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Recommended Citation

Hazelkorn, E. (2005). Institutional Mission vs. Policy Constraint?:Unlocking Potential. *Higher Education Management and Policy*, vol. 17, no. 2, pp.43-60. doi:10.1787/hemp-v17-art10-en

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Institutional Mission vs. Policy Constraint? Unlocking Potential

by

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The research-intensive and competitive knowledge society is putting HEIs (higher education institutions) under the spotlight. While many HEIs around the world do not proclaim or wish to be research-intensive institutions the majority desire to intensify their research activity because it is seen as a sine qua non of higher education. Accordingly, HEIs are busy making critical strategic choices concerning human resources, the research environment, the teaching-research nexus, organisational and management structure, and funding. Governments are also making choices, using policies and financial instruments to help shape institutional mission, priorities and HE systems. But if governments genuinely desire to widen access to the knowledge society and achieve a greater contribution from higher education to economic and social development more is required. This paper applies Porter's diamond of competitive advantage to illustrate the complex relationship between institutional mission and policy constraints, proposing changes in strategy and policy to unlock potential. There are important lessons for both institutions and government.

"For 35 years, there has been a sense of drift in the definition of a university. We need to identify much more clearly the great research HEIs, the outstanding teaching HEIs and those that make a dynamic, dramatic contribution to their regional and local economies" (Charles Clarke, UK Secretary of State for Education, THES, 6 December 2002).

"What defines a university? To what extent do scholarship, teaching and research each mark a university as being such, and – why?" (Brendan Nelson, Australia Minister for Education, Science and Training, Higher Education at the Crossroads, 2002).

"Should all HEIs continue to have the dual role of teaching and conducting research? 'It is, of course, not the norm everywhere. The Grandes Écoles in France and arts colleges in the US successfully focus on scholarship rather than research'" (Noel Dempsey, Minister for Education and Science, Ireland, during Ireland's Presidency of the EU, 2004).

Setting the agenda

The nexus between higher education and research has been one of the unwritten "rules" since Humboldt first conceived the "unity of teaching and research as the centrepiece of his new idea of a university" (Schimank and Winnes, 2000). Since then several models of the relationship have developed, with the French promoting a pre-Humboldtian systemic divide between teaching and research. The debate has become heated in recent decades, with some arguing, *inter alia*, for the coexistence of such activities based upon dynamics of the global knowledge society/society, the public good or coexistence with teaching, while others argue for increasing incompatibility based on differences in capacity and capability, quality, working conditions/ needs, and constraints of the public, institutional and national purse. Unfortunately, for many, the research university has become the default mode.¹ While this particular debate is not the subject of this paper, the role of research lies at the heart of almost every discussion about the mission and strategy of higher education in the 21st century.

Today, governments are thinking much more strategically about research and knowledge production because the role of knowledge production is now intrinsically interlinked with the geo-political positioning of nations. There is also increasing evidence that knowledge production is no longer the special preserve of HEIs; new knowledge today is produced by a multiple of organisations in the public and private sphere, and in partnership between these spheres. Higher education is only another player – albeit an important one – in a complex global knowledge-intensive industry. Accordingly, government is becoming much more directive in the role that it believes higher education should play in the future, and the task of growing research capacity and capability has become a key focus of government policy. In response, HEIs are (re)examining their mission, strategies and organisation. It is no longer possible for either policy-makers or educational leaders and managers to see these two activities as separate. Growing research is both an institutional and a national strategic concern. However, institutional ability to overcome "barriers to entry" may be very difficult if the environment in which it operates is perceived as hostile or constrained. This has led to tensions between institutional mission and government policy.

Given this context, this paper begins by setting out six propositions which frame the underlying themes. The remainder of the paper considers the complex relationship between institutional mission and government policy, returning in the conclusion to map suggested actions against the six propositions. The latter were derived from the views of over 25 new HEIs from across 17 OECD countries which form the basis of a major study, *Growing Research in New Universities* (Hazelkorn, 2005; see also Hazelkorn, 2004). While that study focused primarily on institutions established post-1970s, their experiences can provide lessons for HEIs and policymakers around world.²

Proposition 1: As labour markets mature and professional/academic disciplines move up the value chain, research is essential to underpin teaching and maintain "glocal"³ relevance. *This* is institutional development not mission drift.

Proposition 2: Knowledge and technology transfer activities are incomplete without capacity-building strategies that enable HEIs to expand their ability to conduct research.

Proposition 3: "Innovation" does not only occur in science and technology, but equally in the social sciences, humanities and the arts.

Proposition 4: In order to widen access to knowledge and participation in the knowledge society, all HEIs should participate in knowledge production and dissemination.

Proposition 5: The fundamental flaw with concentrating knowledge production in only some HEIs is to suck innovation out of the regions, thereby undermining the knowledge society.

Proposition 6: If governments wish to encourage balanced national social and economic development, then targeted actions and policy instruments are critical to this process.

Problematising the government-university relationship

Porter's (1990) diamond model of competitive advantage provides an interesting way to understand the complex economic and policy environment in which HEIs are now operating and help explain why some institutions are more successful at research. Porter's model seeks to go beyond *comparative* advantage which usually consists of inherited factors of production, like cheap labour or energy, or natural resources to consider *competitive* advantage which is created. Widely adopted in the 1990s as a framework for shaping regional and national industrial strategies, it was conceived around the concept of the "home base". Essentially, the economy cannot be understood as a whole but via specific industries or, preferably, industry clusters. He cites four interlinked factors: factor and demand conditions, organisational strategy, and regional/(inter)national relations. Figure 1 adapts the model to reflect the experiences and actions of higher education.

- Factor conditions: this includes adequate infrastructure and funding, availability of research competence and capability, etc.
- Demand conditions: this includes relevance and interest in the research and academic output, as measured by *e.g.* published papers, patents, commercialisation opportunities, consultancies, etc.





Source: Adapted from Curran (2000).

- Organisational strategy: this includes the management and organisational structure, including support services, and decision-making and policies choices.
- Regional/(inter)national relations: this includes membership and participation in collaborative networks and partnerships, with other HEIs, industry or the wider public sphere, and the extent to which the HEI is fully conversant with global factors and competition.

Two factors located outside the diamond but critical to it are government and chance. Regarding the latter, there is no magic wand for being successful, and there are always unknown factors which can arise from time-to-time which can tilt the balance towards success or failure. For Porter, this is the concept of "chance". For HEIs, the role of government can be pivotal; it determines the higher educational system and the role of individual HEIs including mission, governance structures, funding and fees structures, student numbers, and evaluation of outputs.

Porter's model works by illustrating the complexity of a dynamic and competitive environment. Ideally, all factors are contingent upon each other, and no single factor is alone capable of achieving success.

"Advantages throughout the 'diamond' are necessary for achieving and sustaining competitive success in the knowledge-intensive industries that form the backbone of the knowledge economies" (Porter, 1990, p. 73).

There is a menu of possible institutional or enterprise strategies; the organisation's role is to create the conditions whereby the four corners of the diamond work together. The significance of this model is that it introduces development and growth as part of a complex web, in which government is a critical partner. In this respect, Porter's diamond has "enriched policy discourse" by introducing a "richer understanding of the sources of industrial development and a menu of industrial policy options that are obscured or denied, by the market failure framework" (Best, 2001, p. 8). To paraphrase Best: every HEI strives to develop a distinctive mission, but every HEI also operates within a national and increasingly global higher education system. Many HEIs believe that their ability to make the four corners of the diamond – factor and demand conditions, and organisational strategy and spatial or regional/national relations – "mutually reinforcing" (Curran, 2000, p. 397) are plagued by government which often acts as an inhibiting factor.

The next sections look at the various components of the "diamond". What are the policy and strategy options for HEIs? What is the role of government? To what extent can changes in strategy and policy widen the room-for-manoeuvre and unlock potential?

Institutional strategic choices

HEIs are busy making critical strategic choices concerning human resources, the research environment, the teaching-research nexus, organisational and management structure, and funding. Institutional priorities show a direct correspondence to national and international priorities – not surprising in the context that government, either directly or indirectly via funding agencies and evaluation exercises, acts as both policymaker and funding agency. These choices are, perhaps inevitably, creating tensions.

"Since most faculty teach, and many faculty perform public service, but fewer win competitive research funds from government or industry, research is the activity that differentiates among and within HEIs" (Slaughter and Leslie, 1997, p. 17).

Differentiation is strongly influencing student choice, funding agencies, employers, industrial and other partnerships, etc., and membership of some discipline and sector organisations (nationally and inter-nationally). Many HEIs

Porter's Diamond	Institutional policy	Indicative actions
Factor conditions	Invest	Investment strategy, and realign budgets to support research and/or to disproportionately support research active staff or internationally competitive research.
	Establish appropriate organisational structures	Establish organisational structure with designated positions at college/departmental level, including a "graduate school", and provide appropriate research facilities.
	Research clusters and centres	Funding and support mechanisms used to encourage the growth of research groups, capable of winning sizeable external funding and recognition.
Demand conditions	Apply performance indicators	Match internal evaluation processes with external processes to ensure research is meeting international standards and use the results to help shape priorities, funding mechanisms, recruitment, etc.
	Limited number of research priorities	Develop institutional agenda-setting mechanisms to preferentially support internationally-competitive domain only.
	Align funding, recruitment, etc., to research priorities	Ensure that organisational priorities at teaching, funding and support level reflect "glocal" priority domain.
Regional/(inter)national relations	Strategic alliances with other HEIs or industrial partners	Identify key industrial and civic/government organisations which match research strengths and establish partnerships.
Institutional strategy	Presidential leadership	Endorsement of research strategy by senior management.
	"Culture of scholarship"	Proffer wider definition of scholarship which recognises that not everyone needs to be involved in research.

Tableau 1. Approaches used to grow research capacity and capability

Source: Adapted from Hazelkorn, 2005

feel that taxonomies, ranking systems and "league tables" are contributing to a "prevailing attitude amongst the establishment to the new HEIs" akin to a cartel. They perceive themselves being placed into a "second tier sector of teaching institutions relying on hand-me-down learning from a closed shop of wealthy research HEIs" (King, 2002). Thus, for many, there is a great sense of urgency influencing their decisions. One respondent said it had only five years while another said it had only three years to "get teachers to national research recognition [level] or lose funding".

Despite differences in origins and context, all HEIs are actively grappling with the complexities of research capacity and capability building. While newer institutions have not been well-resourced for research or fared as well competing for external funds, this has not deterred them. Summarising initiatives in the abovementioned study, nine thematic actions are identified and mapped against Porter's diamond (see Table 1). What kind of institutional strategic choices or organisational changes are HEIs making, or other initiatives are they introducing to grow research capacity and capability? How is the organisation creating the conditions whereby the four corners of the diamond work together?

Factor conditions

Inadequate infrastructure, and weak research competence and organisational structures are hindering the growth of research in many HEIs. Newer HEIs in particular suffer greater "disadvantage" but in some instances, the comparisons may be relative. Securing research funding and developing an investment strategy are now viewed as critical to the success of all HEIs. Funds are usually distributed via a resource allocation model, using performance indicators, to support research active faculty, niche fields, interdisciplinary or new fields of investigation, etc.

While research and scholarship is still grounded on the activity of individuals, it is less and less conceived of as an individual activity. A professional approach to research organisation and management via the appointment of a Vice Chancellor (or similar level post) to lead research and development, and establishment of a research office are now ubiquitous. Most HEIs are also actively developing strategies and policies to shift the locus of activity away from individuals working on their own and towards teams or clusters of researchers, focused on timely outcomes. Centres – within departments or semi-autonomous – are the central spine of the research infrastructure, facilitating large teams with entrepreneurial missions and promoting interdisciplinary projects with external partners. Given the critical role that research students play within the research enterprise, many HEIs are choosing to establish "graduate schools".

Demand conditions

Performance indicators, evaluation exercises and other international benchmarking activities are now used widely by HEIs to help improve quality by aligning research with international best-practice and influence priority setting. Competitive funding – whether from research councils, enterprise organisations, industry, etc. - acts as a Darwinian mechanism effectively placing a "value" on research. Traditionally, HEIs had research strength across many disciplines. Today, given the level of competition and limited resources, the perceived wisdom is that future success is a function of specialisation or niche areas in fields of advantage or competence, which are influenced by national priorities and "glocal" considerations. This approach is often matched by decisions to target financial and physical resources to the limited number of research priorities or subject groups, and research active faculty. In this way, HEIs are seeking to establish pockets of excellence which may have far-reaching effects on the rest of the institution. In addition, they are ensuring that HR policies are fully aligned, using recruitment and promotional opportunities to award and reward achievement and potential.

Regional and (inter)national relations

In an era characterised by globalisation and internationalisation, HEIs operate within and are determined by a complex socio-economic environment, which is increasingly more competitive and where the stakes are high. As Delanty (1998, p. 15) observes, "knowledge is increasingly being globalised - detached from its traditional reliance on the nation-state and its custodians, the intellectuals and university professors [...]". Thus, an institution's ability to contribute to learning and "the reproduction of the knowledge of individuals or collective agents" depends on establishing a close interaction between science, research and development (Lundvall, 1992, p. 2). Collaboration with external partners and the regional/national economy is now essential to developing programmes and sustainable research. Many HEIs have established an industrial liaison or technology transfer office or knowledge transfer activities. Others have emphasised the broader importance of collaborative research networks or centres, especially with other academic and industrial partners. The implications of this debate are especially significant and potentially valuable for newer institutions, since many of them were established in areas - outside and inside urban conurbations - previously under-serviced by established universities and with a strong remit for partnership.

Institutional strategy

Many HEIs say that the key to success is to embed research into the culture of the institution. This means ensuring that research is seen to be a clear objective of the senior management team, and most importantly and prominently, the president or vice chancellor. But HEIs are comprised of what Boyer (1990, p. 27) called a "mosaic of talent"; in recognition, some HEIs are championing a "culture of scholarship" to recognise and reward a wider conceptualisation of research and academic work. This strategy calls for careful balancing between motivating, mentoring and facilitating research-active faculty, while also ensuring that teaching-focused faculty do not feel underprivileged or disadvantaged (Hazelkorn, 2003). There is a clear realisation here that neither all faculty nor all institutions will be research active to the same extent.

Experiences elsewhere and throughout the literature suggest a similar list of targeted actions. Zajkowski, and Dakin (1997) identify the importance of research leadership, tying performance to "employment status" via promotional opportunities, and establishing a critical mass to ensure the "dynamics of the research group". Geiger (1993, pp. 283-295) illustrates how both Georgia Institute of Technology and the University of Arizona, which had "operated in a milieu in which research was little understood or appreciated", were radically transformed by consciously exploiting competitive advantages, adopting the mantle of regional economic development, and having a flexible administration which was receptive to innovation. A UNESCO seminar on research management reached similar conclusions: focus on strategic planning, human resources training, international co-operation, expanding the teaching-research link, and increasing the social recognition of research (Gutiérrez, 1996). If there is a broad consensus around the list of key actions, why are some institutions more successful than others at growing research?

The role and influence of government⁴

Many HEIs across the OECD strongly believe that government policy favours established institutions, that the criteria and rules for research funding are antipathetic to new disciplines and new HEIs, and that government policy "deliberately encourages operational differentiation" (Clark, 1996, p. 22). Meek and O'Neill (1996, p. 74), and Price (1996, p. 244) observe that older universities resent granting "equality of esteem in mission" or sharing "research spoils" with newer HEIs. Likewise, Coaldrake and Stedman (1999, p. 21) suggest that efforts to reinforce or reintroduce a binary in HE systems in order to "concentrate research funding in research universities" can be interpreted as nothing less than government endorsement of a "selfinterested claim". While national contexts and circumstances cannot be ignored, there are sufficient similarities to suggest that experiences cross national boundaries and operate almost irrespective of political party in power. Experience strongly supports the view that difficulties impeding the growth of research at newer HEIs are not likely to be overcome by conventional means. In other words, without active and selective use of policy instruments, many HEIs will find it increasingly difficult if not impossible to overcome barriers to entry.

Ideally, new institutions need a less competitive and more co-operative environment, but this is unrealistic in today's world. Instead,

"[...] the type of strategy most likely to achieve the best results would involve active and selective state policies to build up industries capable of overcoming barriers to entry" (O'Malley, 1989, p. 31).

This conclusion arises from the fact that the competitive advantages that older institutions have been built up over time are by now very great. Some institutions are better placed than others, due to the value society places on research, the means to identify and exploit exceptional and niche advantages, the ability to align competence with national/regional strategic goals, access to funding sources and the management of internal organisational and HR issues. Over time, close relationships have also developed between policymakers and dominant players. Thus, if governments genuinely desire to widen access to the knowledge society and achieve a greater contribution from higher education to economic and social development, more is required.

Tableau 2.	Government actions and policy instruments to encourage growth
	of research in late-developers

Policy	Indicative actions
Widen access to the knowledge society	 Remove legislative and other constraints on operation and development of HEIs. Target grants to enable new HEIs to meet 21st century mission obligations. Increase capacity and competence at sub-national level. Support linkages between HEIs and region/community and SMEs. Establish investment fund as part of regional/spatial strategy.
Overcome late-development	 Provide "head start" or "catch-up" grants to build infrastructure, <i>e.g.</i> laboratories and research libraries. Target funding for staff development, mobility and HR strategies. Support research training and flexible career development opportunities, particularly aimed at new researchers and women. Strengthen institutional/research management and leadership capabilities.
Benchmark to support diversity	 Re-examine definitions of research and criteria/rules for competitive research. Recognise and reward/fund improvements and potential in research. Fund research according to wider metrics. Head-start, differentiated and targeted funding, over reasonable growth periods, for new HEIs and disciplines.

Source: Hazelkorn, 2005.

Based on institutional experiences, the next section suggests some policy recommendations which could help underpin and build diverse HEI missions and promote teaching, research and service for the knowledge society. Actions are grouped under three policy objectives (Table 2): 1) Widen access to the knowledge society, 2) Overcome late-development, and 3) Benchmark to support diversity.

Widen access to the knowledge society

Across the OECD, governments are "responding to increased competition for shares of the global market" (Slaughter and Leslie, 1997, p. 54ff) by asking how higher education can be restructured to more effectively and efficiently be an economic driver. Many governments are responding by focusing research resources on a small number of elite universities or departments, and on a selected number of research themes. This approach is coming under criticism as evidence suggests that concentrating research capacity in a few centres could suck innovation out of the regions. The Lambert Review of Business-Industry Collaboration (2003, p. 6) warned:

"[...] proximity matters when it comes to business-university collaboration. SME's in particular, find it difficult to work with research departments on the other side of the country. If resources are increasingly concentrated on a small number of world-class research departments, there is likely to be a negative impact on the level of business-university collaboration in the United Kingdom."

Other studies have also suggested that a significant event-horizon exists – the greatest knowledge and technology transfer occurs within 50 km. A study of the Swedish economy argued that access to/participation in the knowledge society is critically dependent on geographical proximity to research and knowledge expertise (Lindbeck et al., 1994) while a report from the German Patent Office revealed that people who filed patents relied significantly on people within their immediate region as exemplars of "priorart". The "Silicon Valley" is a prime example. Because higher education institutions (their staff - both academic and non-academic - students and graduates) are important generators of wealth, producers of new knowledge and new knowledge workers, and consumers of products and services, HEIs are major actors within a "learning region" or "creative economy" (see Florida, 2002). Thus, in order to widen access to knowledge and participation in the knowledge society, it is not irrational that all HEIs participate in knowledge production and dissemination. Yet, within the group of HEIs which participated in the OECD study, only Sweden and Denmark appear to be committed to the tradition of research-based teaching.

Governments need to unlock HE potential by removing legislative and other governance constraints which heretofore have impeded the ability and capacity of many universities to respond quickly to new opportunities. They also need to ensure policy moves beyond the 20th century binary between education and training, and reflect trans- and inter-disciplinary thinking. Consideration should be given to targeted "glocal" policies and initiatives that enhance and widen participation in the knowledge society as part of a nationally balanced socio-economic strategy. It should aim to encourage and support partnerships between the academy-industry-government-community, exchanging and co-generating knowledge and understanding, and enhancing innovation. Partnerships should build upon and link national and European innovation systems by embedding the various elements and relations of creating, preserving, transmitting and applying knowledge. Practical steps include the introduction of targeted funding or incentive programmes aimed at supporting the breadth of research endeavours, including university and business/community partnerships, regional or sub-national focused and inter-disciplinary projects, and collaboration with other institutions. Formulaic funding has met with mixed reviews because it is often seen as reinforcing existing vagaries of history and institutional status.

Overcome late-development

While all higher educational institutions face difficulties operating in the new global competitive environment, newer HEIs face particular challenges associated with late-development relative to more well-established or mature universities. These include: inadequate facilities and infrastructure, lack of research capacity and competence, employment and career issues, funding for new(er) disciplines, etc. These factors have contributed to an uneven playing field, especially in competition for research funding. Some governments offer targeted funds for newer institutions to "catch-up" but the timeline is usually too short and too little to overcome significant gaps. Government policies and initiatives need to cater for both issues through a significant investment strategy. In this respect, government must avoid simply mimicking the facilities and fiscal standards that have evolved for traditional institutions. Instead, it should encourage HEIs to become models for innovative facilities development, planning and partnership strategies, as well as benchmarks for accountability.

Benchmark to support diversity

Many HEIs believe they are being driven towards a single definition of university and research activity, which is dictated by the established universities and disciplines, by policy-makers' own experiences, and in response to single or narrow funding streams. As long ago as the 1960s, Reisman (in Shattock, ed., 1996) suggested that insistence on a national standard enforced via funding mechanisms and the external examiner system, in countries such as the UK, had unwittingly created an almost monolithic concept of a university which has made it difficult to create alternative or diverse models. Today, evaluation systems provide useful benchmarks but they also act as "gate-keepers", restricting entry to new researchers, newer disciplines and new HEIs in general. Technology foresight studies act similarly, contributing to narrowing the fields of investigation, new ideas and new theories by continually weighing some "academic" outputs more highly, and/or skewing the HE research agenda in favour of the "specific short-term applied knowledge needs of research buyers".

This narrowing of research fields and players contradicts our understanding of how knowledge is produced and disseminated. It is now widely accepted that as knowledge-intensive institutions, HEIs play a significant role in the national innovation process and the wider global economy. Accordingly, calls for greater inter-action between the university and industry are now the centre-fold of government policy across the OECD and beyond. Current privileging of Mode 2 (Gibbons *et al.*, 1994, 2002) knowledge production arguably gives formal recognition to the intellectual and strategic importance of collaborative and interdisciplinary work focused on useful application, with external partners, including the wider community, pioneered by many newer HEIs. Together these arguments acknowledge that higher education's contribution to knowledge production goes beyond traditional interpretations of research, which is usually understood as expensive "basic" blue-sky discovery conducted in research-intensive universities.

Because the criteria for excellence/success in the new economy are not entirely clear yet, governments should consider adopting a variety of measures that will genuinely facilitate and support research and innovation and underpin diverse institutional missions. Benchmarking exercises should be updated to fully endorse the importance of (basic/applied) research, professional and creative practice, and knowledge and technology transfer activities, with appropriate funding. This means acknowledging that innovation also occurs in the humanities, social sciences and the arts. For example, one of Europe's major growth sectors is the cultural industries,⁵ including design, but this field has been largely ignored by funding agencies. According to one participant in the aforementioned study:

"[...] there is an immense amount of interesting and possibly important things to investigate, things that may be studied with scare equipment and current expenses budget...It would be very good for universities, *i.e.* for students and the quality of their education, that a system to fund non-expensive research was implemented at a large scale." Critically, head-start, targeted and differentiated funding with reasonable time-lines are required for new HEIs and disciplines.

Unlocking potential

Increasing evidence shows that knowledge-intensive industries hold the key to economic growth, and inversely, "knowledge rich countries will grow faster than knowledge poor countries [...]" (Best, 2001, p. 5). Given the interconnectedness between new knowledge production and the global positioning of nations, growing research capacity and capability is now both an institutional and a national strategic issue. This research-intensive and competitive environment is putting all HEIs under the spotlight. Porter's diamond of competitive advantage illustrates the complex relationship between institutional mission and policy constraints. While there are various strategies and policies within the remit of institutions, these are nuanced by national circumstance, level of maturity, and the cultural and political milieu including party-political and ideological perspectives. This has led to tensions between institutional mission and government policy, suggesting that in many instances what many HEIs want to do is not necessarily what government wants. Thus, many HEIs appear to be pursuing research by fair means or foul.

Many (newer) institutions were established to focus on local and regional needs, and develop and help "retain an *educated* manpower in the area". For some, their role was originally viewed as "teaching only" but with a specific commitment to relevant knowledge and applied learning. Some were allowed to undertake limited research activity, but often with an emphasis (only) on development and consultancy. Over time, and commensurate with the global significance of the knowledge society, the commitment to providing "economically useful skills with industrial relevance" and ensuring that "academic activities are aligned with the economic development of their region"has become inextricably bound to offering advanced qualifications and growing research capacity (Proposition 1).

According to Brennan, there are two dimensions to a research culture. One understands research as an institutional activity, conducted in order to maintain the intellectual rigour of the institution and its constituent academic units. The alternate sees research as part of a national research and development system, connected with issues of commercialisation, national social and economic benefit and competitiveness. Institutions which are able to connect the two activities are likely to operate increasingly at an international level of excellence. Its research activity will be sustained via the benefit of significant research funds. In contrast, those which focus primarily or only on the former are likely to continue to struggle to maintain even a modicum of "effective research" (quoted in Turpin *et al.*, 1996, p. 28). For many HEIs, success has been achieved nationally and internationally by pioneering research and innovation in new (interdisciplinary) fields underpinned by developments in technology and in partnership with industry and the wider community. Indeed, it's highly questionable whether the types of partnerships and knowledge and technology transfer opportunities, which policymakers advocate, will or can emerge without the development of expertise via research (Propositions 2 and 3).

Many (new) HEIs face particular barriers to entry, which include infrastructural features such as their relatively poorer resource base and scale of production/activity. Many find policy and funding mechanisms unfavourable. While established providers share strong competitive advantages, late developers have the disadvantage of starting late into a congested marketplace. These barriers to entry are rising, widening the gap between research/knowledge rich and research/knowledge poor HEIs, and their students and faculty. While it's unrealistic to assume that every HEI or faculty member will be research active to the same extent, the identification of who can do research, who should do research, and what kind of research should they do is critical. If HEIs are to play a key role as engines/facilitators of development, it makes little sense to "keep research entirely out of vocational or undergraduate programs and to thereby confine half or more of postsecondary institutions to a posture of teaching only (Clark, 1995, p. 244)" (Proposition 4 and 5).

Over the years, "many HEIs, especially the older ones, have played, and still play, a critical role in the process of nation-building and the formation of a national identity" (OECD, 1999, p. 25). Florida (2002, pp. 290-293) argues that HEIs play three interrelated roles, being centres of cutting-edge research, talent attractors and helping to create a progressive, open and tolerant environment. While an HEI plays a pivotal role, it must interact with a community which has the "capacity to absorb and exploit the innovation and technologies" it generates. Rather than seeking to concentrate resources within a few institutions, greater consideration needs to be given to incorporating higher education development within an overall spatial strategy. If governments genuinely wish to encourage balanced national social and economic development appropriate to the 21st century, positive policy intervention is required (Proposition 6).

In conclusion, HEIs sit in the midst of a complex set of relationships, whose destiny is relative to changing circumstances not all of which are in their control. Government strategy and policies can both help and hinder their performance. As one participant observes:

"Government strategies both help and hinder with the greatest significance. They help because the budget of universities is determined to a fair extent by the competitive research performance. They hinder because the government sees us as a new university and does not encourage us to do too much research (which indirectly affects our funding)."

"Institutional recognition has also helped and hindered at the same time. Our university is recognised by industry as the most accessible university and therefore most of the research funds from industry come to us. The Government is aware of this, therefore they do not give us enough research budget, thinking that we get most of what we need from industry."

Porter's diamond illustrates the potential for a logjam when the various elements are not "mutual reinforcing". It also suggests that policy options are critical, and institutional performance cannot simply be explained by the market failure framework. Hence, allowing HEIs to engage in research and compete for funding without providing newer institutions with the resources to achieve them means they are in effect competing in a game they cannot win. In this context, the policy effect (or purpose) has been two fold: 1) to reinforce or re-introduce a binary between institutions; and 2) to privilege traditional definitions of research and ignore the implications of new knowledge production. Depending upon the answers to the questions of whether world-class research happens only in world-class universities and whether world-class experts can be found only in world-class universities, serious challenges are posed for both HEIs and government.

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Notes

- 1. I am grateful to Merle Jacob for this term.
- 2. Quotations which are unreferenced are from participant HEI responses; anonymity has been preserved as requested.
- 3. The word "glocal" is adapted from the environmental movement's slogan: think global act local.
- 4. I am grateful to Katy Bindon and Noel Lindsay for various comments.

5. Today, these industries – as identified in EU's Interreg, IST and Culture 2000 programmes – are among Europe's major wealth creators and sources of employment. Recent studies show that 7.2 m workers or 4.6% of total EU employment are engaged in the production of cultural products and services. See Exploitation and development of the job potential in the cultural sector in the age of digitalisation. EC: DG Employment and Social Affairs, 2001; Office for London (1999) Creative Energy, Government, London; UK Government (1999) Creative Industries – a mapping document for the Creative Industry. London. See also Brown, 2004, p. 16: "Reports for the Greater London Authority note that the creative industries sector is the third largest employer in London, the second biggest source of jobs; it has added £21billion annually to London's output and has grown much faster than other industries". See also Florida, 2002, especially pp. 44-66.

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