

## **Creating Entrepreneurial Universities: Insights from a new university business school**

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### **Abstract**

**Objectives:** To examine the potential and actual contributions UK universities can make to regional economic development and growth by becoming more entrepreneurial to deliver their "third mission".

**Prior Work:** Delivering the "third mission" is now at the top of all university agendas. The term "entrepreneurial university" (Etzkowitz, 1983) has been adopted by academics and policy makers to describe universities that effectively deliver on their "third mission" (Clark, 1998, Van Vught, 1999, Lambert, 2003). A growing body of literature relating to entrepreneurial universities and academic entrepreneurship equates these developments to the commercialisation of science. However, a significant cautionary message has been emerging from the literature for some time about assuming a simple causal relationship between university-led scientific innovation and economic benefits (Fairweather, 1990, Liu and Dubinsky, 2000). Bramwell and Wolfe (2005) conclude that universities can have a much wider impact on regional economic development than simply the provision of basic research but, to be fully effective, the knowledge assets of the university must be fully aligned with the multi-variate needs of local firms. This study describes a range of enterprising activity within a new university that supports this more inclusive view of the university role in economic development.

**Approach:** Entrepreneurial activities within a large new university were audited and mapped to a framework that identified significance of impact on local communities and the city-region economy. The research is based on a single case and therefore cannot be generalised but does offer a snapshot of a widespread trend within UK universities.

**Results:** Our data and analysis highlight a wide-range of enterprising activity across the case institution but that these activities are not organised or coordinated. The very concept of "academic enterprise" has not been well received by the majority of staff. The effectiveness of the strategy to make the institution more entrepreneurial is questioned.

**Implications:** The work has two major implications for policy and practice. (1) The need to reduce reliance on core teaching related income in response to progressive reduction in unit funding (2) the need to enhance business-led curriculum development and university-business links to increase non-research related commercial income.

**Value:** This paper is one of the first to focus on detailed non-research related "third mission" academic activities and therefore adds to a more comprehensive understanding of the entrepreneurial university.

**Keywords:** entrepreneurial, university, third mission, regional development

## Universities and Economic Development

In this paper we investigate the attempt of a large, post-1992 University to influence regional economic development by becoming a more enterprising institution. The pivotal role that universities play in the knowledge economy results from the changing economic and political environment (O'Shea et al., 2004; Slaughter and Leslie, 1997). Increasing globalisation and the emergence of a knowledge-based economy, together with the growing significance of innovative city-regions, are the main drivers in the transformation UK universities (Hagen, 2002; Sizer, 2001). Policy makers now see universities as key players in delivering economic growth as evident from a range of government initiatives that have been proposed and/or subsequently introduced (DfES, 2003; DTI, 1998, 2000; HMT et al., 2004; Lambert, 2003; Leitch, 2006). Similar developments are apparent in both developed and developing countries (Ahola, 2005; Gomes et al., 2005; Jacob et al., 2003; Van Vught, 1999; Zhao, 2004). Governments around the world now see universities as key players in developing innovation systems and, thereby, contributing to economic growth (Bercovitz and Feldman, 2006; Etzkowitz et al., 2000).

The development of Silicon Valley and Boston's Route 128 in the US are seen as the prime examples of how universities can dramatically influence economic development (Bercovitz and Feldman, 2006; Etzkowitz, 2003; Etzkowitz and Klofsten, 2005). UK policy-makers certainly seek to emulate such exemplars (HMT et al., 2004; Lambert, 2003). However, involvement of universities in economic development has evolved very differently in the US from the rest of the world (Etzkowitz, 2003). Etzkowitz contends that involvement of US universities in economic development was a bottom-up phenomenon citing the evolution of Stanford and MIT as supporting evidence. Other accounts of the growth of university involvement in economic development also seem to support this evolutionary view which trace formative actions to the early part of the 20<sup>th</sup> Century (Link, 2002; Middlehurst, 1999; Sturgeon, 2000). A very different mechanism is proposed for university involvement in economic development in countries other than the US (Wright et al., 2007). Etzkowitz (2003) regards UK university involvement as a much more recent phenomenon, primarily government driven, and a response to the innovation gap created by US universities. Funding regimes associated with government intervention in the development of innovation systems are seen by some as the principal drivers of university strategy rather than the legitimacy or desirability of the ensuing process (Hagen, 2002; Liu and Dubinsky, 2000). The notion that economic development activities are an important source of funding finds widespread support even among the most committed proponents of the new agenda for universities. Others view the current trends as much more sinister threats to the legitimate mission and integrity of universities (Slaughter and Leslie, 1997; Geuna, 2001; Parker and Guthrie, 2005).

Notwithstanding different evolutionary pathways and issues regarding the legitimacy of current trends most authors support the view that the role of the university in society has developed beyond teaching and research. Incorporation of the 'third mission' in which universities are an integral part of regional economic development has made official a process that has been in train for some time (Etzkowitz, 1998). Beyond this formalisation of universities' status in economic development systems, accompanying government policy and funding regimes have brought the delivery of the third mission to the very top of the agenda for Vice Chancellors. We examine these trends by examining the case of a large, new university (post-1992) which has been developing its third mission activities for some time. The paper begins with a review of literature related to the entrepreneurial university. This is followed by a discussion of the methods adopted for collecting our case study data. The data are then presented and we discuss the managerial and policy implications which emerge from this study of NEWUNI.

## Emergence of the Entrepreneurial University

Etzkowitz (1983) coined the term "entrepreneurial university" to describe institutions that have become critical to regional economic development. Subsequently, it has been adopted by academics and policy makers to describe universities that effectively deliver on their 'third mission' (Clark, 1998; Lambert, 2003; Van Vught, 1999). As such, developing a more entrepreneurial culture can be regarded as the essential mechanism through which universities become effectively involved in economic development (Fairweather, 1990; Hagen, 2002; Liu and Dubinsky, 2000). Etzkowitz and Leydesdorff (2000) describe the evolution of tripartite relationships between university, industry and government through the Triple Helix III model which, they claim, most countries are presently trying to achieve. These concepts have been

developed further at the regional level as a means of constructing competitive advantage (Cooke and Leydesdorff, 2006) and to formulate the "assisted linear model of regional economic growth" (Etzkowitz, 1998). Other work on university-industry links also emphasises the university role in regional systems of innovation as the primary driver of economic development (Bercovitz and Feldman, 2006). There is a large degree of agreement with the view that active relationships within the Triple Helix and similar innovation systems encourage an entrepreneurial culture within universities (Etzkowitz et al, 2000). In this context, increased understanding that these studies give of role of universities in economic development systems provides a useful framework to assist managers and administrators develop strategies for their institutions to become more entrepreneurial.

A range of views are exhibited in the literature regarding strategic actions that institutions undertake to become more entrepreneurial. Clark (1998) approached the issue by undertaking detailed case studies of five institutions that were considered to be entrepreneurial at the time. From these studies he identified and articulated five "pathways" to create an entrepreneurial university. Seen by some as a seminal account, Clark's five pathways have received some notable support (Shattock, 1999; Van Vught, 1999) but these views are not universally accepted. This is not so surprising in light of the fact that Clark's sample institutions were small and developed their entrepreneurial characteristics in a considerably less competitive environment than institutions face today. For example, the trend towards greater centralisation and managerialism in the UK's new universities is in stark contrast to the views expressed in most literature about the development of entrepreneurial universities (Shattock, 1999). Brennan et al. (2005) argue that the peculiarities of the university context render an emphasis on individual entrepreneurship inappropriate and suggest some mechanisms whereby management interventions can support academic entrepreneurship. From a study of six universities, Sporn (1999) derived what she considered to be seven critical factors in developing "adaptive universities", a term she links closely with the notion of the entrepreneurial university.

The notion of a differentiated structure is echoed by Poole and Robertson (2003) and is in close accord with the idea of research groups as "quasi-firms" (Etzkowitz, 2003). Other writers stress the need for decentralised, flexible structures and devolved decision making (Henrekson and Rosenberg, 2001; Jacob et al., 2003; Norback, 2000). The critical importance of structure in developing entrepreneurial universities is not accepted by everyone (Louis et al., 1989). In contending that university policies and structure had little impact on faculty entrepreneurial activity, Louis et al (1989) suggest that institutional entrepreneurship is very difficult to engineer. Instead, they suggest that the move to an entrepreneurial university is essentially driven by the activities of individual faculty. The importance of academic entrepreneurs is widely accepted and is linked to a common view that an appropriate prevailing institutional culture is critical to successful entrepreneurial activity (Glassman et al., 2003; Sporn, 2001). Commonly quoted components of entrepreneurial cultures include a willingness to take risks, shared governance and appropriate reward systems.

The type of conditioning factors necessary to develop entrepreneurial universities have been seen as part of the application of entrepreneurship theory to universities (Kirby, 2006). Liu and Dubinsky (2000) posit the development of institutional characteristics based on corporate entrepreneurship theory as the mechanism for achieving more entrepreneurial universities. Chung and Gibbons (1997), however, refute mechanistic approaches to the development of corporate entrepreneurship by suggesting that entrepreneurial behaviour within an organisation can only be effectively promoted through an appropriate corporate culture. Powers and McDougall (2005), in contrast, see a more traditional resource-based approach to strategy as the means of developing the desired institutional forms. This lack of agreement can only add weight to the importance of institutional context when designing strategies to develop entrepreneurial universities (Shattock, 2000).

### **The Commercialisation of Science**

The dominant view in the literature is that universities' key role in economic development is via the commercialisation of scientific research either by patent licensing or, more commonly, by spinning out knowledge-based enterprises (O'Shea et al., 2004). For example, in their discussion of 'Academic Enterprise in Europe' Wright et al. (2007, p. vii) focus entirely on 'spin-

off creation and development'. Recent policy initiatives strongly reinforce the links between academic enterprise and the commercialisation of science (HMT et al., 2004; Shattock, 2000). In their literature review of academic entrepreneurship (O'Shea et al., 2004) identified six related research streams.

1. Individual attributes as determinants of spin-out activity
2. Organisational determinants of spin-out activity (resources)
3. Institutional behaviour as a determinant of spin-out activity (eg, culture, reward systems)
4. External determinants of spin-out activity (eg, availability of finance, government policy, regional knowledge infrastructure)
5. Performance of university spin-outs (related to entrepreneurial capabilities within spin-out companies)
6. Economic impact of spin-outs

As expected, these themes largely mirror those identified in work on strategic aspects of entrepreneurial universities. This correlation is precisely because creating spin-out companies is seen by most authors as the primary objective of this strategic process. The main literature on this topic relates both the creation rate and growth of spin-outs to non-science factors; especially to the entrepreneurial capabilities of the spin-out companies founders and managers (Lockett et al., 2003; Pang and Garvin, 2001; Powers and McDougall, 2005). A number of authors have identified prior experience as a measure of entrepreneurial capabilities and related this to spin-out performance. For example, (Pang and Garvin, 2001) found that an academic's background and experience was a determinant of entrepreneurial activity. Similarly, Druilhe and Garnsey (2004) in their study of Cambridge University spin-outs found that an academic's motivation, experience, relevant knowledge and previous networking activities were all predictors of spin-out formation and performance.

The use of surrogate entrepreneurs, one method of bringing appropriate prior experience to spin-out companies, has been shown to improve new business creation and subsequent growth rates (Franklin et al., 2001; Lockett et al., 2003). The entrepreneurial role of the Technology Transfer Office (TTO) or Industrial Liaison Office (ILO) in helping create spin-outs has also been recognised (Fassin, 2000; Franklin et al., 2001; Lockett et al., 2003; Pang and Garvin, 2001). The need for a wide range of skills to create and develop spin-outs has received global recognition (Pirnay et al., 2003). Thorburn (2000), who studied the transfer of tacit knowledge in Australian spin-outs, emphasises the importance of marketing and management knowledge in the survival of such firms. Spin-out processes in Central and Eastern Europe are also seen to reflect those in the US and Western Europe (Jones-Evans et al., 1998). This study also identifies the critical importance of information, advice and managerial resources in the survival and growth of university spin-outs. Whilst recognising the importance of business knowledge in the success of spin-outs, (Meyer, 2003) also examined the support mechanisms available to these companies and suggests support should begin at the pre-start stage to offer maximum benefits.

In a recent study of the impact of universities on local economic development, Cox and Taylor (2006) argue that in spite of efforts by UK governments to advocate the importance of a closer relationship between universities and business in the 1980s, the momentum only began after publication of the Dearing Report (National Committee of Inquiry into Higher Education, 1997) and the Lambert Review (Lambert, 2003) concerning the future of UK higher education (DfES, 2003). A key point of the Dearing Report is that the 21<sup>st</sup> century should see the UK become a 'learning society'. If, according to the Lambert Report, the UK has a science base of international standing, the challenge faced by HEIs is to consider how they can increase their contribution to business and society through better mechanisms of knowledge/technology transfer and the commercialisation of basic research.

The debate on university-business collaboration is not merely focused at the UK national level. The European Universities Association also published a report on the role of universities in the emerging knowledge economy (Reichert, 2006). Nonetheless, it is at the UK regional level that this debate has been most vigorously contested (Chadwick and Glasson, 1998; Charles, 2003; Chatterton, 1997; Cox and Taylor, 2006; Harris, 1997; Impact Assessment Unit, 2000; May and Perry, 2003; Robson et al., 1995). Funding for 'third stream' activities comes from various sources aimed at different targets. The Higher Education Funding Council for England (HEFCE),

through the Higher Education Innovation Fund (HEIF), supports universities' general approaches to innovative outreach activities. The Department of Trade and Industry (DTI) promotes commercialisation of universities' research through knowledge transfer programmes (KTPs). In recent years Regional Development Agencies (RDAs) have included university-business collaboration in their strategic plans. Moreover, as gatekeepers of much of the European Regional Development Fund (ERDF) and European Social Fund (ESF), RDAs are major stakeholders in university outreach activities especially in relation to supporting small and medium-sized enterprises (SMEs) and local communities. It is imperative that universities realign their academic activities to meet the expectations of the public and decision makers on the one hand and the needs of business communities on the other. In this paper we use a case study of a large, post-1992 university to illustrate the process of change that now makes a significant contribution to the regional economy and provides better services to local communities.

### **Research Design and Setting**

Cox and Taylor (2006) differentiate between two forms of impact estimation: (1) backward linkage and (2) forward linkage. They contend that backward linkage estimation models focus on 'knock-on' multiplier effects with quantifiable results in the growth of income and employment. In contrast, forward linkage approaches emphasise universities' contribution through business-engaging activities. However, the third report of Universities UK (2006) points out that the economic activity generated by institutional expenditure is most readily quantifiable whereas the economic impact of third stream activity is difficult to estimate due largely to the lack of commonly agreed metrics. Consequently, the focus of this paper is primarily on forward linkage activities in the case of NEWUNI.

Based on a comparative study of the economic impact of university activity, conducted with two other institutions, four major areas were considered to have a significant impact on local communities and the city-region economy: (1) built environment; (2) health care/bio-medicine; (3) culture/creative studies and (4) business/enterprise. Within each of these fields, activities were categorised on the basis of the following seven elements: research and academic enterprise, research activities, skills/training/knowledge transfer, cross university networking, cultural diversity, social inclusion, and property development/regeneration. A working template was designed to reflect NEWUNI's potential contribution to the city-region (Appendix 1) through which academic enterprise activities could be mapped and analysed. In this way, common approaches, best practice and "gaps" in current activities could be readily identified.

A review of the application and limitations of using indicators for a knowledge-based regional economy has been recently carried out by PREST (2006). Furthermore, given NEWUNI's current changes in structure and systems it is difficult to capture the dynamics of change. Our analysis and discussion are focused on three inter-related themes, namely, mutual aspirations, identifying contributions and policy implications. Mutual aspiration for HEIs' contribution to regional development is underpinned by the interests and concerns from both academics and policymakers at various levels (NWDA, 2006; NWUA, 2003, 2006; Porter and Ketels, 2003; Reichert, 2006; Universities UK, 2002, 2006). May and Perry (2003; 2006) argue that identifying both potential and actual academic capacities provide a sound basis for 'measuring' HEI contribution to regional development. Following these arguments, our objectives are to identify both actual and potential capacities through empirical data by reviewing current stated institutional policy and strategy in the light of the audit of current academic enterprise activity illustrated in Appendix 1.

As the first step towards building a comprehensive database of outreach activities for future evaluation and estimation of the impact of those activities, we conducted interviews with key personnel at the level of university, faculty, research institute and research centres. We have also collected extensive archival data including reports, meeting minutes, online news, and public documents. Using narrative analysis we provide both a cross-faculty account of NEWUNI's outreach activities and a tabulation of these activities in the pre-designed template mentioned above.

## **Towards an Enterprising University: The Case of NEWUNI Strategy Context**

The need for NEWUNI to become more enterprising and “outward-facing” was recognised in the late 1990s. This led to the commissioning of external consultants who recommended creation of central division to coordinate external activities and make NEWUNI more enterprising. As a consequence, a central division was established in 2000, headed by a Pro Vice-Chancellor and recruitment of significant numbers of staff. However, concentration on structure, formal planning and centralised control seemed to be at odds with the basic tenets of an enterprising university. Shortly after the arrival of the new Vice-Chancellor in September 2005, formal consultation on the mission, values and structure of the institution were instigated with all staff. The University’s strategic plan was updated to reflect sweeping changes to institutional structures (including disbanding the central division) and the introduction of income growth targets in order to deliver revised mission and value statements. The main thrusts of these statements were as follows:

### *Mission*

- Research-Enterprise-informed teaching University
- National Professional university
- Original Modern University

### *Values*

- A research-informed teaching University
- An international University with global brand and reach
- A University whose expertise, research and other resources support the region

NEWUNI regards itself as an institution which pays particular attention to the demands of its students with a focus on diversity and social inclusion. In terms of accessibility and social inclusion 1,800 current students have disabilities. Furthermore, 20% of enrolments are from minority ethnic groups in comparison with the national average of 15%. NEWUNI runs an annual summer school (six nights) for year 11 Aimhigher students in five out of seven faculties. At the same time, Saturday Clubs for Afro-Caribbean and Somali pupils are organised in a number of local communities.

As a post-1992 university, RAE 2001 confirmed NEWUNI as an institution with a strong commitment to research. Results included a 5\* grade in exercise and sports science and seven other fields of research were awarded 4\* grades (environmental sciences, metallurgy and materials, English language and literature, art and design, education, library information management and history of art, architecture and design). In total, 20 out of 22 subjects entered for assessment achieved grades of 3a or above. Following RAE 2001, academic activities at NEWUNI were organised into seven faculties, thirty four departments, ten research institutes, twenty nine research centres and forty four research groups.

Along with traditional teaching and training NEWUNI focuses on links with the professions. One third of the student population are engaged in part-time or sandwich courses (see Table 1). The University works in partnership with 70 professional bodies and associations to develop and provide sector-specific courses resulting in 60 Continuing Professional Development (CPD) routes being recently created.

More than 57% of the NEWUNI student population are from the region and more than 36% from the city (see Table 1). As a whole, NEWUNI offers more than 700 courses of which 45% have links with the community. The Health, Social Care and Education Faculty train more than 2000 health professionals including nurses, health visitors, health scientists and dental technicians each year; 80% stay to work and live in the region. The Science and Engineering Faculty train more than 5000 students each year and 74% stay to work and live in the region. NEWUNI’s business school trains more than 5000 students each year of which 68% remain to live and work in the region.

**Table 1 Student Profile and Financial Statistics 2004/2006**

Student Profile		
<b>Mode of Attendance</b>	2004/2005	2005/2006
Full-time students	21,085	22,297
Sandwich (including one-year industrial placement) students	3,696	3,508
Part-time students	8,079	7,492
<b>Total</b>	<b>32,860</b>	<b>33,297</b>
<b>Level of Study</b>		
Undergraduate	24,554	25,550
Postgraduate	5,819	5,507
Professional	1,788	1,550
Foundation/Access	699	690
<b>Domicile</b>		
City	12,042	12,105
Region	7,269	7,088
North	2,662	2,817
Midland/East Anglia	4,402	4,569
South	2,481	2,544
Wales	706	715
Ireland/Scotland	617	650
EU	1,112	1,110
Overseas	1,569	1,699
Financial Statistics (£000)		
<b>Income</b>	172,814	188,037
<b>Expenditure</b>	170,227	185,386

Sources: Annual Review 2004-2006, NU

### The Contribution to Regional Development

The obvious new element in the recently developed mission and value statements is that they reflect, more clearly than previous statements, the strategic importance of Academic Enterprise to NEWUNI. The institution is now seeking to have enterprise as well as research informed teaching, develop a global brand and reach, and use its resources to support the region. The common implication within each of these statements is the need for enterprising activity to generate connections (regionally, nationally and internationally), economic transactions and data to inform teaching and research. These implications are clearly evidenced by the structural and procedural changes that accompanied the new strategic plan. By mapping and analysing academic enterprise already taking place within NEWUNI, it is possible to identify good practice in relation to key factors affecting regional development mentioned above. Also, it has the potential to identify priority actions for the Institution in its attempt to meet the VC's mission and value objectives. The results of this mapping exercise based on the 4 key factors are shown in Appendix 1 and described in further detail below. Apart from the income from teaching and research, third stream academic enterprise activities at NEWUNI secured £9.5 million with a total of 97 projects during 2005/2006 (Table 2).

**Table 2 AE Activities and Income Generation 2005/2006**

Funding Source	Amount (£000)
HEIF3 Competitive bid-Omega project	5,000
HEIF3 Formula funding	1,500
KTP-10 projects	900
Research Councils-8 projects	900
HEFCE Strategic Development Fund	660
ERDF-Incubation Unit	250
ESF	200
NWDA	135
<b>Total</b>	<b>9,545</b>

Sources: Corporate Planning Statement 2006, NU

### **Built Environment**

Several faculties have projects that contribute either to the physical or ambient environments. The School of Architecture, a joint initiative between NEWUNI and its major red-brick partner is the region's largest provider of education and training for professionals in architecture and landscape. The 'Venice of the North' project will have a long-term impact on the city landscape and add property value to future generations. Creation of a Knowledge Corridor, a vision proposed originally by the Faculty of Arts and Design, has been well received and promoted by policy makers. It aims to raise the cultural profile of academic and cultural avenue to an international standard.

A Government-funded Omega programme, run by CATE (Centre for Aviation Transport and the Environment), is a multi-million-pound project aiming to achieve environmentally sustainable aviation. The programme demonstrates NEWUNI's potential and actual capabilities to form a tripartite university-government-business linkage on the one hand and, on the other, conduct state-of-the-art research in collaboration with eight other UK universities. Science and Engineering's Rail Technology Unit has developed research competences through years of collaboration with business partners in national rail and local tram systems. The project of dynamic track system aims to help improve safety and quality for the local tram system which will contribute to the regional built environment and communities' welfare.

The establishment of the Science Learning Centre NW, a four million-pound project co-funded by the Government and the Wellcome Trust and run by a partnership of NEWUNI and a number of other regional institutions, will become a centre of excellence for science education in the region's schools. At the same time, it also contributes to local regeneration through the refurbishment of buildings. The Institute of Education, in partnership with universities from other regions, runs the School Managers and Leadership programme which trains 120,000 teachers nationwide.

In order to revitalise UK town centres, the Retail Enterprise Network (REN) at NEWUNI's business school, initiated an EU-funded project called AGORA. In partnership with national retailers and Spanish retail networks, REN aims to help small, independent shops as to become drivers of revitalisation in the traditional high street. The Centre for Enterprise has obtained external funding to refurbish part of the Business School as a student incubator to provide support for students businesses with real potential for growth.

### **Health Care / Bio-Medicine**

NEWUNI leads with its five-rated department of Exercise and Sport Science and research institute IRM (Institute for Biophysical and Clinical Research into Human Movement). Not only

does the IRM conduct first-class research, they are also involved in programmes concerned with elderly people's movement and therefore contribute to the welfare of regional communities. The Institute for Sport and Physical Activity has recently obtained funding from ERDF and Barclays Bank to promote a culture of health and sports and to encourage people from socially disadvantaged background to participate in sports. Its partners are the City Council and Sport England.

The Faculty of Health, Social Care and Education, in partnership with the local Strategic Health Authority, local NHS trusts, and local city council, is establishing an Integrated System of Health and Social Care for training nurses, teachers, and social workers. It is estimated that 2,000 nurses, teachers, and social workers will be trained every year. The Faculty also runs a number of programmes at national and regional levels to help ameliorate the shortage of health care provision especially in deprived areas.

Food technologists from the Faculty of Food, Clothing and Hospitality Management are engaged in a programme called Health Snacks. In partnership with a University from another region and British Nutrition Foundation, they are developing a programme to promote a culture of healthy living, especially amongst school pupils.

### ***Culture / Creative Studies***

The success of the city's annual International Festival, organised by a partnership of the City's universities, regional development agency, and Arts Council England, helps promote the arts, creative industries, media, and cultural heritage beyond the region. An arts research project, called British TV Drama, is being carried out at NEWUNI. It aims to promote performing arts and TV production from a historical perspective. Arts for Health, a programme funded by the DTI and the Treasury, based in the Arts and Design Faculty, is a national champion which aims are to improve physical and visual environment of hospitals for the benefits of patients.

In Humanities, Law and Social Science, an Information Society Technologies programme is engaging eight new European member states in an attempt to build information infrastructure and promote creativity in the sector of ICT among the participating states. A widening participation programme has recruited 1,800 NEWUNI students with disabilities. The Centre for the Promotion of Social Inclusion has supported women from minority ethnic groups including African, African Caribbean, Irish, Jewish and South Asian women. They also help people living with domestic violence and disabilities and improve their employability.

### ***Business / Enterprise***

Four faculties are currently running 18 KTPs (Knowledge Transfer Partnerships) which in total generate £1.4 million. During recent years, NEWUNI has supported more than fifty regional companies through KTPs. Table 3 indicates that the faculties of Science and Engineering; Business; and Food, Hospitality and Clothing Management are active in creating KTPs but the other four faculties lack the knowledge or ability in this increasingly important area of income generation.

The Centre for Enterprise (CfE) in the Business School has run a number of EU-funded programmes aimed at the improving competitiveness of regional SMEs and promoting an enterprise culture. In total the CfE has helped more than 1,000 businesses, managers and entrepreneurs. The Business Development Unit at the Business School has also been active in accessing KTP funding with 11 projects successfully completed since 2002.

The Faculty of Food, Hospitality and Clothing Management has also been actively engaged with regional SMEs. The Food Centre and International Tourism Centre provide advice for 150 regional SMEs in the food and tourist sectors, whereas the International Centre for Research and Consultancy supports 50 regional companies.

The New Technology Institute, run by the Institute of Education in partnership with the City's College of Arts and Technology, trains up to 500 students per year and provide services to 50 SMEs in the region. The Institute of Education, in partnership with universities from other regions, also runs the School Managers and Leadership programme which trains 120,000 teachers nationwide.

**Table 3 - Current KTP Projects**

	Faculty	Duration	Total Grant	RAE Measurable Income	University Income
1	S&E	02/08/04-01/11/06	75,425	111,425	45,050
2	S&E (with Bus Sch)	31/03/04-01/02/07	159,230	235,230	95,105
3	S&E	13/09/04-12/09/07	100,566	148,566	60,066
4	S&E	01/06/06-N/A	47,500	101,856	33,696
5	S&E	31/07/06-14/08/08	75,425	111,425	40,794
6	S&E	N/A	100,566	148,566	60,066
7	S&E	N/A	67,044	99,044	40,044
8	Business School	29/03/04-15/02/07	83,805	123,805	50,055
9	Business School	11/03/05-03/01/08	94,979	196,979	71,604
10	Business School	28/09/05-23/03/08	67,044	99,044	40,044
11	Business School	N/A	67,044	99,044	40,044
12	Business School (with S&E)	31/03/04-01/02/07	159,230	235,230	95,105
13	Food, Clothing and Hospitality Management	18/10/04-18/10/06	67,044	99,044	40,044
14	Food, Clothing and Hospitality Management	12/09/05-12/09/07	67,044	99,044	40,044
15	Food, Clothing and Hospitality Management	03/10/05-03/07/07	134,088	198,000	80,088
16	Food, Clothing and Hospitality Management	06/11/06-N/A	67,044	99,044	40,044
17	Food, Clothing and Hospitality Management	23/05/06-23/05/08	44,696	93,696	33,696
18	Art and Design	N/A	85,899	127,294	50,055
Total	*	*	1,404,443	2,190,106	860,539

Sources: Business Partnership, NU

## Discussion: Implications for Policy and Practice

### Strategic drivers

Examining the impact of a strategy aimed at making NEWUNI more enterprising must start with an understanding of the drivers of change in a dynamic economic environment. The institution has a long-standing objective to decrease its reliance on income from HEFCE in response to the progressive reductions in unit funding that have taken place over a number of years; this objective has been retained in the new strategy. However, academic enterprise activities generated just 5% of total income in the financial year 2005/06 (Tables 1 and 2). It is not surprising in these circumstances that the revised strategic plan seeks to significantly increase the scale of enterprise activities by setting annual income growth targets for each faculty. Other economic trends, including the market for higher education, are having an increasing bearing on NEWUNI. Operating effectively in this new environment demands a more responsive and proactive organisation. The increasing importance of overseas students in maintaining income levels as well as the opportunities offered by international markets demands a higher profile by establishing strong collaborative links with organisations and institutions in other countries.

Seeking to become “an international University with global brand and reach” (Pg.10) is an obvious strategic response to these drivers. There are also more direct economic pressures driving the design of NEWUNI’s strategy. Financial incentives to engage with regional economic development (e.g. HEIF) inevitably influence institutional strategy.

As well as responding to the changing economic environment, specific government policy initiatives are intended to directly influence the strategies adopted by all HEIs. These influences are clearly detectable in the revised strategy for NEWUNI. Recommendations of the Lambert Review, the Science and Innovation strategy and, more recently, the call for employer led curriculum development (Leitch, 2006) require greater involvement in regional economic development through both the creation of new businesses and by improving university-business links.

### ***Practical impact of the new strategy***

NEWUNI’s revised strategic plan has been accompanied by some highly significant practical changes to structures and systems. The most visible change is to the way that academic enterprise is managed centrally. The central division created in 2000 has been replaced by an Enterprise and Research (E&R) office in an attempt to integrate the management of research and enterprise in the institution. Along with the creation of the E&R office, the role of business development managers has changed from being a part of the central division to working directly in each Faculty. To reflect these changes the committee structure has changed with Enterprise and Research committees formed at the faculty as well as the institutional levels. In addition, each Dean has been given specific responsibility for key strategic elements. Responsibility for enterprise has been given to the Dean of Science and Engineering. This appointment, the design of the newly formed E&R office and the restructuring of enterprise and research clearly signifies the emphasis given to the commercialisation of science in the new strategy. It is interesting to note that the current arrangements take no account of commercialisation of the curriculum which is likely to be the principal mechanism for academic enterprise activity for most of NEWUNI’s faculties. Perhaps the most significant change arising from the revised strategy is the devolution of budgets to the faculty level. As from September 2007 faculties will have much greater control of budgets and will gain the benefits or consequences of their individual financial performance. Alongside these new arrangements, each faculty has been given annual enterprise related income growth targets. It will be interesting to observe how this mix of centralised planning and control combined with de-centralised financial responsibility will play out over time.

### ***Lessons from current academic enterprise activities***

Our analysis shows very starkly where emphasis needs to be placed in implementing the revised strategy. There is no income from commercialisation of science, one of the key government agendas for universities, through either patent licensing or spin-out companies. Very few of NEWUNI’s current enterprise activities have an international dimension. Developing international links and collaborations in this area of NEWUNI’s work is an essential element of exploiting the opportunities offered by international markets. There are pockets of collaboration between NEWUNI and other universities in the city-region but, for the most part, collaboration is low and underdeveloped. This situation could prove problematic for NEWUNI as all institutions are operating in an era when most funding agencies, at national and European levels, see “partnership” as the primary mechanism for delivering economic development. Our data also show that university-wide academic enterprise activities are not systematically organised or coordinated. The very concept of ‘academic enterprise’ has not been well received by the majority of staff. Restructuring and integration of the Research Office, Regional Office and Enterprise Office into the E&R Office, has not yet produced any tangible synergies or shared learning.

Review and analysis of current activity in the light of the revised strategic plan also highlight some major issues relating to its implementation. In particular, the issue of how research and enterprise inform teaching has not been addressed. Most academic enterprise activity takes place in sub-departmental “centres” which are largely isolated from mainstream teaching. How the lessons from these activities might be disseminated beyond individual centres is a question that has yet to be engaged. The matrix in Appendix 1 clearly demonstrates that NEWUNI is not a homogeneous organisation. Academic enterprise activity is concentrated in three of the seven

faculties. The knowledge base, range of potential academic enterprise services and the market for each of the faculties is very different. Creating centralised, uniform structures and procedures along with general growth targets for all faculties seems at odds with the inherent variety of the institution. The ability to tailor strategy to faculty needs will be an important factor in determining the success of NEWUNI's future academic enterprise efforts.

There are examples of extremely good practice in the current academic enterprise activities at NEWUNI and sharing learning from these could and should help to improve strategy formulation and implementation. For example, by using "non-traditional" sources of funding to address declining research budgets, the Centre for Enterprise at the Business School has demonstrated that engaging with the academic enterprise agenda can bring multiple benefits to the institution. The work of the Centre has directly influenced regional economic development, developed high quality staff with good practitioner understanding, directly impacted on "mainstream" curriculum development, increased research funding well beyond the level that would otherwise have been available and produced high quality research output. The success of the Centre for Enterprise (and other similar centres in the Faculty of Science and Engineering and the Institute of Education) should be used not simply to disseminate good practice but to inform the debate on the organisational forms that would best serve NEWUNI in addressing the current and future issues it faces.

### Conclusions

The strengths of NEWUNI are embedded in its origins as a regional and professionally-oriented institution. All three areas of activity, teaching, research and academic enterprise, have influence on the region in terms of provision of skilled workers, helping regional businesses both large and small, and the promotion of cultural diversity and social inclusion. Nonetheless, analysis shows that NEWUNI needs to widen and deepen its involvement in regional economic development. NEWUNI has also to improve its ability to compete for students, funded projects and commercial contracts at both a national and international level if it is to meet its strategic aspirations. As a post-1992 university, NEWUNI cannot compete purely on the basis of research excellence and income granted by national research councils. However, sources of funding such as HEIF provide new universities with opportunities to supplement their research activities while engaging directly with business and the community. Research which impacts on users also plays to the revised agenda of funding bodies. For example, a recent joint initiative between the ESRC and regional development agencies has led to the appointment of knowledge transfer officers to build better links between business schools and their respective regions (<http://www.innovation.gov.uk/innovationreport/index.asp>).

Academic enterprise activities not only generate income for the university they also meet the demands of regional business and communities. This aspect of helping regional business and communities is top of the government agenda of improving skills, productivity and competitiveness (Leitch, 2006). NEWUNI's claim to be a 'local' and 'regional' university is specifically successful in this regard. However, we have shown that strategic emphasis on academic enterprise is not necessarily incompatible with improving the research standing of the institution, as evidenced by the work of a small number of units within the institution. On this basis, the revised strategic aims of NEWUNI might be seen as reasonably reflecting the issues it faces.

The question of whether the revised strategic plan will lead to NEWUNI becoming a more enterprising university remains to be answered. Our investigation certainly shows evidence of some very enterprising individuals and groups within NEWUNI. The scale and range of enterprise activities support our conclusion that, institutionally, NEWUNI could not, at present, be described as enterprising. NEWUNI's revised strategic plan itself supports this conclusion and the extent to which it will develop an enterprising institution is yet to be seen. Nevertheless, contradictions between centralisation and de-centralisation, an apparently uniform "one-size-fits-all" approach to structure and systems, the lack of reference to examples of outstanding enterprise practice all give rise to concerns about the long term effectiveness of the current approach.

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