more regionally engaged in the core and to participate in sub-regional or local regeneration schemes. Some also emphasize their role as cultural centres for their sub-regions or local communities. For example, London Guildhall University on the fringes of the City of London lies between highly contrasting districts of wealth and poverty and is engaged in a number of initiatives with a wider cultural community element (CONWAY *et al.*, 2000b). Further, the University of East London has regeneration

at the core of its mission, and works closely with local authorities and colleges in this respect.

A good example of university involvement in regeneration schemes is the way Dublin City University has created an actor network in the area around the university – the Ballymun local community and the north Dublin area – as part of its strategic policy to redevelop this part of the Dublin sub-region (BOUCHER and WICKHAM, 2000a). The university's policy includes small business development, tackling educational disadvantage and attracting cultural, sporting and other facilities to North Dublin. Many of these proposals have been put into practice in institutional form by the university through alliances such as the North Dublin Development Coalition (NorDubCo).

The universities in Madrid represent a special case of those that have emphasized their role as cultural centres since, during the dictatorship, the universities played an active role in the diffusion and promotion of international cultural trends to the country and the region (GARCIA and MACIAS, 2000). Although this role has now been diluted, the universities continue to complement the region's cultural provision, for example, in joint initiatives with the regional government for projects such as the building of a concert auditorium in Madrid.

CONCLUSION

The research discussed in this paper shows a range and level of regional engagement by European universities in their regions. These tiers of engagement are influenced by a number of factors, principally the type of university and type of region. These factors influence the ability of universities to engage in a coherent regional system in which regional stakeholders work together to develop the overall capacity of human resources in the region.

Universities that are comprehensively engaged in their region's development tend to be single relatively large scale universities located in peripheral regions. In particular, the universities of Joensuu, Limerick and Twente, located in the peripheral regions of Finland, Ireland and the Netherlands, respectively, tend to be more directly integrated into regional institutional networks and play a critical role in their economic, social and cultural development. Despite the integrated networks, these peripheral regions still invariably lag behind the measurable socio-economic development of their core metropolitan regions. One could argue, however, that these regions might lag further without these multi-level networks that incorporate universities.

This is not to say that other types of universities in peripheral and core regions are disengaged from their region's development. However, the role of multiplayer, traditional and newer technologically oriented universities in the development of their core and peripheral regions tends to be inhibited by competition and

hierarchy effects. Multiplayer core and peripheral regions tend to be characterized by competition between the universities for institutional dominance, reducing their range and level of regional engagement. Traditional universities, whether in single or multiplayer regions in the core or periphery, tend to be more concerned with their position in the national and international hierarchy of universities than with engaging in their region's development. This hierarchy effect often combines with the competition effect to decrease the regional engagement of newer technologically oriented universities in multiplayer core

regions. These universities compete with each other and against the prestige hierarchy that privileges traditional and older universities in the region, and often compensate by deepening their engagement in the sub-region or local community.

These results suggest that researchers, university administrators and policy makers should be more aware of the range and levels of regional engagement by universities, and the factors that influence the tiers of engagement by universities in their region's development.

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