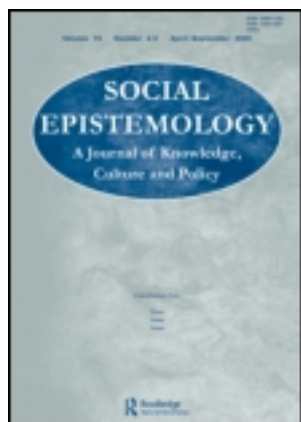


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Tim May & Beth Perry

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# Cities, Knowledge and Universities: Transformations in the Image of the Intangible

Tim May and Beth Perry<sup>1</sup>

*The current higher educational landscape in the UK is marked by complex sets of expectations, accompanied by efforts to encourage universities into diversifying and stratifying functions. Yet the picture is far from clear and a number of tensions and contradictions remain, such as in relation to incentivisation and reward structures which impact differentially on universities. For universities that attempt to translate these agendas into meaningful actions at the local level, the result is a mixture of enthusiasm, engagement, retreat and defence. This article will demonstrate such processes in action through a discussion of the ongoing “Manchester—Knowledge Capital” initiative, which seeks to bring local and regional partners and universities together to create a critically acclaimed global pivot to the emerging knowledge economy.*

*Keywords:* Cities; Universities; Knowledge; Transformation; Diversification

## Introduction

In this article we wish to examine the relations between the knowledge economy and universities. The drivers for the transformations we will outline have particular cultural, political and economic manifestations in different contexts and we shall concentrate here on English universities. However, we also recognise that there are

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Beth Perry is a research fellow at the Centre for Sustainable Urban and Regional Futures (SURF) at the University of Salford, Manchester, UK. Beth’s research is in the areas of urban and regional policy and governance, particularly in relation to theories of multi-level governance and the role of universities in regional development and the knowledge economy.

Tim May is Professor and Director of SURF. Tim is the author of works on social theory, research methodology and methods, philosophy of social science, and organisational change. He is currently undertaking research on regional knowledge transfer, science, and regional policy. He also works for universities, advising them on intellectual, organisational, and strategic developments, and is a member of the Transatlantic Forum on the Future of Universities. Correspondence to: Tim May, 113–115 Portland Street, Manchester, M1 6DW. Email: t.may@salford.ac.uk.

typical features shared across many Western institutions of higher education which have implications for the future governance of knowledge, for which the university is a prime site of production (e.g. Scott 1998; Senker et al. 1999).

In the first part of the article, we examine some of the issues that have brought about change, concentrating on the implications of the knowledge economy. Our particular emphasis will be upon cities and economic growth in order to provide a context for the case study. We then move on to examine general trends in English higher education policy, exemplified by recent debate over the ramifications and implementation of the far-reaching and controversial 2004 Higher Education Act. This is followed by a discussion of our case study, which is based upon research conducted on behalf of four universities within the Manchester city region.<sup>2</sup> In a final section, we draw out some lessons for the future of knowledge production, governance and organisation in universities.

### **Universities and the Knowledge Economy**

The coming of a knowledge-based economy, seen by many as equal in importance to the industrial revolution of the 19th century, is regarded as heralding a change in the mode of production from industrialism and a transformation in the form of civilization itself. In the latter part of the 20th century, the increasing volume of workers involved in distributing, processing and producing knowledge, along with the percentage of GNP and salaries and wages that go to those workers, was held to signify the coming of the information age (Bell 1980). A combination of factors has been credited with producing this effect, including processes of globalisation, the proliferation of high-tech industries, expansion of the scientific base, a movement from manufacturing to a service-based economy, new information technologies and accelerated technological change (Drennan 2002; Neef 1998). There are those who have seen in these developments the potential for democratic enhancement (Toffler 1981), or alternatively, a reduction in employment opportunities (Hines and Searle 1979). The starting point for many of these debates is recognition that knowledge is an increasingly important source of competitive advantage. Putting it simply, the search is now on for “new ways of producing, using and combining diverse knowledges; the same ingredients ... rearranged in new and better recipes” (Bryson et al. 2000: 1).

Building “high value added” economies characterised by high wages, employment and skills is a priority and, while knowledge has always played an important role in human activities (Stehr 1994), the quantity, complexity and speed of permeation of knowledge into modern societies is what marks the current economic phase (De Weert 1999: 52). Accordingly, the development of the knowledge economy requires a re-evaluation, reconfiguration and reconstitution of ideas and actions as a precondition for improved understanding and success.

In the face of these trends, much has been written about the “death of distance” or the “end of geography” (Morgan 2001). The last 50 years have seen the increasing globalisation and internationalisation of markets, economies, societies and

environments that break down the boundaries of time and space. Far from signalling the end of face-to-face and “human” interactions, however, globalisation has been accompanied by an increasing emphasis on regions, localities and cities as engines for economic growth (Cooke, Gomez Uranga, and Etxebarria 1997; Salet, Thornley and Kreukals 2003; Savitch 2002). Knowledge-based wealth creation, it is argued, is founded on building economies of scale, clusters and a critical mass of complementary expertise within a particular location such that knowledge spillovers can lead to innovation, wealth creation and productivity (Florida 2002; Gordon and McCann 2000). Firms, it is said, draw on location-specific factors for competitive success and on resources inherent within local environments (Porter 1990; Simmie 2002).

These factors relate to issues associated with both scale and intensity (Sassen 2001). The development of the knowledge economy has both global and local dimensions, as well as implications for the relationship between cities and regions. Urban and regional scholars are taking more interdisciplinary approaches to understanding the relationship between the global and local, seeing this not as a stark dichotomy but as twin processes which imply, and rely on, each other (Brenner 1998; Storper 1995). In other words, global success is based on local strengths and vice versa. In one report, *Cities, Regions and Competitiveness* (Office of the Deputy Prime Minister 2003), it is noted that cities are “key motors” of the economy, but there is also reference to emerging city-regions which provide a series of benefits (SURF 2006). Cities are seen to provide critical mass, vibrant environments, connectivity, highly paid jobs and concentrations of cultural and leisure activities. Regions, on the other hand, provide space for the development of projects, wider choices of housing, a workforce and skills base, opportunities for countryside leisure and distinctive centres with “niche retail experiences”.

These socio-economic and spatial shifts have profound consequences for matters of social inclusion and economic benefit to cities and regions. They are also core to the future of universities. The development of the knowledge economy and changing notions of scale place universities, as major sites of knowledge production, at the centre of economic and social development processes.

### **Government Aims, Assumptions, and Aspirations for HE**

The above factors have informed a series of policies from the British government designed to provide for closer relations between universities and the public and commercial sectors at different levels of scale. Government pronouncements speak of increased opportunities for developing relations between universities and their communities to mutual benefit.<sup>3</sup> This must be seen in the context of the historical development of the English university system, but space precludes a detailed account here (see Shattock 1996; Warner and Palfreyman 2001).<sup>4</sup> Instead we provide an overview of recent policy frameworks and funding mechanisms as a means to highlight key issues emerging in the English context.

In terms of the specific impact of universities on the economy, the government’s assumptions about this process can be seen in the following statement:

[Universities] produce people with knowledge and skills; they generate new knowledge and import it from diverse sources; and they apply knowledge in a range of environments. They are also the seedbed for new industries, products and services and are at the hub of business networks and industrial clusters of the knowledge economy (Department for Trade and Industry and Department for Employment and Education 2001).

Here, the university is seen to occupy a central place in the production and ensured value through application, of knowledge for the economy.<sup>5</sup> This was reflected in an increasing number of policy initiatives, none uncontroversial, throughout the 1990s which have focussed on the university's social, economic, political and civic roles and the importance of a strong science base as the foundation for competitiveness and skills (*Dearing Report* 1997; Department of Trade and Industry 1998; Trow 1998). Taken together, recent statements take an increasingly instrumentalist view of the university and of scientific knowledge, with an emphasis on the need for universities to achieve excellence in research, teaching and outreach (Department for Education and Skills 2003). The relative importance attributed to each agenda can be assessed by considering the proportions of funding allocated to each university mission—that is, by seeing funding mechanisms as an important policy instrument for achieving changes in orientation and activity in higher education institutions (Dill 1997).

With respect to research, funding allocations from the Higher Education Funding Council for England (HEFCE) have totalled £1,342m for research to be distributed in English universities in 2006–2007, representing an increase of 7.3% over 2005–2006.<sup>6</sup> This is to be allocated according to the results of the Research Assessment Exercise (RAE); universities will receive additional income through competition for research council grants and the overheads they attract. The RAE has taken place in 1992, 1996, and 2001 (see Talib and Steele 2000). The process itself is both complex and contentious—for instance, in terms of its inherent “competitive, adversarial and punitive spirit” (Elton 2000: 281). Indeed, the RAE is driven by criteria of research excellence that have seen the post-1992 universities (formerly polytechnics) perform, on average, less well than pre-1992 universities, which have had both political-economic conditions and cultures more conducive to research success. Aside from peer review, driving this exercise is a prevalent attitude among the government and others in parliament that the top universities in England are under-performing in terms of research excellence as measured against international competitors. An even greater concentration of funding in currently top-performing institutions is assumed to be the solution to the problem. Such thinking is informed by league tables that deploy particular and variable criteria for assessment. In one case, this includes the number of Nobel laureates, highly cited researchers, articles published in *Nature* and *Science*, articles in the Science Citation Index and the Social Science Citation Index and academic performance per faculty. According to these criteria, five UK universities appear in the world's top 50 institutions: Cambridge, Oxford, Imperial College, University College London and Edinburgh (see <http://ed.sjtu.edu.cn /rank /top101.pdf>).

The RAE results thus produce a hierarchy between institutions. Over recent years, resourcing has been phased out to the lower-performing units of assessment (those given a rank of 3a or 3b in the 2001 RAE). The 2006–2007 allocations included a 6.1% increase for those units of assessment consistently performing at the highest level of internationally recognised research across time (5 and 5\* in the 2001 RAE), and a maintained unit of resource for those subjects of national importance, with some internationally recognised research excellence (ranked 4 in the 2001 RAE). Given the number of departments in 3a and 3b categories, the large “civic” post-1992 universities and a number of pre-1992 universities suffer as a result of such allocations. Recognising the limitations of rewarding established subjects in particular institutions, HEFCE also allocated a “research capability fund” for seven subjects at a total of £22.1m, which has tended to map onto the previous 3a and 3b units of assessment.<sup>7</sup> The institutional hierarchies created by the RAE have been the subject of a recent review by Sir Gareth Roberts.<sup>8</sup>

In terms of higher education and social inclusion, the aim of government is to increase participation in higher education to 50 per cent of young people (18–30) by 2010. Although this has been the subject of contention (is it an aspiration, or “real” target?), the total allocation through HEFCE for teaching in 2006–2007 was £4,228m. Of this total amount, £344m was earmarked to support widening participation from under-represented groups. Such developments have been welcomed by university groups, such as Universities UK, as going some way towards maintaining stability in funding during a period of rapid change, and as recognising the additional costs of supporting increased access to HE. Increased finance includes provision for additional university places, some of which are intended for foundation degrees. Foundation degrees do not operate at the level of bachelors degrees, but are vocationally focused and designed and supported by businesses in order to “meet their needs” more effectively.<sup>9</sup> Here we find an incentive for higher education institutions to form partnerships with further education colleges in order to deliver these programmes, and also potentially capture any market in which students wish to take their studies further.

As well as bringing the research and teaching functions of the university to prominence, the shift to concerns with the knowledge-based economy has fed the development of the “third mission”. It is not enough for universities simply to produce knowledge; they must actively transfer that knowledge to industry, user and community groups. The government’s plans for knowledge transfer and exploitation are to be largely funded through the Higher Education Innovation Fund (HEIF), which incorporates the previous Higher Education Reach Out to Business and the Community fund (HEROBC). Funding for the second round of HEIF was announced following the 2003 White Paper; £187m was allocated over the period 2004–2006, which included £16m to fund a network of around 20 knowledge exchange centres. HEFCE policy is that this will support continued interaction of HEI (higher education institution) capacity with business and the community, alongside the establishment of “large strategic collaborations” pursuing “excellence and coherence” for regional needs and promoting and working with small and medium business enterprises (SMEs) to generate and exploit knowledge.

The Office of Science and Technology's mission (recently re-titled Office of Science and Innovation) is to "make the most of the UK investment in science, engineering and technology... to promote the transfer of knowledge generated and held in Higher Education Institutions (HEIs) and Public Sector Research Establishments (PSREs) to the wider economy to enhance economic growth" (<http://www.ost.gov.uk/enterprise/knowledge/>). The *Lambert Review*, commissioned by the Treasury and the Department for Education and Skills in 2002, made a series of recommendations to improve business-university collaborations. These included a new funding stream for business-relevant research and new forms of formal and informal networks between business people and business-led R&D employer fora (Treasury 2003). One particularly important recommendation was the need to recognise excellent research undertaken with industry or other users as of equal importance and value as excellent academic research (Treasury 2003: 133). The *Lambert Review* also continued the trend towards the "regionalisation" of innovation and knowledge exploitation activities, allocating a greater role for the regional development agencies (RDAs) in facilitating knowledge transfer, a recommendation also made by the House of Lords' recent select committee on science and the RDAs (House of Lords 2003).

The government's response to the *Lambert Review* can be seen in the Science and Investment Framework 2004–2014, which aimed to

create a funding regime that promotes and rewards high quality knowledge transfer, addresses demonstrable funding gaps inhibiting the translation of research and expertise into the market, and further embeds knowledge transfer as a permanent core activity in universities alongside teaching and research ... [and to] create a long-term career path for academics and technology transfer professionals who wish to focus on interacting with business and external partners (HM Treasury, Department of Trade and Industry, Department for Education and Skills, 2004: 76).

This has been accompanied by a further increase in the amounts available for HEIF 3—up to £238m for 2006–2008, to be allocated substantially on the basis of a formula in order to make HEIF funding more stable and predictable, and hence more embedded in HEIs' strategic planning. Importantly, HEIF 3 also embodies a model of funding allocation that seeks to ensure that all universities gain financial support for a "broad range of knowledge transfer activities" and that only a "small amount of funding should be allocated by competition". This represents an attempt to address the deficits of previous funding streams which favoured research-intensive institutions and only particular kinds of knowledge transfer activities, thus reducing the ability of many institutions to make strategic investments in this area.

In more general terms, the 2004 Higher Education Act was highly contentious and has heralded a fundamental reorientation in funding systems for higher education.<sup>10</sup> Recognising that a significant downturn in real terms for funding for universities and academic salaries has taken place, the Higher Education Act enables institutions to charge variable fees, up to a basic amount specified in regulations, which is no longer linked to a grant for fees. Institutions that wish to charge fees above this rate will only be able to do so if they have in force a plan approved by the relevant authority—in the case of England the new Office for Fair Access (OFFA). Loans will also be made

available, on an income-contingent basis and with no real rate of interest, to allow students to defer payment of fees. Universities UK estimates that there is over £8 billion of under-funding in research and teaching. Much of this is due to a considerable increase in student numbers without a commensurate increase in fee income from government.

Overall, while the proposals are intended to address this deficit over time, the introduction of a fee variation adds to differences between universities, with the top research institutions pushing for higher levels in order to offset their overall reductions in funding and exploit their position in hierarchy. Indeed, those universities that are part of the Russell Group have been among the most vocal in lobbying for an increased upper limit for variable tuition fees.<sup>11</sup> These elitist tendencies are assumed to be off-set by the introduction of grants for poorer students and bursaries from universities. Yet it is often the ex-polytechnics, those pre-1992 universities which are not so research-intensive across all subjects, and higher education colleges that are successful in recruiting the working-class students that the government wishes to attract but who may be deterred by the new proposals. OFFA is key in this respect and is designed to oversee the universities in terms of their ability to attract such students and to ensure that the introduction of higher tuition fees in 2006–2007 does not have a negative effect on the government's aims of widening participation and increasing the participation rates of under-represented groups.

Two inter-related issues emerge from the above discussion of government aims and aspirations for universities as indicated through policy initiatives and funding streams. On the one hand, expectations of what universities should achieve and the functions they should perform have been enlarged by a focus on the knowledge economy. *Diversification* of mission is encouraging universities to adopt key roles in a number of local, regional and national agendas in terms of their knowledge production, knowledge dissemination to students and knowledge transfer functions. Yet as the White Paper on Higher Education (2003) and Higher Education Act (2004) make clear, the UK's record of scientific excellence is not to be compromised in research and in teaching. Thus we see the creation of 6\* departments (those 5\* departments that have consistently performed at 5\* over time), to which an increasing proportion of monies from the RAE will be channelled, leading to greater research concentration and selectivity. What this means in practice is that universities are not expected to fulfil all roles at all times. Instead, universities are encouraged to recognise their strengths and work in collaboration with other institutions to meet collectively the socio-economic demands placed upon them. Choosing the right strength is now held to be particularly important, given the increasing relationship between specialism, excellence (research, teaching, "third mission") and funding in relation to scales of knowledge generation. The implications, then, are that *stratification* and *specialisation* equally mark the current higher education landscape. Choice, in this respect, is related largely to institutional position and power. And given that funding from the RAE continues to dwarf that available for "third mission" or knowledge transfer activities, there is a jostling for position in the emergent, and as yet uncertain, university hierarchy.



### Manchester: Knowledge Capital

With the above policy contexts and changes in mind, we now turn to how these manifest themselves within our case study region: Manchester in North West England. Again we see issues related to the development of the knowledge economy intersecting with the re-scaling of economic and social activities at regional, sub-regional and local levels.

When the first North West Regional Strategy was launched in 1999, little mention was made of the knowledge economy or of the importance of universities as key assets in the regional economy (North West Development Agency [NWDA] 1999). However, the North West Universities Association (NWUA) was formed at about the same time and has, over the years, worked increasingly closely with the NWDA and other regional partners. This is reflected in the fact that the most recent iteration of the Regional Economic Strategy now dedicates a distinct section to developing and exploiting the region's knowledge base and the role of higher education, university–industry links, and research institutions in the knowledge economy (NWDA 2006). Such developments have taken place in the context of the bottom-up growth of a “regional science policy” for the region, derived as a response both to the developing knowledge economy and innovation agendas and to government policies. Quite simply, there are greater and emerging demands upon universities from their regions.

In 2001, the North West established England's first regional science council, bringing together representatives from industry, regional agencies and the universities to lobby on behalf of the region and advise on and launch the Regional Science Strategy (NWDA 2002). This was published in 2002 and sets out cluster-based actions in five priority areas (biotechnology, environmental technologies, chemicals, aerospace and nuclear energy) with the aim of linking universities in improved ways with industry and regional partners. The model is said to be one of “excellence with relevance”. The Science Strategy aims to have a world-class university in science and technology, thereby offering its support for “Project Unity” (the merger between Manchester University and the University of Manchester Institute of Science and Technology [UMIST]). Those involved in that process have referred to the need to enhance the North West's “big science” potential and to create an extended “Golden Diamond” of research excellence (the so-called “Golden Triangle” comprises Oxford, Cambridge and London). With the interests of the region in mind, the North West Science Strategy also refers to supporting excellence and scientific potential wherever it may be found in the region.

In terms of shifting scales, we have seen the strengthening of both regional and sub-regional tiers of governance over the past five years. First, English regional capacities with respect to economic development were enhanced through the establishment of Regional Development Agencies (RDAs) in 1999. Their aim is to provide coordinated regional economic development and regeneration, reducing the economic imbalances which exist within and between regions and enabling the English regions to improve their overall competitiveness. Regional governance will be strengthened in one form or another as the policies from *Your Region, Your Choice* (Department for Transport, Local Government and the Regions 2002), the government's White Paper for greater

devolution in the English regions, are implemented. While it was originally intended that the North West would be one of three English regions to have a referendum on the introduction of a democratically elected regional assembly in 2004, the “no” vote in the North East has meant that plans for greater devolution have been shelved, at least in the short term. Nevertheless, debates around the shape and scope of increasing regionalisation in England are continuing, despite the absence of a democratic mandate.

Second, we can also see the emergence of a new, almost virtual, architecture of city-regional governance, hitherto masked by a focus on regions and local authorities. Examples have been seen in Greater Cambridge, Newcastle-Gateshead, Greater Nottingham and Greater Manchester (SURF 2003). Many RDAs are now devolving the implementation of aspects of regional strategies to sub-regional bodies, recognising that some issues are better tackled at a lower spatial scale. Local authorities are also collaborating with neighbours and partners to “upscale” their cities and tackle joint issues through a cross-boundary approach. The movement includes health authorities, universities, local education authorities, skills agencies, charities and the police, who are active in their own city-regional partnerships. In a number of cases, the private sector is taking the lead in city-regional thinking, particularly in the arena of economic and planning policy.

In the Greater Manchester context, we see the development of the Greater Manchester sub-regional strategy, led by the Association of Greater Manchester Authorities (AGMA) and ongoing discussions on the establishment of a Greater Manchester Forum. An essential element of this strategy focuses on enhancing the sub-regional core and building on the university assets concentrated within the city region (AGMA 2002: 16). The City Pride initiative (1994) had already brought together the local authorities of Manchester, along with the surrounding authorities of Salford, Trafford, Tameside and Stockport, to tackle a number of economic development issues, leading to cross-authority bodies such as MIDAS (Manchester Investment and Development Agency Service) and Manchester Enterprises. Similarly, the universities within the sub-regional core developed collaborative working through their CONTACT partnership group. Yet, despite all of this activity, it remains the case that, until recently, the universities were not explicitly positioned as being at the centre of economic development processes within the Greater Manchester area.

It is this context that frames the “Manchester: Knowledge Capital” initiative. An initial meeting took place at the beginning of 2002 at which the idea of the “Innovation City” was discussed. The City of Manchester then had discussions with the Work Foundation (formerly the Industrial Society), which produced a study on Manchester’s potential to become an “Ideopolis” through enhanced HEI cooperation with the City, its concentration of knowledge workers and the presence of a medical school and international airport. Such developments fed into the eventual birth of the “Knowledge Capital” vision:

to create an internationally acclaimed “Knowledge Capital” within the Greater Manchester conurbation, which will position Manchester, branded as the Knowledge Capital, at the heart of the knowledge economy, significantly contributing to the economic growth of the nation

and the North West region leading to a healthier city/region with a vibrant, safe and attractive environment in which to live, work and play, for people of all ages, social and cultural backgrounds. (Manchester City Council and the knowledge Capital Partnership 2003)

In this we see global aspirations linked to local realities.

Thus we see that, at the local level, there is recognition of the potential to build economies of scale and scope and the kinds of reinforced partnerships that policy frameworks advocate. Increasingly, this is also being recognised by central government. Manchester is one of six cities that have each been dubbed a “science city” by national government (Newcastle, York, Birmingham, Nottingham and Bristol are the others). The Chancellor of the Exchequer’s pre-budget speech of 2004 outlined plans to boost science and technology in the North of England, starting with Newcastle, York and Manchester, by providing £100 million over the next six years to further the development of their science activities. This is intended to dovetail with the Office of the Deputy Prime Minister’s (ODPM) plans for a £100 million “Northern Way” growth strategy and discussions therein for a “Northern Science Initiative”. While this seems to indicate a recognition by government of the local potentials for science-based growth, it remains to be seen whether such promises are fulfilled and extra resources materialise.

The regional and sub-regional contexts within which “Manchester: Knowledge Capital” takes place shape and frame the ways in which global dynamics are translated into practice. A further set of contextual factors essential to the eventual success of the initiative relate to the institutional and organisational contexts of knowledge production. Accordingly, we now turn to the contexts in which people work in different universities in Greater Manchester, each of which has its own particular history of academic production and pedagogy. Without an understanding of these contexts (which implies a context-sensitivity, not dependence as is often assumed), it is difficult to see how the government’s policy instruments and aspirations might actually work in practice. This is equally the case for national, regional, and local agencies and governments.

### *Knowledge Capital: The View from the Universities*

We undertook 40 interviews and documentary analysis at the beginning of 2003 on behalf of the CONTACT partnership in order to assist it in developing its contribution to the “Manchester: Knowledge Capital Initiative” (hereafter referred to as KC). The CONTACT partnership is a representative organisation of the four universities in the Greater Manchester area: the Victoria University of Manchester, UMIST, Manchester Metropolitan University (MMU) and Salford University. The University of Manchester and UMIST formally combined to constitute a single institution on 1 October 2004. Brief information on the universities’ backgrounds and missions is included in Table 1.<sup>12</sup>

Emerging from the work we undertook were clear differences in attitudes to and expectations of KC according to the institutional positions of those interviewed—and between the universities themselves. The most well developed attempts to clarify the

**Table 1** Profiles of the Knowledge Capital Universities**The Victoria University of Manchester**

The University of Manchester started life as Owens College in 1851, established by a Manchester textile merchant. The College was granted a Royal Charter in April 1880 as the Victoria University, England's first civic university. The federal colleges at Leeds and Liverpool were granted their independence in 1903, creating the Victoria University of Manchester. As a full-range university it has courses covering almost every subject, and has more than 18,000 full-time students, including 2,500 international students from over 120 countries. There are more than 70 departments involved in teaching and research, with more than 2,000 academic staff. In the latest RAE 18 subjects across all the major academic areas received the top 5 or 5\* rating.

**Manchester Metropolitan University**

Manchester Metropolitan University developed initially as a Centre of Technology, Art, and Design from Manchester Mechanics' Institute (1824) and Manchester School of Design (1838). In 1966, all non-degree work was moved from UMIST to the Centre. It became Manchester Polytechnic in 1970 and a university in 1992. With 33,000 students, MMU is the largest non-collegiate university in the UK. 14 subject areas were rated excellent for teaching by the Quality Assurance Agency in the latest review, with research strengths in particular areas of exercise and sport science (RAE 5\*), environmental sciences, chemistry and materials, education, art and design, information and communications and English and literature.

**UMIST**

UMIST can trace its roots back to 1824 and the formation of the Manchester Mechanics' Institute, established by Manchester businessmen and industrialists to ensure that their workers could learn the basic principles of science. By 1905 the Mechanics' Institute formed a Faculty of Technology and worked alongside the Victoria University of Manchester. It achieved independent university status in 1955 and became UMIST in 1966. In 1968, UMIST set up the first industry/academia liaison group. There are 6,071 undergraduate and post-graduate students and 1,213 academic and academic-related staff. All UMIST departments were rated 5\*, 5, or 4 in the RAE in 2001. 64% of research staff are judged to be carrying out work that is internationally excellent.

**Salford University**

In 1896, Salford Working Men's College joined forces with the Pendleton Mechanics Institute to form the Salford Technical Institute, which quickly became the Royal Technical Institute, Salford. In 1958 it split into two separate parts. The Royal College of Advanced Technology went on to become the University of Salford in 1967. Peel Park Technical College went through several transformations to become the University College Salford in 1992. The University of Salford was finally formed from the two parts in 1996. There is a student population of nearly 18,000 and a staff of over 2,500. Research strengths are in the built environment, information management, European studies, and statistics and operational research.

meaning and purpose of KC were provided by those who were championing the process for the universities at the level of senior management (vice-chancellor and pro-vice chancellor levels). Overall, this was a small number of individuals whose remit was either to reconstitute the inside of the university in the name of economic aspirations or, depending upon the institutional power that could be mobilised in the pursuit of their interests, to obtain benefit from these city-region aspirations. The role of senior managers was held at one level to create a vision and infrastructure that would function without too much top-down planning to provide support and incentives to academic staff. At another level, it was simply to create opportunities by moving through the various regional and local political fora, leaving to others the detail of effective and meaningful implementation in their universities.

A clear aim of KC, and one reflected by national government, is that the universities should act in collaboration with each other and with other agencies for the benefit of

the city-region. This was both implicit and explicit in many of the interviews. In particular, one senior manager spoke of a great strength of the city of Manchester being a “mutual trust between the key players”. This was matched by the view of one senior manager in Manchester City Council who said that KC provided a context in which “we construct the new HEI sector in such a way that it interfaces very effectively and coherently with a significantly wider world [than has historically been the case].”

Many of the interviewees, while trying hard to populate the notion of KC with meaningful content, also sought clarification as to its geographical boundaries in an otherwise fluid world. For some it meant concentrating on the North West of England, in which they already worked in collaboration with colleagues in other universities (Liverpool, Preston and Lancaster). For others it must have meant Greater Manchester and, for some, just the conurbation of Manchester. Uncertainty about appropriate levels of scale of activity was thus a source of ambiguity. Furthermore, the idea of “capital” was interpreted as human capital and innovation mixing with cultural, social, economic and physical capital, as well as Manchester seeking to place itself more securely as the “capital” of the North West of England. More fundamentally, even those with a stake in the KC idea itself were not necessarily able to articulate a coherent sense of what it was and what it sought to achieve in a manner that would be meaningful in order to allow academic staff to engage. As a result, the concept of a “knowledge capital” appeared as both everything and nothing. Despite a common underlying enthusiasm and excitement about the potential of the concept, the interviews revealed that engagement for the purposes of understanding and development was variable.

While those further up the university hierarchy tended to be supportive of the KC idea in terms of its potential, staff responsible for implementing the initiative in practice tended to be more uncertain. This uncertainty came from experience of too many “next big thing” initiatives that tended to produce more work without tangible benefit, and a continual feeling that universities were subject to continuous transformation in the image of initiatives or ideas, or simply general ideologies (such as entrepreneurialism), that were intangible. It also came from the institutional incentives that were available for engagement at different levels. As one interviewee put it in relation to practices surrounding the pursuit of international research excellence, KC should be about:

achieving some sort of culture shift within the institution... the notion that you can only be taken seriously if you go to conferences in North America or Munich or whatever and that anything where you dirty your hands on things local, I mean, by definition is seen as trivial... [T]he international and the local can readily co-exist together.

Two issues, in particular, were seen as important in terms of the institutional implementation of KC: first, the creation of conditions that enabled engagement and the development of suitable activities, and second, that those activities then feed into KC in order that it moves from concept to action. What was required for this process was a set of practices that would populate the concept. As one person put it, it cannot just be about “museums and office blocks and such like in the centre, but actually focus on regeneration through knowledge applied to entrepreneurial activities... [T]hat seems

to me to be an excellent extension and the next stage after we've physically transformed the city into something worth living in."

In addition to differences according to institutional position between senior managers and those further down university hierarchies, we could also discern differences between the institutions in terms of how they approached the potential of KC. Interviewees within Victoria/UMIST tended to see the development of KC as one of "added value". In other words, to them the initiative was concerned with repackaging and exploiting existing opportunities for institutional benefit and that of the city as a whole, in terms of the location of the university and its relations with key stakeholders. This concerned the development of relations of mutuality with the city council and other organisations to provide a context and environment for attracting staff, finance, investment, and facilities to Manchester. KC was also seen to provide further evidence of an "innovative milieu" through the development of incubation facilities (for the exploitation of knowledge in, for example, biotechnology), infrastructure (physical and human) and other visible signs of activity: for example, cultural activities in relation to art galleries, theatres and museums. To this extent the development of KC was seen as part of the overall strategy of the "Project Unity" merger, seeking to counterbalance the "Golden Triangle" of Oxford, Cambridge and London and become a "Harvard of the North" and part of an extended "Golden Diamond".

The development of Victoria/UMIST as a world-class research university was illustrated by developments in bio-medical research—for instance, a £40 million complex for bio-medical research relates to what was described as a "bio-medical corridor" in an area of Manchester, and growing relationships between medical facilities, the NHS, pharmaceutical companies and spin-out enterprises. The focus was on positioning the merged institution as an international first-class science-based research university able to attract the brightest students and leading edge academics, and developing the facilities that match these aspirations. In some cases, the international dimension of activities in some departments was tempered by the associations that exist between academics within Greater Manchester and the North West region: for example, bio-medical science and collaborative links with Liverpool. Elsewhere, levels of activity were not necessarily directly related to the locality, although this is not to suggest they would not have local implications. For instance, in terms of the opportunities presented by the merger for new centres of research excellence, one interviewee spoke about a centre for climate change, seeing the merger as an opportunity to "reconfigure into new knowledge lumps... tremendous opportunity for rearranging some of the intellectual furniture... that presents opportunities for new research directions focused on spin off and entrepreneurial activities." In addition, while there are international aspirations, there are also different levels of engagement within Victoria and UMIST. Planning and Landscape and Architecture, for example, have worked on KC design projects and have a long tradition of working with local communities in terms of outreach, widening participation and issues associated with multiculturalism.

At Manchester Metropolitan University (MMU), KC tended not to be seen as a repackaging of existing processes, but as a means of continually cultivating relationships between the university and the region around a number of strategic themes in

which they were investing their energies and resources. These areas of activity were: network for enterprise; innovation in art and design; regeneration; sport and physical activity; clothing, design and technology; and aviation, transport and environment. KC was regarded as enhancing those areas of activity, as well as being transformative; in the process it brought greater recognition to the university in terms of its overall identity. This has been prevalent in terms of creativity and culture—for example, art, design, fashion, and sport. MMU was regarded as having a strong vocational base with a regional focus. The university possessed clear areas of research excellence (seven 4\* and one 5\* department in the latest RAE), but was seen as having a focus on widening participation through outreach activities, enterprise in local schools, the large number of teachers it trains, continuing professional development, and such initiatives as the Community Entrepreneurship Scheme. Problem solving and innovation with local businesses led in interviews to an emphasis upon practical engagement. For example, in terms of fashion, MMU deals with developments and ideas for clothes which retail, rather than high fashion. Thus, the identity and character of MMU was seen to relate to its modes and scales of working, as much as to its specific areas of activity. Overall, KC was viewed as an important means of providing coordination and coherence to a wide variety of activities that saw the university seeking to reach out to people who wouldn't normally engage with higher education.

This latter aspiration was shared with Salford University; one senior manager there viewed KC as an “infrastructure of possibilities”. Here academics and the institutions could form relationships of knowledge creation, production, and sharing for multiple beneficiaries. KC was an aspiration to create a structure within which people can move and be creative. There was also a general sense that KC related to aspirations in terms of the mixed aims at Salford of teaching, research, and enterprise. The flow of knowledge and the movement of people within a defined area were key to this notion. Salford was seen to have notable pockets of research excellence: for example, in the 5\* and 6\* areas of information systems and the built environment, as well as European studies, media, art and design, public health and training in relation to professions allied to medicine. Its reputation in these areas was seen in terms of its distinctive strengths in addressing business, industrial, and commercial interests in, for example, the design and deployment of “enabling technologies” through working in partnership. This ethos was linked to the potential seen in KC. Here we also saw an emphasis placed on widening access and participation via a number of initiatives, with the aim of raising young people's aspirations. Mentoring was, for example, one programme of work mentioned, while the relationship between skills and student development was seen to be accommodated within Salford. Overall, therefore, KC was seen as enhancing existing agendas in teaching, enterprise and research, all of which were driven by the idea of being an “engaged” or “enterprise” university working in partnership with a variety of stakeholders. For both MMU and Salford, core drivers for KC related to the growing institutional power of Victoria/UMIST as a merged institution and their desire to find a place within the emerging local university agenda, based not only on teaching but also on research, and, in the case of Salford University, to continue to be part of the city of Manchester's economic boom, international reputation, and a *Greater Manchester* University.

*Institutional Differences, Scales, and Activity*

What we see in the KC process is the growth of “third mission” activities, not only as a result of the downturn in government funding, but driven by new policy directives in relation to the knowledge economy at different levels of scale. The KC process brought to the fore the need to understand the differences, as well as similarities, that each institution brought to its development. Yet the identification of characteristics and strengths specific to each institution proved difficult and revealed a number of tensions. At the launch of HEFCE’s draft strategic plan (published 2003 for the period 2003–2008) the Chief Executive, Sir Howard Newby, was quoted as saying that individual universities “must build upon their own chosen areas of strength, and work in collaboration with other providers, so that the sector as a whole continues to deliver all that is required of it in the increasingly competitive global marketplace.”

For this to take place there was a need to have a well understood and well communicated sense of what KC was trying to achieve and exactly how universities were expected to contribute to the development of the city-region. Yet the interviews revealed a great diversity of opinion about this. While enormous potential was seen to lie in increasing existing collaborative activities in teaching and research for this purpose, what was absent was an understanding of where, how, and with whom this could take place. Similarly, there remained a division in opinion between those with the “vision” and the staff that would ultimately be charged with its implementation, as well as diverse opinions on the extent to which KC would achieve the kinds of economic and social benefits attributed to it. For instance, in terms of further engagement and making the universities meaningful to all citizens, a large number of deprived areas surround Manchester. As it was put by one interviewee: “We have a huge mountain to climb in terms of raising the aspirations of local and young people.”

Spatially speaking, these issues relate to a tension between what is seen as the “urban core” and the Greater Manchester “hinterland” with regards the assumed benefits of the knowledge economy. KC might be very successful, for example, in attracting a larger pool of knowledge workers. Some of these may stay in the “centre” of the city, but educational provision is patchy at best and so where will they go if they have, or want, children? They are likely to migrate to the leafy suburbs of Cheshire to the south of the city. In this sense, how will this benefit the relatively deprived areas? Here we meet the practicality of assumptions concerning wider participation and the needs of the knowledge economy.

In terms of the varying degrees of institutional power that the Greater Manchester universities enjoy, we can see how each is aligning itself in varying ways with the potential within KC. First, the development of KC was seen as representative. In this sense it was seen to act as a focus through which current work could be channelled, magnified, and given an interpretation according to the relationship between actual and potential activities and the distinctiveness it wishes to convey. Second, KC was seen as additive, with the potential to act as an identifier of spin-out opportunities that are not normally part of everyday practices in HEIs. In this way KC was seen to add value to what is currently practised and not to seek to change well-established areas of activity. Finally, KC was



seen as transformative. Here the initiative acted as a catalyst identifying current activities and reconfiguring and adding to those for the benefit of the city-region and beyond.

Only in this last way could KC be seen to measure up to the potential heralded in the ambitious vision set for the initiative. Institutional power, bolstered by ambitions to become more of a “global city” and the accompanying assumption that a global university is needed for this purpose, meant that Victoria/UMIST tended to see KC as additive and representative, rather than transformative. Those academics practising science within the context of Victoria/UMIST were not expected to alter their modes of production in KC. Instead, it was the product that was to be exploited, with the process left up to the “scientists”. Social science and the humanities, on the other hand, were expected to become more focused on KC concerns through an alteration in the process of their practices. What we saw, therefore, was a variation according to institutional position, with those in Victoria/UMIST less likely to be subject to such pressures given the institutional power that it enjoys. It is for reasons such as these that MMU and Salford were expected to contribute more directly to tangible projects and programmes in comparison to Victoria/UMIST, whose existence, and assumed benefits, were held to be sufficient for the development of KC without widespread change.

The idea that knowledge is governed by global criteria of excellence provides a unique way of seeing how universities can exploit their position within localities. Global–local interactions apparently vanish in the face of the idea that knowledge generation, without any apparent understanding of its practice and context, is sufficient. Universities are then “in” but not “of” their localities and are effective at maintaining their positions through the assumed benefit to their regions of their presence. Yet there is little systematic examination of these assumptions. Once again, government policies concerning the knowledge economy, along with the practice of the RAE and academic identities built on aspirations of being global players, provide for the continuation of such situations, with implications for university futures, knowledge production and governance. In the final section of this paper, we turn to a discussion of these issues.

### **Universities and the Future**

Universities are sites of many different expectations. Because of this there is a need to establish their distinctiveness in the knowledge economy to avoid them becoming sites of disparate activities within organisational contexts that could be replicated anywhere. Without distinctiveness, what is the future of the university and why would people wish to work there when knowledge production is not a monopoly? This is where a balance between the short and the long term is required. On the one hand, a combination of particular professional cultures and increasing speeds of knowledge production leads to a different form of knowledge being produced within universities, which necessitates, for some, a process of “unhastening” (Pels 2003). This is important if the place and role of the university in society is not to give way to short-term instrumentalism. On the other hand, we live in a world in which “quick hits” drive criteria of relevance. There is thus a tension between modes of knowledge production and the goals of

policy-makers, where programmes are needed in the short term and there are also more sustained and long-term programmes of work.

Complex sets of issues are raised for those working in universities with respect to their roles and purpose. Questions are raised about what can be reasonably expected of higher education in relation to its positive impact upon social and economic development. Translating opportunities into tangible realities poses a number of significant challenges. These do need to be managed in ways that are not indifferent to current practices and this creates both opportunities and challenges, related to, for instance, issues of scale, funding, academic lives and working practices, university structures and governance and modes of knowledge production.

The roles and functions of the university in the knowledge economy are diverse and act at different levels of scale. It is held that research needs to be conducted at an international level in order to meet criteria of world-class excellence. It also needs to be embedded in local and regional contexts if the kinds of benefits expected from knowledge for the economy and knowledge transfer are to be realised. International consortia and networks need to be formed and economies of scale built, and collaborations are needed between universities in particular localities. Student markets are now international, with overseas applicants representing attractive sources of much-needed finance (they pay a lot more), but local students should not be forgotten—particularly when coming from relatively deprived communities. This all needs balancing if the knowledge economy is to be for “the many not the few”, as the British Prime Minister, Tony Blair, has expressed it. This means increasing applications from local communities, as well as attracting sufficiently wealthy foreign students, or those with grants from their own country, in order to increase revenue from teaching.

The debate around the Higher Education Act was concerned with how a funding shortfall should be rectified. The crisis in funding has been met by various proposals, but also protests from those such as the National Union of Students, who argue that debt will only increase and act as yet a further disincentive to those working-class students who do not normally benefit from higher education. What is significant, given the history of the welfare state, is the absence of debate in public fora concerning why the state is no longer prepared to support higher education as an equal right for all. While the overall effect of such provision was to benefit the middle rather than the working class, those familiar with different systems of higher education should recognise the importance of this in the European context.

It is at this point that difficult questions are raised that are normally sidelined in the frenetic search for additional resources, in the attempt to manage conflicting aims, and/or in the pursuit of vision without meaningful content. A number of participants in our work certainly identified the issue of self-interest as having the potential to undermine collaborations. At the same time, how particular sources of funding are obtained and deployed needs careful consideration in understanding the differences between and within universities and playing to their respective strengths. This means examining the relationship between intended and actual results, as well as political leadership which effects closure on otherwise open-ended terrain, while also being willing to learn and to admit mistakes. The presence of such leadership is not a sufficient

condition to prevent the free play of different interests. It is, however, a necessary condition to ensure benefit beyond the narrow interests of associated institutions. Therefore, who and what groups are excluded from any such processes is as important an issue as who is included and why.

Within KC we saw how different academics play certain games, bolstered by the contexts of their knowledge production, about which they remain largely indifferent. Within the field of academic knowledge production, an apparent ability to rise above the particularity of established ways of seeing is a reason to accord a particular status to the knowledge then generated, reproducing the idea that individual characteristics are solely responsible for innovation (which is not to say that “character” is not a component). This certainly assists in the perpetuation of the individualistic cultures that are part of so many academic departments and institutions.

Here we come to issues of commitment and engagement. How can individual academics, with pressures on their time and commitments, participate effectively in initiatives such as KC in the environments in which they work? How can they be enrolled and engaged in the process? One issue concerns the internal organisation of HEIs. Universities have to think carefully about their internal structures and systems of rewards and incentives if they are to maximise the opportunities presented to them. Universities are flexible, but they can also exhibit a “silo” mentality with people being locked into departments creating only limited possibilities for engagement with those in other disciplines. The world is not neatly divided up into the boundaries that this creates, and so problem-solving is limited without effective collaborations. A second issue relates to the incentives and rewards for boosting the attractiveness of outreach and “third mission” activities, an issue that is belatedly receiving increased attention at the national level. In the meantime, differences have emerged that are the product of institutional positions, cultures and political economies, without due consideration of the overall benefits of different “third mission” activities for society as a whole.

At this point, the fundamental issue of governance structures comes into play (Bargh, Scott and Smith 1996; Dearlove 1998). Universities are multi-faceted organisations that encompass elements associated with the characteristics that Max Weber found in bureaucracies—regarding the organisation as an end in itself, rather than a means to an end—as well as those associated with a professionalism that regards autonomy as essential to knowledge production. This, in itself, makes for a tension and, without a sufficient understanding of these dynamics, recasting these institutions in the image of an environment which cannot be read as self-evidently possessing clear lessons for internal transformation leads to ever greater anomalies. Such a situation is not helped by university managers speaking of the environment as if it possessed self-evident properties, rather than contestable claims.

In addition, we see a link between institutional power bases and perceptual differences relating to the role and value of the Greater Manchester institutions and assumptions about how knowledge develops, flows, and benefits the economy, with the RAE as a driver of academic production. After all, the RAE is a blunt instrument that is not sensitive to matters of scale. Instead, it is a process in which engagement with different populations in the service of illumination is sidelined in favour of a process of

measuring academic output through particular journals, books, research grants and number of PhD students. It is a process about which academics readily complain, but they will also rapidly fall into a discourse about what the rating of their department is against those of others. As with the knowledge economy in general, this provides for a distinction that brackets assumptions about knowledge flow and benefits and is instead populated by a struggle for recognition with, in this case, an accompanying redistribution of resources.

In terms of university transformations, it would seem that rhetoric rapidly overtakes action, while product too often supplants a due consideration of process and value. Such is the speed at which progress is sought, little attention is given to a number of underlying issues, raised widely in interviews, that needed to be clarified and addressed as a sound basis for moving forward. When they are not, potential remains unrealised. Universities need to be far better at processes of communication internally and cross-institutionally, particularly given the difficulties created by an audit culture (Power 1999). Staff are unlikely to find yet more initiatives appealing when suffering from initiative fatigue. Innovation frequently is not more than a means of forgetting history. It is the measure of a reasonable and attainable gap between the actual and potential according to particular values and goals that needs to be addressed.

The forms of control of knowledge production have changed and life within these institutions exhibits the characteristics of managerialism—that is, the application of so-called technical methods of information gathering in order to monitor and control work output (May 2001). The overall result is to displace the complexities of management practice as essentially a political activity in persuasion, organisation and representation. Universities, after all, are key sites of knowledge production in situations of tension. Knowledge is seen to be necessary for competitive advantage and its free circulation (commons), and potential appropriation for innovation, is key to success (Luque 2001).

At another level, knowledge accumulation resides in intellectual property. As Bob Jessop (2002) notes in his discussion of these issues, it was recognised by Daniel Bell (1980) that the free circulation of knowledge contains no incentives for production and so a “social unit”, such as government or the university, must act as a site of production. While Bell’s observations were rooted in the logics of a Fordist-based mixed economy, this does not detract from the need for states to invest in knowledge. It should be noted, however, that:

[Different states are] situated differently in this regard. They tend to polarize, first, around interests in projecting or enclosing the commons (for example, North–South) and, second, around the most appropriate forms of intellectual property rights and regimes on different scales from local to global. (Jessop 2002: 129)

In the face of these changes, universities have become sites of varied practices and expectations. Some have sought to characterize these changes in terms of movement from discipline-based, professionally-driven, hierarchical and homogenous standards of knowledge production, to those in which knowledge is contested and heterogeneous and the differences between justification and application are no longer so evident. This

movement from Mode 1 to Mode II knowledge production (Gibbons et al. 1994; Nowotny, Scott and Gibbons 2001) appeals to many researchers as a heuristic device in terms of scientific knowledge production. Its applicability to the social sciences and humanities, however, is not so readily apparent, nor does historical research indicate that the physical, biological and chemical sciences have been immune from connections with industry and so have exhibited Mode II modes of production (Pickstone 2000). What have changed are the scale and intensity, as well as the speed and consequences of transformations that make up the structures and cultures in the institutions we call universities (Barnett 2000; Delanty 2001).

The production of knowledge is a function that the university has always been well placed to fulfil, but a greater premium is now placed on extracting economic and social benefit from university-based knowledge. What was often an assumed benefit is now open to scrutiny and competition from other sites of knowledge production. Nevertheless, universities not only produce knowledge to enhance social and cultural understanding, and economic competitiveness, through research, but also disseminate that knowledge to students and thus perform a public role in the sense of bringing people together in what is, increasingly, an individualised world.

For these reasons the pedagogic role of universities, and their contribution to social and cultural issues, is core to their futures. With transformations we have seen an increased emphasis upon the civic or moral duties of universities to serve the communities in which they operate, alongside changing ideas about their value and role in society (Delanty 2001). A “value production” role has long been attributed to the university. Yet it is now argued that the producing and reproducing of values is even more important in a multi-ethnic, multi-cultural, rapidly changing world, in order to root ethics and morality in future generations and thereby reflect the diversities, rather than hierarchically-inspired orders, that exist in contemporary societies (Bauman 1997).

### Summary

While the policy landscape changes, the presuppositions that inform its conception over time have exhibited clear uniformities. The changes we have described are aimed at reproducing universities in the image of the intangible. We have not sought to defend a nostalgic dream of a by-gone era of institutional autonomy, but instead appeal to a more nuanced understanding of the place, value and role of universities in society more generally. Such a debate and understanding is being sidelined in favour of government edicts and the supposed nature of the global economy. Universities are no longer “ivory towers”, as they have been simplistically and inaccurately characterised in the past. A former Secretary of State for Education (Charles Clarke) made it clear that state support for a “medieval style” community of scholars is not sustainable within the current system of funding. While a great deal of discussion concerning his precise meaning has taken place—including one interpretation taking this to mean the study of medieval history—the demand for “relevance” in scholarly pursuits is readily apparent.

Commentators now see universities as the “knowledge factories” for the new economy. Their dual mission is to deliver policies on knowledge transfer and also, through

widening participation initiatives, to have a measurable impact upon social inclusion. As one commentator has put it, the intention is “to make them instruments of social and economic engineering rather than places of learning and enquiry” (Gordon Graham, 14 June 2002, in the *Times Higher Education Supplement*).

These issues are not new visitors to the development of universities. Nevertheless, such is the intensity and scale of change, that without an understanding of areas of engagement, as well as a clear defence of their role and value in society, justification for the existence of universities could easily become the sole province of those who lie outside their contexts. This can work to undermine distinctiveness and add to difficulties in defending the very basis upon which their legitimacy rests in the public realm. After all, if expertise is redundant and the university’s standards are open to variable interpretations, it can no longer claim a privileged position for itself. If positions are multiple and forms of understanding generally accessible, where does the authority for findings and the basis for practices then stand? A weakness could easily emerge in which the positions and culture that enabled knowledge production in the first place then become more tenuous and certainly not tenured!<sup>13</sup>

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### Notes

- [1] SURF is a multi-disciplinary research centre at the University of Salford with its own offices in central Manchester. It is largely self-financing and works on issues associated with regeneration, housing, city and regional policy, territorial knowledge, and science and technology. Its funders include research councils, development agencies, the EU, central and local government, universities, and health and private sector organisations. For more information please see <http://www.surf.salford.ac.uk>
- [2] The research that underpins this article is also funded by the Economic and Social Research Council’s Science in Society Programme, Award Number L14425004. We gratefully acknowledge this support.
- [3] Higher education institutions in the UK include universities, higher education colleges, and a small number of university colleges. We focus upon universities in this discussion, given the current debates over the particular place of the university as a site of knowledge production and our primary focus on the Manchester: Knowledge Capital initiative, while recognising that the changes we describe impact also on other higher education institutions.
- [4] See also Eurydice (2000). Brief overviews of the English and British HE systems can also be found online at: [http://en.wikipedia.org/wiki/british\\_universities](http://en.wikipedia.org/wiki/british_universities)
- [5] For a more historical overview, see Stephens (1989).
- [6] For an overview see <http://www.hefce.ac.uk/research/funding/resfund/> (accessed May 2006).
- [7] These subjects are: nursing; professions allied to medicine; social work; art and design; communication, cultural, and media studies; dance, drama, and performing arts; and sports-related studies.
- [8] The full transcript of the *Roberts Review* and an overview is available at <http://www.ra-review.ac.uk/reports/roberts.asp>.

- [9] For more details on foundation degrees please see <http://www.foundationdegree.org.uk/>
- [10] For details on higher education reform in England, see <http://www.dfes.gov.uk/hegateway/hereform>
- [11] The Russell Group is the nearest equivalent to the Ivy League in the US. However, the important difference is that universities in the Russell Group are state-funded, not state-run, and exclude research universities such as York, St Andrews, and Durham (Buckingham is the only private university in Britain).
- [12] These brief profiles have been built from each university's official website and publicly available information, accessed in April 2004.
- [13] This is poetic licence and also transferable to those contexts in which tenure still exists.

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