



LEADING THE ENTREPRENEURIAL UNIVERSITY

Meeting the entrepreneurial development needs of higher education institutions

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The National Centre for Entrepreneurship in Education (NCEE) is supported by the Department of Business, Innovation and Skills (BIS) to drive institutional change throughout the further and higher education sectors in the UK. It works in partnership to create better conditions for long-term sustainable entrepreneurship. It plays a key role in the Entrepreneurial University Leaders Programme which was launched in 2010, based substantially on the research contained in this report.



ABSTRACT

This paper focuses on the leadership challenge facing staff of universities across the world in moving their institutions to a more entrepreneurial mode (Keast 1995, Clark 1998, Bernasconi 2005, Thorp and Goldstein 2010). It is based upon an extensive literature review, the results of which demonstrate clearly that the issues raised in this paper are widely shared internationally¹. The paper has an action and innovation focus in that it constitutes part of the preparation for the development of the Entrepreneurial University Leaders Programme which was launched in 2010 at Oxford University's Saïd Business School for senior university academic and professional staff. This programme now runs annually with the National Council for Entrepreneurship in Education (NCEE, formerly called the National Council for Graduate Entrepreneurship) and Universities UK as lead partners. This paper demonstrates the thinking and concepts behind the programme and is used as key background material. www.eulp.co.uk

¹ The extensive referencing is designed to demonstrate the wide global context of the issues discussed. The authors thank Klara Capova of Durham University for her invaluable assistance in conducting an extensive bibliographical search.



1. INTRODUCTION

There is now a considerable amount of international literature addressing the notion of what has been termed 'the entrepreneurial university' (Wasser 1990; Clark 1998; Currie 2002; Barsony 2003; Jacob et al. 2003; Etzkowitz 2004; Gibb and Hannon 2006; Kirby 2006; Lazzeroni and Piccaluga 2003; Poh-Kam Wong et al. 2007; Guerrero-Cano 2008; Mohrman et al. 2008; Lehrera et al. 2009, Thorp and Goldstein 2010). The entrepreneurial university concept embraces universities of all types including those with a strong research tradition, as well as newer organizations (Geiger 2006; Mohrman et al. 2008; Kauffman 2009). The literature, both academic and pragmatic policy oriented, covers a wide range of issues including:

- the basic philosophical 'idea' of a university and how this is changing over time (Coaldrake and Stedman 1999; Smith and Langslow 1999; Maskell and Robinson 2001; De Ziva 2005), and the culture of the university (Daumard 2001; Davies 2001; Mendoza and Berger 2005; Anderson 2010);
- the commercialization of university know-how (Cook et al. 2008; Collier and Gray 2010);
- the process of technology transfer and exchange (CVCP 1999; Leydesdorff and Meyer 2003; Sainsbury 2007; Mittelstädt and Cerri 2008; Zhou 2008; Hagen 2008);
- the associated closer engagement of the university with industry and indeed stakeholders of all kinds (Garlic 1998; Owen-Smith et al. 2002; Charles 2006; CIHE 2008; Watson, D. 2010);
- the movement towards a 'Triple Helix' model of partnership among government, industry, and higher education (Etzkowitz and Leydesdorff 2000; Leydesdorff and Etzkowitz 2003; Thorn and Soo 2006; Etzkowitz 2008); and the inclusion of civic society in a 'Quadruple' model (Carayannis and Campbell 2012);
- the employment, employability and skills development agenda of graduates and their preparation for a global labour market (HEFCE 2003; European Commission 2005; ESECT 2005; Leitch 2006; Artess et al. 2011);
- the strategic response to the 'massification' of demand for higher education (Smith 1999; Shattock 2000; Guri-Rosenblit 2007);
- the internationalisation of universities (Noir sur Blanc 1999; Kwiek 2000, 2001; Knight 2003; OECD 2004; Altbach 2005; Altbach and Knight 2006; Maringe and Foskett 2010; Bone 2011) and their strategies for dealing with global competition (both opportunities and threats);
- the changing nature of the knowledge society and the challenge this poses to the organization of knowledge within higher education (Barnett 2000; Viale and Etzkowitz 2005; Becher and Trowler 2007; Senge 2007; Neubauer 2011);
- the pressures on universities to respond to social as well as economic local and regional development problems, albeit in a global context (Charles 2003; AUQA 2005; Smith 2007; Arbo and Benneworth 2008; Asian University Network 2011);
- the central pressure upon higher education, from central government, to foster innovation and demonstrate relevance to national and international competitiveness agendas (Lambert 2003; Williams and Kitaev 2005; Mittelstädt and Cerri 2008; Salter et al. 2010; Wilson 2012);
- the autonomy and future funding of universities (Darling et al. 1989; Greenaway and Haynes 2003; Li-Chuan 2004; Moses 2005; Bridgman 2007; Armbruster 2008; Estermann and Pruvot 2011);



- overall, in response to the above, reflections on the ‘public value’ of higher education institutions (Moore 1995; Weerts 2007).

The literature reveals the growing diversity of the university concept internationally (Thorn and Soo 2006), and within countries (Poh-Kam et al. 2007; Pan 2007). There are many different ‘typologies’ of universities, with different views of ‘excellence’ (van Vught 2008; van Vught et al. 2010) and each with different strategic agendas, some with a strong industry, technology, and occupational focus (Pratt 2001; Jacob et al. 2003). This, in turn, leads to debates about the growing influence of vocationalism in higher education (Bridges and Jonathan 2003), and the linking of the higher education sector with other institutions in a country’s education system, particularly further education and community colleges (Hager and Hyland 2003; Nikolai and Ebner 2011). At a national level, however, traditions and power-influencing hierarchies and pressure groups (Bourdieu 1999) play a major role in both constraining and shaping the nature of higher education institutions and their capacity to adapt to change. Such influence is also reflected in the education policy frameworks of governments (EU 2006), which are increasingly directive (Slaughter and Leslie 1997; Hayrinen–Alestalo 1999; Henkel 2004). In general, (but not universally²) governments throughout the world still hold considerable sway over the sector because of its substantial dependency upon the public purse (Williams 2009).

All of the above pressures have served to shape changes in organisation and governance structures of universities (Higher Education in Europe 2004; Kohler and Huber 2006; Kogan and Bleiklie 2007). They are also leading to changes in mission statements³ and strategies (Shattock 2000; Cherwitz 2002, 2005).

² See, for example, the cross country analysis in IHEP (2009).

³ See the Enterprising Universities website <http://www.enterprisinguniversities.co.uk/resources/files> for a review of missions in the UK.

These changes have been the focus of much of the debate concerning the entrepreneurial paradigm (Martin and Etzkowitz 2000; Leydesdorff and Etzkowitz 2001; Bok 2003; Becher and Trowler 2007). Leading writers on this theme have effectively made recommendations as to how to redesign institutions entrepreneurially (Clark 1998, 2004; Wissema 2008; Etzkowitz 2008), but without full exploration of the entrepreneurial organisation concept.

Considerable attention has also been focused upon the leadership challenges involved in the changing modes of governance, particularly in the UK, through the work of the Higher Education Leadership Foundation (CEL 2006, 2007), but with only limited focus upon the arguably highly relevant notion of the entrepreneurial leader. What appears to have been largely missing in the debate has been deeper basic exploration of the two key relevant concepts of entrepreneurial organization and entrepreneurial leadership and their effective interface within the dynamic change environment facing the Higher Education sector. In this paper we will explore these concepts with reference to the ‘debates’ noted briefly above.

The remainder of the paper is organised as follows. Firstly, there is an exploration of the nature of the environment impacting on higher education, the varied institutional responses and how the entrepreneurial concept relates to this. Secondly, there is an analysis of the challenge to organisation design as well as individual academic response, and how this relates to notions of the entrepreneurial organization. Thirdly, there is exploration of the leadership challenge and its particularly entrepreneurial flavour. Fourthly, there is a summary of what this means for the development of leaders and key managers in higher education institutions, and how the Entrepreneurial University Leaders Programme was conceived and designed to meet their development needs.

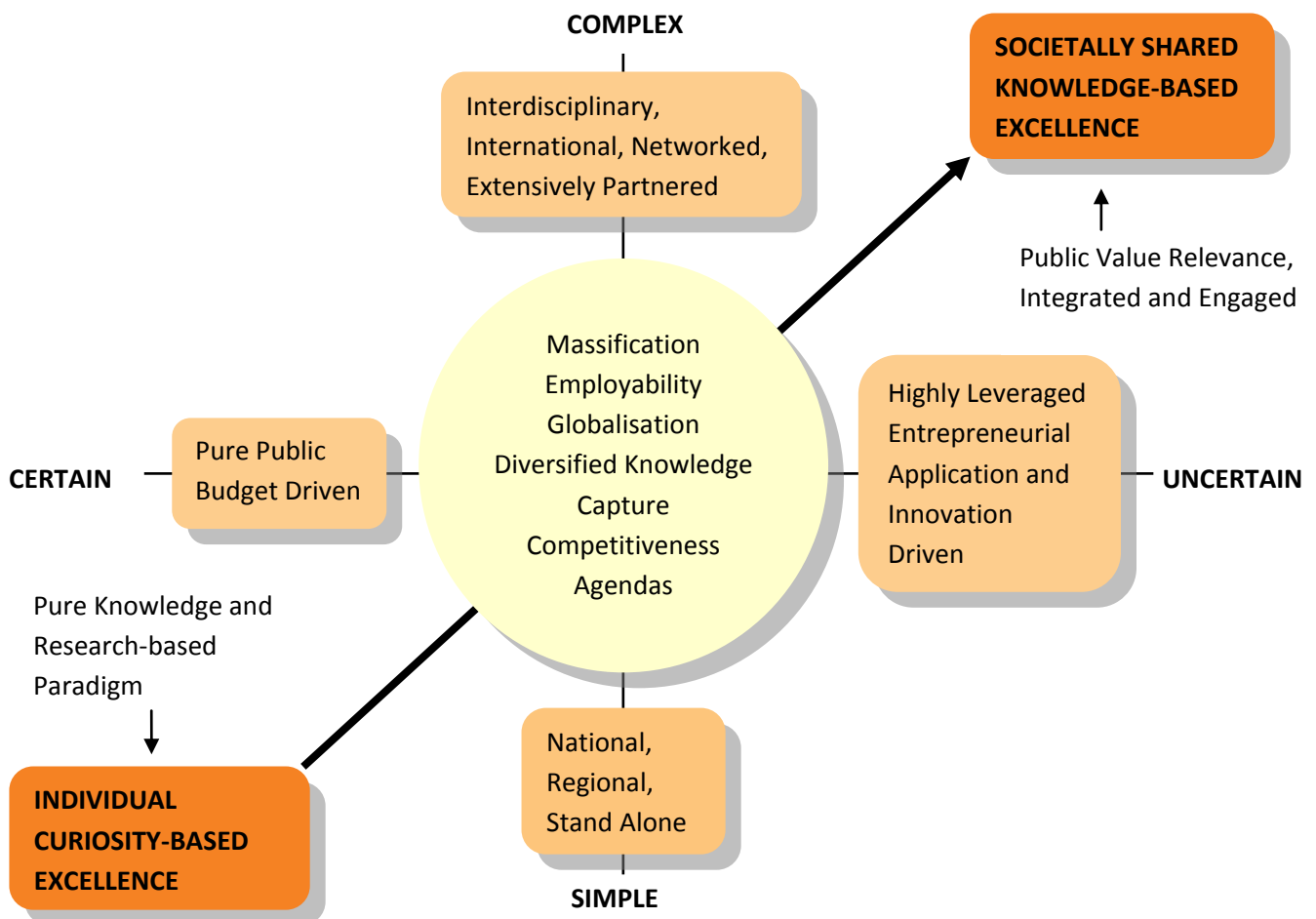
2. THE ENTREPRENEURIAL ENVIRONMENTAL CHALLENGES AND UNIVERSITY RESPONSE

Uncertainty and Complexity

The entrepreneurial concept is centrally concerned with the means of coping with and creating uncertainty and complexity (Casson 1982, Chap. 5). Its traditional essence (Schumpeter 1934), is that of creating and dealing with new and innovative combinations of ‘factors of production’ and ‘ways of doing things’. The Schumpeterian notion of ‘creative destruction’, leading to innovation and renewal, manifests itself in uncertain and complex task environments for those within the system. Dynamic task environments with high levels of change therefore demand, and emerge through, entrepreneurial initiative. Conversely, static environments lend themselves to more predictable and routinised bureaucratic patterns of response.

The changing dynamic environment of higher institutions and their respondent evolution (Doutriaux and Barker 1996; Kohler and Huber 2006; Wissema 2008) is portrayed in Figure 1.

FIGURE 1 – THE CHANGING UNIVERSITY PARADIGM





The figure attempts to characterise the evolving nature of the task environment facing universities on a simple/complex and certain/uncertain axis⁴. It highlights the way that the notion of ‘Excellence’ might be changing (Corbett 2006; Deem and Lucasa 2008; Huisman 2008; Wissema 2008). Within this frame, it seeks to summarise their response as evidenced by a growing body of the literature.

A major element of certainty in the environment has been reduced by changes in the balance of funding. There has been a movement away from a system that was at one time very dominant in some countries (although with many private university exceptions to be observed not only in the US) of almost total central or regional public funding, to a situation where a growing proportion of finance has to be sought from non-direct public sources including fees, research grants, local development monies, alumni, industry and social enterprise, contract research, and philanthropy (Williams 2009). While government remains a key player in many countries, it has moved its disbursement stance into a more directive mode. Thus, the uncertainty resulting from having to seek a greater proportion of funding from other sources is matched by pressure to move away from the simpler, more certain, ‘autonomous’ environment (guaranteed by the public purse), within which to pursue individualistic research and teaching. There is now an imperative to demonstrate more direct public value (see below). Some governments (for example Finland) are providing direct financial incentives to higher education institutions to leverage public funding.

The public pressures for change are underpinned by a number of other factors which are also contributing substantially to uncertainties and complexities, as explored in the sections below.

The Massification of Higher Education and the Charging of Fees

Of major importance is the move to what has been labelled the ‘massification’ of the education offer from the university sector (Rinne and Koivula 2009; OECD 2012). The UK Government, for example, has committed itself to higher education being open to almost half of the UK school leaving population. This is a trend evident in many other ‘developed’ countries (Rinne op cit.).

It is difficult, if not impossible for this growth in ‘demand’ to be wholly funded by the state in a situation where there is a global financial crisis impacting massively upon the availability of public finance. The emphasis is, therefore, being placed on other sources of funding, particularly fees. This is a controversial issue in many countries (Douglas 2008). It is currently extremely controversial in England, where the government has created a ‘market’ in higher education by switching the funding of teaching in universities away from direct public subvention to a system of student loans: resource therefore substantially follows student choice (UK BIS 2011). This has led to the creation of a more openly competitive market for students, requiring an entrepreneurial response from institutions. It is also leading to a more critical and demanding student consumer group, most of whom are now funding their own education through personal debt. As well, the policy of fee charging and fee repayments is receiving significant comment in the UK media, with the headline of a recent cover story in *The Independent* on Sunday (9 December 2012) declaiming “£100,000: the true cost of a degree for today’s students.”

⁴ Derived from Lawrence and Lorsch (1986), Covin and Slevin (1991) and Gibb (1985). Acknowledgement also to Professor Antti Paasio of the University of Turku Finland, who provided the germ of the idea. While the arrows the Simple/Complex and Certain/Uncertain matrix point in one direction it is possible for a university to move from any one segment to another.

⁴ The concept of employability relates to the skills and attributes developed in graduates, fitting them for the world of work. Employment relates to the job destinations of graduates, the job quality and remuneration.



Graduate Employment, Employability and Social Mobility

The global downturn has also impacted substantially on the issue of the employment and employability of graduates⁵ (ESECT 2005; Cranmer 2006). Universities are finding themselves in a competition focused upon the job take-up of their students and the quality of these jobs. Students themselves face increasing regional and global competition in the labour market (Rajan et al. 1997; Westwood 2000, Branine 2011).

The employability issue, however, goes beyond that of simple graduate unemployment and employment prospects. There are calls by industry and indeed governments for graduate education to incorporate a greater skills focus across the whole curricula (OECD 2001; Papayannakis et al. 2008; OECD 2011). More precisely, there is an articulation by employers of the need for graduates to be equipped with a range of 'enterprising skills' with foci upon creativity, capacity for innovation, networking, relationship management and risk taking (Moreland 2007)⁶. This 'need' has been extensively articulated by the European Commission in a number of studies calling for the development of the 'Entrepreneurial Mindset' in the student population (EU 2006).

There is also some evidence that this view of the importance of entrepreneurial skills to future employment is shared by the student population (Coaldrake 2001) and that universities are not seen to be fully equipped to meet this need (Coaldrake 2001; Durham University CEL 2009). While, therefore, there is certainly a demand, it is clear that it cannot easily be met within the existing institutional system (Cranmer 2006) or that industry is clear as to its need for entrepreneurial skills.

There is also growing articulation of the role of higher education in social mobility (Milburn 2012) and the UK government has recently made this one of the cornerstones of its higher education policy (UK Department of Innovation and Skills 2011). But it is clear that there are still a range of mediating influences on the link between higher education and social mobility (Nunn 2011).

The Student Voice

Against the above backdrop, there has been a substantial growth of student societies in universities across the world, many of them linked internationally in partnership⁷. They are becoming the vehicle for articulating the student need for entrepreneurship curriculum in the university. The International Consortium of University Entrepreneurs (ICUE) links university student societies in over 20 countries. In the UK, growing out from Oxford University experience, the National Consortium of University Entrepreneurs (NACUE), set up to support student entrepreneurship society development, is now reaching 120 campuses and embracing 40,000 UK student society members: with government support it has rapidly expanded. The societies may offer start-up programmes and promotions, business connections, in a few cases loan schemes and links to venture capital, and gateways to experience in SMEs. In some cases they are supported financially by the university. While they generally operate with a considerable degree of autonomy, they can benefit substantially from dedicated staff and faculty support (Williamson et al. 2009).

⁵ The concept of employability relates to the skills and attributes developed in graduates, fitting them for the world of work. Employment relates to the job destinations of graduates, the job quality and remuneration.

⁶ But in the industry view, employability skills do not always match with enterprise or entrepreneurial skills (see UK Confederation of British Industry (2012) 'Learning to Grow: what employers need from education and skills'. Education and Skills Survey 2012. UK

⁷ See, for example, the work of Enactus, (www.enactus.org), formerly SIFE (Students in Free Enterprise), European Confederation of Junior Enterprises (JADE) (www.jadenet.org), the National Consortium of University Entrepreneurs (NACUE) (www.nacue.org) and the International Consortium of University Entrepreneurs (ICUE) (<http://www.icueonline.com/>)



At the same time, in the UK, there has been a growth in student-run societies that focus on helping students to find entrepreneurial careers in the third sector. The Oxford Hub for instance, was founded in 2007 by a group of students who felt the need for better coordination between student charitable groups. Today (2012) it reaches over 500 students every week with information about opportunities to get involved, provides regular training sessions and speaker events, runs four conferences per year and places 600 student volunteers in the local community. Their success has led to the creation of Student Hubs, a national charity, and the development of Hubs at other UK universities including Oxford Brookes, Warwick, Southampton, Cambridge and Bristol.

Developing Entrepreneurial Skills

The articulation of employer need, coming from a range of private and public sources, has moved the focus of graduate entrepreneurship education beyond its hitherto major concentration upon equipping a limited number of graduates for self employment (Green and Saridakis 2008) into the area of the development of entrepreneurial skills for all (Jack and Anderson 1999; Klofsten 2000; Rae and Carswell 2000; Miclea 2004; Kneale 2005; Hannon 2006; Blenker et al. 2006; QAA 2012). This matches a public policy rhetoric which goes beyond industry demand, towards articulating the need to equip students at all levels in the education system, with personal entrepreneurial capacities to deal with greater levels of uncertainty and complexity in both their work and personal life (Poon and Hee Ang 1995; Ravasi and Turati 2005; Gibb 2007). This includes the capacity to design organizations of all kinds: public, private, and NGO, to support effective entrepreneurial behaviour (Barrie 2007). This focus has implications for the wider debate on the nature of university learning (Haggis 2006; Leisner 2006; Barrie 2007; Kinchin et al. 2008).

This broad view of entrepreneurship places emphasis, in a 'teaching' context, upon the pedagogical and organisational processes necessary to the support of entrepreneurial competency and attributes across a range of different disciplinary and multi-disciplinary contexts (Volkman 2004; Politis 2005). Entrepreneurship, therefore, becomes almost an intra-disciplinary concept intrinsic to the development of all students and university teaching staff (Coaldrake and Stedman 1999; Roman et al. 2008). This is far from the conventional business school model (Gibb 2002). The approach also, however, has implications for the organisational structures that will support the embedding of such an entrepreneurial concept within the institution (see below). Much of the recent thinking in this respect was influenced by the work of the US Kauffmann Foundation and its Cross-Campus Entrepreneurial Education Initiative (www.kauffmann.org and Mendes et al. 2006).

The broader employability and entrepreneurial skills agenda has also presented a major challenge for the work of university careers departments; many of them are now engaging with external agencies on the development of programmes for enhancing a range of graduate entrepreneurial skills, as well as capacity for self employment (www.ncee.org.uk). This shift in emphasis has major implications for the development of their own staff. Reflecting the dynamic nature of the graduate employment market where graduates are expecting to change jobs and locations numerous times, university careers departments are rebranding themselves as 'Futures' or 'Employment' departments.

The Challenge of Globalisation

Graduate employment futures, in the context of a global labour market, are characterised by frequent changes in job, occupation, and location, also potentially involving periods of involuntary self or contract employment (Rajan et al. 1997). This demands a capacity in graduates to think and act both locally and globally in an entrepreneurial way. Their ability to develop this capacity becomes a function of the nature of the university itself, and its strategies to



bridge the local–global interface. In this context, the policy thrust in Europe has been to firmly link entrepreneurship with competitiveness and education (EU 1998, 2005, 2006, 2007, 2008).

There is much debate on this issue in the education literature (Carnoy 1999; Brush et al. 2003; Altbach 2005), with a distinction made between exploring the impact of globalisation, and the changes demanded or resulting from wide ranging global pressures (Kwiek 2000, 2001; Toakley 2004; Scase 2007) on the one hand, and internationalisation, or the processes by which a university seeks to respond to threats and opportunities on the other. In short, globalisation is an external force and internationalisation is a response to that force. Distinctions can, thereafter, be made among the motivations of universities to internationalise, the targets they set for themselves, the processes they pursue, and the desired outcomes.

Already, at the beginning of this century, across Europe, the majority of higher education establishments saw internationalisation as of major importance (Noir sur Blanc 1999). The imperative in this respect has since become acute (UNESCO 2003; OECD 2004; International Association of Universities 2005; Bone 2011). This reflects the fact that institutions increasingly perceive themselves as being in an internationally competitive market place; for staff, for students, for income generation, and for research (UNESCO 2003; Altbach and Knight 2006, Middlehurst and Woodfield 2007).

Prestige, not finance, appears to be a major motivation: internationalisation is seen to raise the national as well as the global profile (Altbach and Knight 2006). It can also be seen as part of a competitive strategy to improve quality of staff and students via overseas recruitment, as well as a means of enhancing student experience and existing staff development (Green and Baer 2000; Byrom and Dervin 2008). It can lead on to curriculum development and innovation as well as greater cultural sensitivity. There is, for example, increasing emphasis upon demands for a more global approach to curriculum and pedagogical development, reflecting not only the awareness of how different societies and cultures learn (Bourn et al. 2006), but also consideration of the future global mobility of graduates (King et al. 2010). Developing partnerships, both academic and industrial, also seems to be a powerful tool in this respect (Nivesjo et al. 2011).

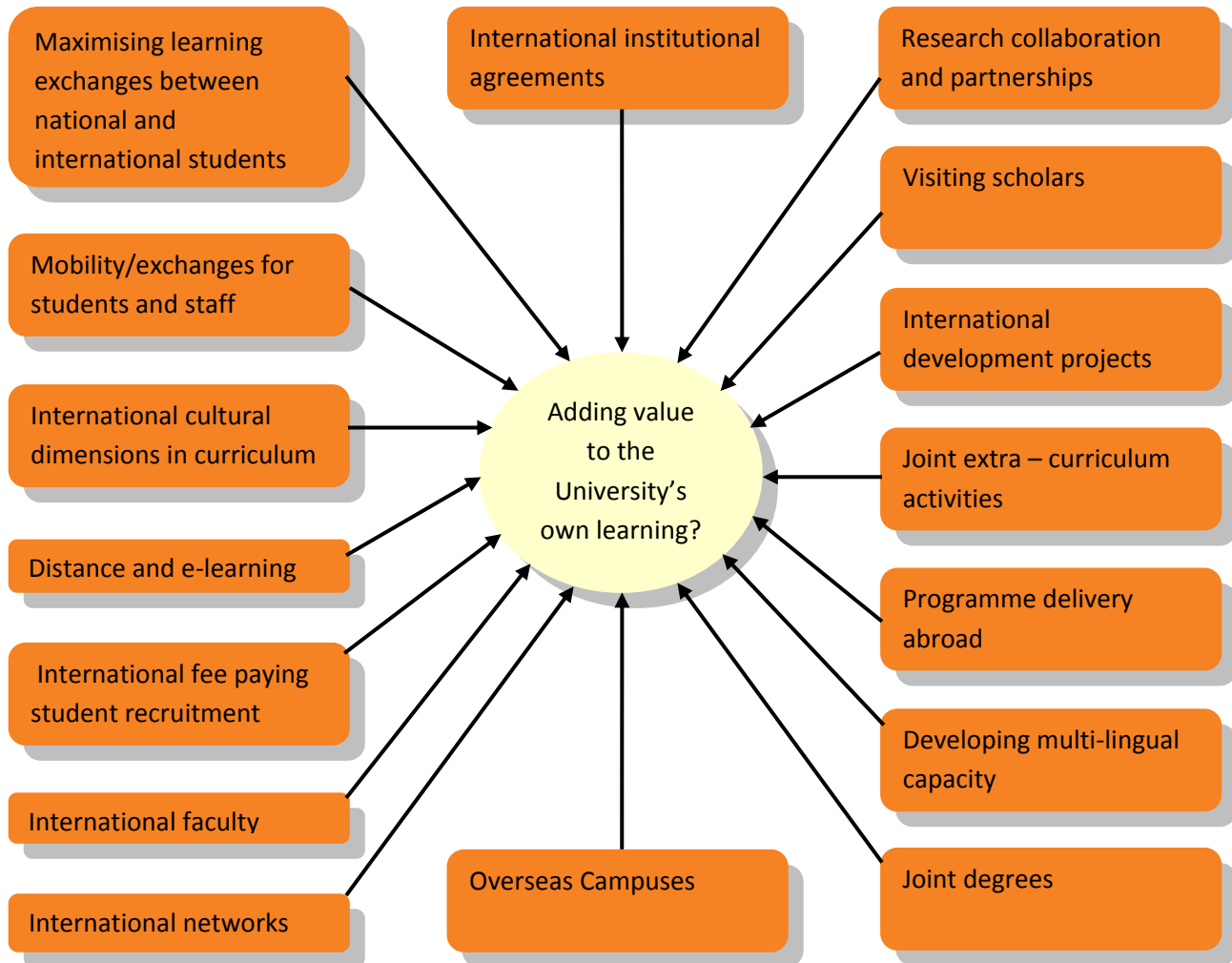
The Internationalisation Strategies of Universities

Commitment to internationalisation involves elements of entrepreneurial risk taking and strategic choice (Knight 2003; Shattock 2009).

Figure 2 encapsulates the various target processes and activities involved in internationalisation. Some of these activities and processes carry more risk than others. Establishing overseas campuses, for example, entails high risk. The major issue here is to what extent international activity adds to the global understanding of the institution, enhances student and staff learning, and enables it to truly understand, be sensitive to, and work with, different cultures (Green and Baer 2000; Welikala 2011).

The centre-point of Figure 2 is arguably the most important strategic outcome: the degree to which the institution adds value to its own learning as a result of the activities listed, and the degree to which it rewards such learning. Overall, in outcome evaluation terms, there will be a need to measure the degree to which the activity brings both status and material rewards (income and other resources) that are sustainable. The former appears to be as important, if not more so, than the latter - although in the long run the two are intimately related.

FIGURE 2 - ACTIVITIES AND PROCESSES INVOLVED IN UNIVERSITY INTERNATIONALISATION



Global Knowledge Configuration and Technology

A major influence upon the drive to internationalisation is the rise of the global knowledge economy (Peters 2003) accessed substantially through the Internet (Senges 2007) and the new learning technologies. The Web has effectively eaten into the local and national monopoly of knowledge that universities have traditionally enjoyed. It has also created new combinations and foci for knowledge (Delanty 2001) in that it has no respect for traditional disciplines and is more open to the organisation of knowledge on a 'need to know' and issue basis. It challenges the monopoly that universities have hitherto had on the organisation and delivery of 'explicit' knowledge (Habermas and Blazek 1987; Delanty 2003); and it challenges the power of elite groups, who maintain and channel knowledge through major journals and publications (Bourdieu 1999). It considerably reduces the time it traditionally takes, through academic journals, to bring new knowledge into the public domain.



Journals and their academic editors and boards are trying to adapt to this competitive pressure exemplified by the growth of open access journals⁸ and individual academics opening up their ideas and findings through their own websites and other social media (Facebook, Twitter, You Tube) entries. The sharing of experiential and tacit knowledge via the Internet also exposes the 'know how' position of universities.

The extensive use of social media by youth for purposes of knowledge access and exchange creates a major challenge, particularly for older academics, but also a major teaching and learning opportunity for the future (Selwyn 2012). It not only affects the way teaching is delivered but also how curricula are designed and degree programmes completed. Universities are also redesigning their buildings to provide different learning spaces that enable social learning opportunities.

In addition, and faced with this trend, academe is confronted with the challenge of itself becoming more of a 'learning organisation' (Kristensen 1999), rather than solely a 'learned organisation.' On top of this, it is opening itself up to learning from a wider range of stakeholder sources, involving engagement in the 'community of practice' (Wenger 1998), as well as in more formal/informal processes of knowledge exchange.

A key factor in this change process is the growth of online learning (Institute of Educational Technology 2012), and in particular the development of Massive Open Online Courses (MOOCs). Major US universities, MIT, Harvard, Princeton, Berkeley and Stanford are leading the field in this area (Daniel 2012), offering free lectures and courses which may be certificated but few are, as yet, academically accredited⁹. Private companies are also, however, moving into this field¹⁰, and the high student volumes involved are attracting venture capital.

The scale of the problem of staff and students dealing with the 'massification' of data is leading to a focus upon the organisation of such 'Big Data': how to effectively link it across traditional boundaries, and the staff/student development and training issues involved (McAuley et al. 2012).

Knowledge Transfer, Innovation and Engagement Processes

In the developed economies, active university engagement in knowledge exchange has also been substantially driven by a public policy agenda, which has placed higher education firmly in the forefront of enhancement of national innovation and competitiveness (Lee 1996; Agraval 2001; Shane 2004; Kweik 2005; LERU 2006; OECD 2009; BIS 2011). Over the past decade in particular this has been the lever for change in the way that universities disseminate knowledge (Lee 1996; Mendoza and Berger 2005). The traditional mode in respect of science and technology (the main focus of public pressure) was independent creation of knowledge beyond direct control of government (although substantially funded by it). Research was driven by curiosity not economic interest, and disseminated by publication of the papers. This last mentioned was the main channel for placing new knowledge into the public domain. It was assumed that 'industry' would read, digest, and act when appropriate.

⁸ For an indication of the volume of Open Access material see Bielefeld Academic Search Engine:
www.base-search.net/about/en/index.php

⁹ In response to the US initiatives King's College London, along with the Universities of Birmingham, Bristol, Cardiff, East Anglia, Exeter, Lancaster, Leeds, Southampton, St Andrews and Warwick have partnered with FutureLearn, a company set up by the Open University that will offer free, non-credit bearing courses to internet-users around the world.

¹⁰ See for example www.udacity.com , www.edx.org



Over the last half-century the limitations of this approach have been very exposed, in particular with reference to the time lags involved in publication, and the dependency upon the disposition of individuals who may move both location and field of interest and their associated interaction with industry.

An almost universal approach to dealing with this problem has been through knowledge transfer institutions and mechanisms, such as:

- the creation of science and technology parks, adjacent to, and sometimes owned, by universities;
- the development of the role of intermediaries such as industrial liaison offices;
- the opening of technology transfer and information offices (Chapple et al. 2004);
- the development of student and staff incubators (Ylinenpää 2001);
- the launching of new venture programs for staff and students;
- the development of clearer IP policies and arrangements for the licensing and patenting of university know-how (Baldini et al. 2006);
- the organization of spin off activity;
- the creation of venture and loan funds.

There is evidence, however, that this is not enough. A growing body of the literature (Hughes 2003; Link 2006; Dooley and Kirk 2007; Abreu et al. 2008) argues that the key to successful knowledge transfer is a process of continuous dialogue in building up social networks (Nicolaou and Birley 2003), success in which is a function of development of strong personal (as opposed to institutional) relationships over time, leading to the creation of trust (a key element in entrepreneurial activity). It has even been argued that an over-focus upon transactional mechanics such as licenses and patents may distract from the development of personal intimacy and trust (Dooley and Kirk 2007; Brown and Jenkins 2008).

The role of the individual academic in building the relationship is that of bringing a wider perspective to a client problem, being prepared to engage in development out of research, and by this means help to bridge the gap between explicit and tacit knowledge, which is often highly contextual. This relationship involves complete engagement with a process and is not just a simple case of commercial exploitation of a particular piece of university research (Agraval 2001). In this way, the concept of transfer partnerships takes on a deeper meaning than that embodied in some official policy recommendations (Sainsbury 2007).

The building of relationships provides a number of benefits to the university including: potential additional funding for research; access to proprietary technology held by industry; and enhanced status and faster feedback loops on its own concepts and ideas (Geiger 2004, 2006; Dooley and Kirk 2007). It may also put pressure on the university to generate problem-focused multi disciplinary teams and centres (Campbell et al. 2002; National Academy of Science USA 2005).

Regional, Local and City Engagement

It is in the field of knowledge transfer and engagement that the regional role of universities has been most highlighted (Boucher et al. 2003; Charles 2003, 2006; IHEP 2007; Arbo and Benneworth 2008). There is an obvious potential link between a university's contribution to innovation and its contribution to a region's development (Smith 2007).



This link is reflected in the growing focus of European government regional policies since the 1980s upon innovation and technology development, and the exploitation of university knowledge particularly with the support of the European Commission (Goddard and Kempton 2011). Worldwide, the models of MIT (O’Shea et al. 2007), Silicon Valley and North Carolina in the US have become iconic along with the Cambridge Phenomena (Segal 1985) in the UK. There are, however, many other European examples on offer, for example, Linköping in Sweden, Turku and the new conglomerate Aalto in Finland, and Twente in the Netherlands (Braun and Diensberg 2007). The label of the ‘Entrepreneurial University’ is, therefore, frequently associated with the notion of the university as a regional innovation hub (Sole-Parellada et al. 2001; Thorp and Goldstein 2010). It appears to be widely accepted in this context that successful innovation necessarily involves a highly interactive process of engagement among universities, industry, and government. This engagement process has been labelled the Triple Helix Model (Benner and Sandstrom 2000; Shinn 2002; Leyesdorff and Meyer 2003; Zhou 2008; Etzkowitz 2008).

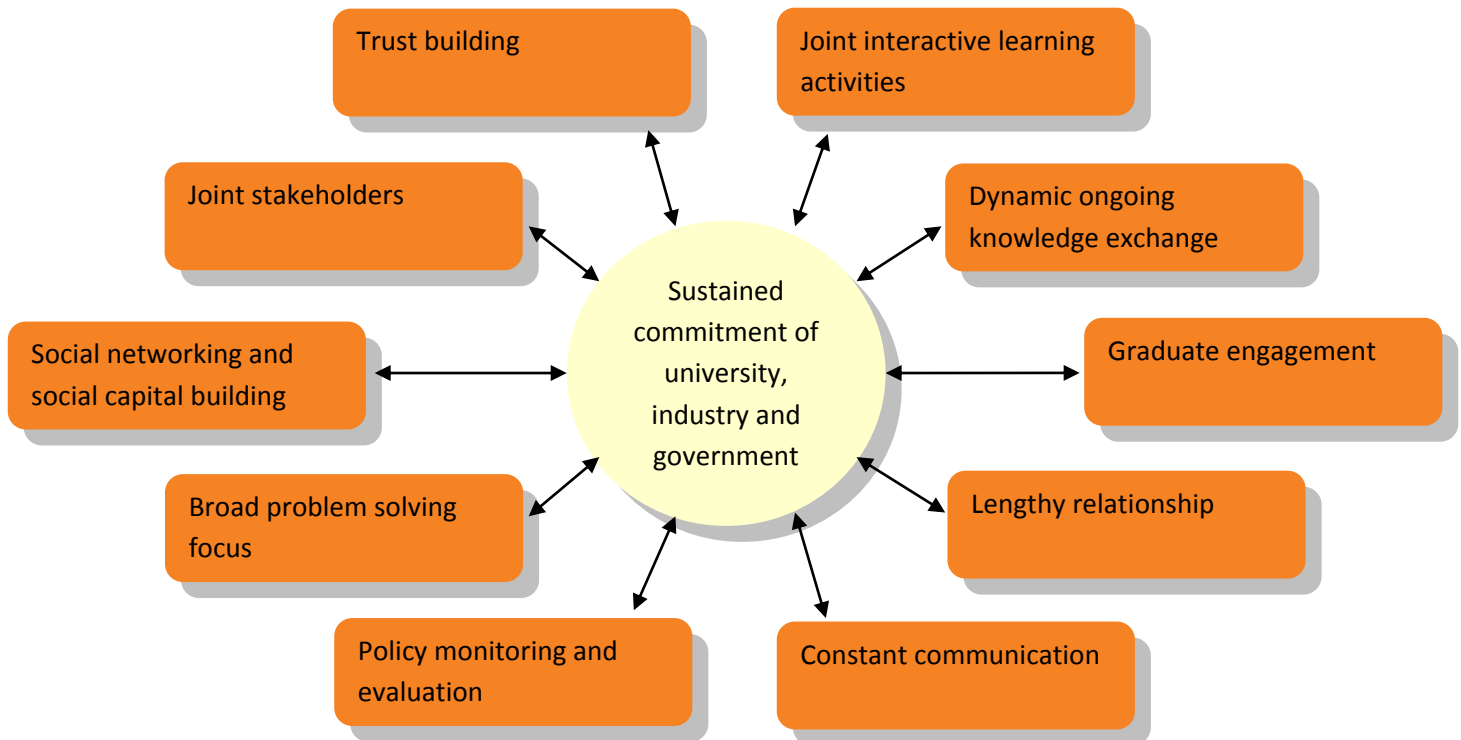
This model portrays an interactive process of research funding through private and public partnerships focused upon the development out of research and learning, by all partners, from this process. The model is not solely a regional one, but has a strong regional orientation, particularly when it engages with small and medium-sized firms. It assumes that entrepreneurs will work in the university and academic staff in the company, that the partnership may also link with other sources of funding and that there will be clear patterns of co-ordination (Etzkowitz 2008). The model has been widely used internationally in initiatives to create partnerships between business, public authorities and universities, mainly in pursuit of technical innovation (see Figure 3). Development from the original work has focussed on linking the model more widely with the clustering of knowledge, innovation and broader engagement with civil society as well as issues of sustainability and the environment (Carayannis and Campbell, 2012)¹¹. The model has also been associated with the Mode 2 concept of knowledge flows and its development discussed below (Gibbons et al. 1994; Novotny 2003).

While universities now frequently have ‘professionally managed’ offices for regional development and knowledge transfer issues, it has been argued above (Dooley and Kirk 2007) that even though they are a window to the outside world, they may constitute a barrier to total academic staff commitment and ownership, which is at the heart of Figure 3.

¹¹ Branded as Quadruple and Quintuple Helix.

FIGURE 3 – THE BASIS OF THE TRIPLE HELIX MODEL

Higher Education, Government and Private Sector Partnership



Universities have increasingly been drawn into playing a stronger regional and city (Goddard and Vallance 2011), social and economic development role in many other ways (Arbo and Benneworth 2008). While they are often important employees and indirect job generators in a region in their own right, they can take on the mantle of being a leading network hub for focus upon regional development issues. They can act as amateurs for the development of sustainable networks of exchange on important issues. They can focus on supplying skilled young people to a region and are a mechanism for enhancing social mobility. Through their outreach education and training programmes, they can seek to bring forward the future and act as a major learning source for regional stakeholders. They can, through their reputation and specialist expertise, play an important role in attracting investment to a region.

Via research, universities throw independent light on key development issues and act as a means for independent evaluation. They often act as an exporter, bringing in income to a region, but also, through their internationalization work, they can bring major contacts into the locality, and thus raise its visibility and capacity to build networks abroad. They also often act as an intermediary in articulating regional development issues to central government in areas of technology policy, education and skills development and competition policy. Overall, they may take a central place in the development of many aspects of a region's culture. There is clear evidence that across Europe,



universities are taking on more of the role of bridging local with global (Arbo and Benneworth 2008). Whether an individual university wishes to play a transformational role as a regional change agent is, however, an issue for its individual mission and strategy.

University Funding, Enterprise, Autonomy, and Academic Freedom

It was noted above that throughout the world there has been a gradual evolution in the way that universities are funded, as public budgets fail to take the strain of rapidly growing student numbers (Zumeta 2007; Williams 2009). In the UK, for example, base public funding in the past has provided only 40% of university resource, the remainder expected to come from a variety of sources including hypothecated (targeted) public programmes, European or local government funding, student fees (Greenaway and Haynes 2003), research funding, contract work, foundations, alumni donations, and catering and other services – in 2007, altogether some £7bn of £18bn of the UK university income came from non-state sources (Universities UK 2007). The position has, however, changed dramatically in England since 2011 with the new market based fee structure referred to earlier and direct funding for teaching removed altogether.

There is no space in this paper to explore the intricacies of higher education funding, widely debated elsewhere (Cunningham and Cochi-Ficano 2000; Rolfe 2001; De Ziwa 2005; Douglas 2008; Williams 2009), but the issue is of relevance to the entrepreneurial concept in a number of ways. Most important is the degree to which funding impinges upon the autonomy of institutions (Darling et al. 1989; Li-Chuan 2004). Here, there has been, and continues to be, much debate. On the one hand, there are those who argue that public funding constrains academic freedom particularly as it becomes more directive and that diversified income sources ensure a higher degree of freedom (Li-Chuan 2004). Others argue that funding raised from elsewhere, particularly from the private sector, in many cases has strings attached to it (Leslie and Ramey 1998; Collini 2012).

In reality the detail is more complex. Much depends upon the mix of funding; for example, monies from alumni, charitable donations, and research grants from independent bodies may be less likely to impinge upon autonomy than commercial contracts (Standard and Poor's 2008). More subtly, much also depends upon the impact of funding arrangements on choice of personnel (freedom to appoint staff and students), freedom to determine curriculum and the balance of research and teaching, the make-up of governing boards and the processes of accountability which impact upon freedom to develop (Li-Chuan 2004). A major issue in funding overall is the degree to which it impinges on the fulfilment of the university mission (Hearn 2003).

Funding strategies are therefore becoming more complex, with governments forcing the issue by giving matching incentives to fund-raising from private sources¹². The search to 'buy autonomy' has created considerable interest in the cost benefit of 'fund raising' through development offices (Baade and Sundberg 1996) and has caused reflection upon the relatively poor performance of European universities in tracking, building relationships with and raising funds from, alumni compared with their American counterparts (Thomas 2004; Standard and Poor's op. cit.). It seems clear that there will be a substantial growth in private sector provision in higher education in some countries, although in many countries it is already the norm, for example Eastern Europe and ASEAN countries. In England, there is a clear government strategy to open up the sector to more competition with an associated tactic to provide

¹² For example, in Finland the government has introduced an incentive programme for raising of finance by leveraging private with public funding.



easier licensing of providers, for example BPP¹³. In response to the above scenario, the privatisation of some public universities or public/private partnerships is very much on the agenda (IHEP 2009).

Altogether, the financing issue is yet another central focus for entrepreneurial management, with considerable risk attached, not only of a simple resource nature.

Knowledge Configurations and Creating Public Value

The issues discussed above demonstrate the increasingly complex and uncertain task environment facing higher education. University responses to this have heightened the intellectual controversy concerning the central 'idea' of a university (Slaughter and Leslie 1997; Gilbert 2000; Graham 2002; Kirp 2003; Evans 2004; Collini 2012). At the heart of the debate is the notion that universities are being driven by a range of market forces into commercial organisations focused upon the 'sale' or 'capitalisation' of knowledge. The latter is defined as 'knowledge created for use as well as for disciplinary advance and linked with economic and social advance' (Etzkowitz 2004). Some writers go so far as to describe universities as 'knowledge factories' (Lazzeroni and Piccaluga 2003).

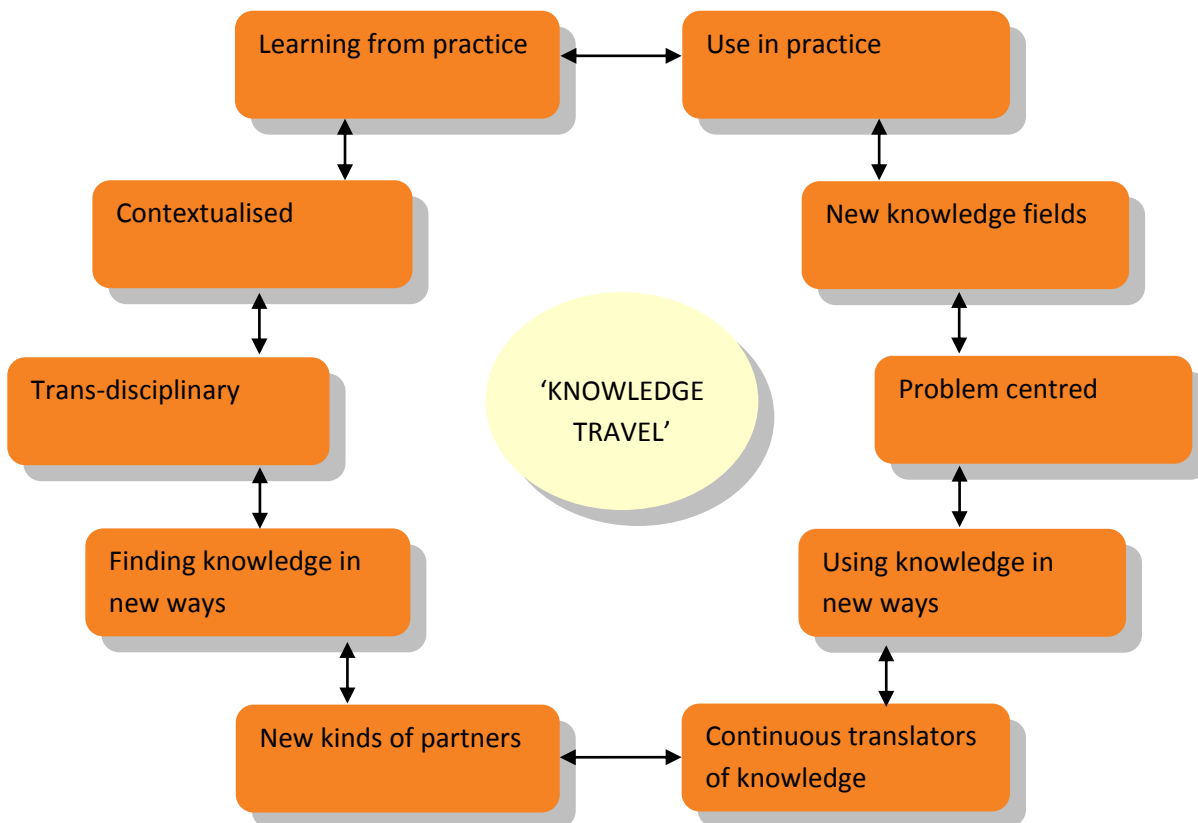
Thus, the intellectual autonomy of the institution and curiosity-based research, in particular, is seen to be eroded in favour of 'value in use' (Albert 2003)¹⁴. This has been characterized as a move from a Mode 1 model where the university was an independent space for discovery, beyond control, with government, as key funder, the main guarantor, to a Mode 2 typology of an organization engaged in high levels of interaction with a range of stakeholders where sustainability is a function of a broader legitimization as seen through the eyes of the state, private partners, and indeed society as a whole (Gibbons et al. 1994; Dooley and Kirk 2007; Rinne and Koivula 2009). The university moves from being a niche organization towards a more open and comprehensive organization (Nowotny and Scott and Gibbons 2001). Funding in this Mode comes from an ever-widening range of sources. The university sees its offer as a public good, embracing the concept of 'knowledge travel' (Barnett 2000), and moving away from its dependency upon 'credentialism' (Rinne and Koivula 2009).

The seminal work of Novotny (Figure 4) has been widely debated, as it provided the intellectual gateway to discussion of the changing relationship of universities to society, the nature of how best to engage with a wide range of stakeholders and manage complex knowledge flows and the impact of new learning technologies. It has, in particular, led to development of concepts as to how knowledge can better be organised in pursuit of innovation, embodied in a Mode 3 model (Carayannis and Campbell, 2012) and experiments such as Living Labs.

¹³ www.bpp.com

¹⁴ Leading to the establishment of a council for the Defence of British Universities by high profile academics and writers.

FIGURE 4 – THE MODE 2 UNIVERSITY AND THE NEW FOCI OF KNOWLEDGE



The Mode 2 characterisation firmly places the university within the concept of being an instrument for creating 'public value' (Nowotny et al. 2003; Alperovotz et al. 2005). This concept developed by Mark Moore of Harvard University (Moore 1995) has commanded a great deal of attention world-wide, and particularly from government in the UK (Kelly et al. 2007). It is seen as an alternative to the measurement of outcomes from public investment via cost benefit analysis. The three key essences of the model are: a strong initial planning focus upon the value of the proposed 'offer' to the community; the creation of legitimacy for courses of action by full engagement of the relevant community stakeholders; and ensuring that the plans and proposals are clearly within the capacity, goals, and values of the institution. Of key importance to the changing university scenario described earlier, is the concept's emphasis upon gaining legitimacy by wide engagement of interested parties in the process of doing things.



3. THE ENTREPRENEURIAL UNIVERSITY CHALLENGE

The Concept of the Entrepreneurial Organisation

Much emphasis has been placed by many of the referenced authors to the need for a university to be highly flexible in its response to the environment described above (Vaira 2004). The above paragraphs have briefly characterized some of the responses. The combination of different demands being made by government still, in many countries, a major source of funding, via processes of quality measures rather than direct control, combined with the competitive market, and stakeholder demands described above, have presented considerable challenges to the university organisation design around the world (OECD 2005, 2007; Olssen and Peters 2005; Pan 2007; Pilbeam 2008). Contingency organisational theory demands that institutions are designed around the specific nature of their task environment and thereafter flexibly adjust in response to change in the environment (Lawrence and Lorsch 1986; Covin and Slevin 1991; Namen and Slaven 1993). Many writers have focused upon this issue in the higher education context (Coaldrake 2001; Salmi 2001).

Burton Clark, perhaps the most influential writer in this field, argues (2004a) on the basis of a number of case studies (including two UK universities) for five key components of entrepreneurial university organisation:

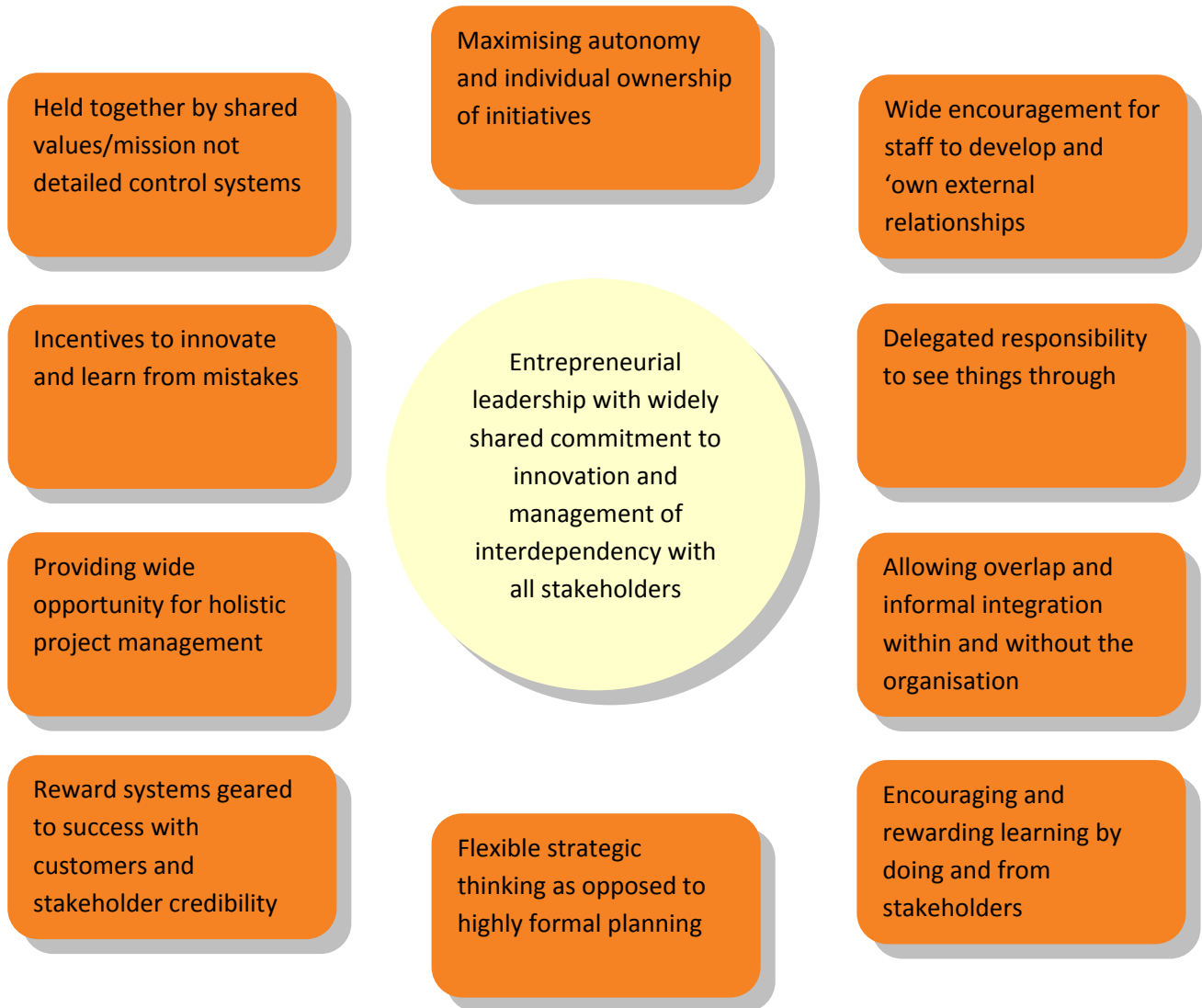
- a strong central steering core to embrace management groups and academics
- an expanded development periphery involving a growth of units that reach out beyond the traditional areas in the university
- diversity in the funding base, not only by use of government third stream funding but from a wide variety of sources
- a stimulated academic heartland with academics committed to the entrepreneurial concept; and
- an integrated entrepreneurial culture defined in terms of common commitment to change.

While his arguments can clearly be seen to be in response to some of the pressures noted above, the depth of his research has been criticized (Deem 2001; Finlay 2004). Moreover, no strong conceptual argument (as opposed to an empirical conclusion) is put forward to link this with his call for institutions to be more focused upon innovation, taking risks, and dealing with uncertainty.

Etzkowitz, another leading writer on this issue, puts forward (2004) five propositions concerning the entrepreneurial university concept, namely that such institutions are focused upon: the capitalization of knowledge; managing interdependence with industry and government; are nevertheless independent of any particular sphere; are 'hybrid' in managing the tension between independence and interdependence; and embody reflexivity, involving continuous renewal of internal structures.

The observations of these writers and others can be plotted against a broader conceptual frame setting out key components of an organisation moving to cope entrepreneurially with high levels of uncertainty and complexity. Such an organisation is designed to maximize the use of effective entrepreneurial behaviour appropriate to the task environment (Lawrence and Lorsch 1986; Covin and Slevin 1991). Figure 5 presents such a framework for evaluation of the broad entrepreneurial challenge to university organisation design. Such a design aims at empowerment for individual enterprising action at all levels of the organisation, with associated freedom to innovate, take risks in this process, build internal and external social capital and gain commitment to see things through (Gibb 2002).

FIGURE 5 – THE UNIVERSITY AS AN ENTREPRENEURIAL ORGANISATION



The organisation model in Figure 5 removes the entrepreneurship concept out of its confines to a business and 'commercialisation of knowledge' box. Its focus is upon freedom to innovate across the broad spectrum of university academic activity embracing: curriculum, pedagogy and programme design; research design and dissemination; research and development; trans-disciplinary ventures and boundary crossing in general; stakeholder relationship engagement, partnership and development; knowledge exchange; and organisation development.



It is important to distinguish the entrepreneurial model from other organisational approaches and concepts introduced into academe over the past decade, in particular the 'new managerialism' (Deem 1998, 2001), the 'corporate business model', 'professionalism' (Blackmore and Blackwell 2006; Kolsaker 2008) and 'marketisation' (Bok 2003). Entrepreneurial organisation is not synonymous with any of these. While the entrepreneurial concept stretches well beyond the business and new venture context it is distinct from, but possibly overlapping with, certain components of the managerialist concept as it is to be associated with a certain style of leadership. But managerialism has become associated with many of the 'rules' of corporate bureaucracy, namely: highly formal planning processes and information systems; tight accountability and standard setting; audits; order; and demarcation – the antithesis of entrepreneurial organisation.

'Professionalism' is associated to some degree with managerialism by its association with the bringing into universities of a new culture of professional managers (Sporn 1996) leading, some argue, to the possible marginalisation of academics (Deem 2007). This contrasts with an entrepreneurial emphasis upon enhancing the capacity of the existing body of academe to lead change. Finally, the entrepreneurship concept is not at all wholly synonymous with 'marketisation' either in the pure commercial sense of setting up the university to 'sell' know-how nor in the sense of adopting business and other approaches to reaching customers although it may embody appropriate elements of both at times. Certainly, the concepts of 'branding' the university, image creation and reaching out to the public through various channels especially through the media are important.

The Organisation Development Challenges

The framework above (Fig. 5) can be used to explore some of the organisation development challenges. Entrepreneurial organisations have a strong individual development and initiative focus, empowering individuals at all levels of the organization to enjoy freedom for action. The dominant controlling and motivating parameter is not systems but shared mission, values and culture, and trust (Davies 2001; Daumard 2001). Thus, a major challenge and opportunity to universities is to build entrepreneurship upon the considerable freedom enjoyed by departments and individuals, traditionally embodied in the notion of a 'community of scholars', moving this more towards a 'community of practice' (Todorovic et al. 2005; Wenger 1998). In this respect there are a diverse number of issues.

Universities can be characterised as pluralistic organizations with different departments having very different external orientations and indeed academic values. While a strong central steering group, as Clark has argued, may therefore be desirable in reinforcing the mission, the major challenge is that of placing ownership of innovation and change with academic departments, finding champions therein who, perhaps incrementally, can move innovation up the departmental agenda. This is not an easy task. There is evidence to suggest that departments are often heavily focused upon 'defending their patch' within the present organization system rather than upon innovating (Bryman 2007).

It has already been argued above that establishing intermediary professional units to 'manage' a range of externally focused activities, in the absence of departmental initiative, may emasculate the capacity and motivation for academics to take up challenges in their own distinct environment. In stimulating academic initiative, formal strategic planning and mission statements may be less important than encouragement of flexible strategic thinking, integrating action with strategy, when confronting opportunity, and threats (Courtney et al. 1999). Shattock argues that, in the present climate, strategic planning should be 'a framework only for opportunistic decision making' (Shattock 2000).



Entrepreneurial innovation will also require flexibility in organisation design, to allow the growth of overlap and interdependency among different departments, projects, and even individuals in adjusting flexibly to the demands of society for new combinations of knowledge. This may lead to Schumpeterian 'creative destruction' (Schumpeter 1934), as those departments slow to adapt, fade or merge into new units. Overall, in this scenario, there will be a challenge to the reward system in the organisation in moving it towards recognition of innovation, successful integration of knowledge, and relevance to the wider community.

While the above may challenge the university in the way that it measures excellence (Amaral and Magalhaes 2003; Schuetze 2007), incorporating the concept of 'public value', as described above, does not necessarily, as is sometimes argued (Mawditt 1998; Berglund 2008), threaten emphasis upon excellence in research, nor the essential 'idea' of a university. Etzkowitz, for example, argues that the current concern for the wider embedding of knowledge takes universities back to their original objectives.

Others argue that the new 'DNA' of knowledge is 'polyvalent' and intellectual with the interdisciplinary, theoretical, and practical merging together (Viale et al. 2005). In a seminal paper for the US Kauffmann Foundation (2008), Michael Crow, the president of Arizona State University, a major US research university, argues the case for the 'New American Research University' with academic enterprise as the 'organising principle'. His targets for such an organization are:

- academic excellence focused upon, and backed up with, maximising social impact;
- competitiveness;
- agility;
- adaptability;
- inclusivity;
- focusing globally yet also locally;
- responsiveness to changing needs;
- speedy decision-making capability.

His view of the university is as a 'force for societal transformation' with a culture of academic enterprise focused upon user-inspired relevance and transcending disciplinary-based limitations. The concept of the 'citizen scholar', also increasingly debated in the US (Cherwitz 2005), aligns with this where the focus is upon empowerment of the individual. These concepts have major organisational and physical design, as well as intellectual, implications.

Governance and the Entrepreneurial University

It is the view of the UK committee of university chairs (CUC) that stakeholders external to the university have a major role in holding it to account (CUC 2000, 2004, 2009). The main mechanism for this in most universities across the world is the council, or board of governors (Dearing 1997; CUC 2000; Chan and Lo 2007). There has been much debate internationally on governance in universities (OECD 2003; Ka Ho Mok 2005; Kohler and Huber 2006; Bleiklie and Kogan 2007; Schonfield 2009; Mora and Vieira 2009). This has focused upon a number of issues of which the power of the council & board in approving and shaping a university's strategy is major. (Navarro et al. Navarro and Gallardo 2003; Shattock 2009: Chap. 4). The debate explores: the relationship between the chair of the council and



the board and the university's vice chancellor or principal; the size and composition of the board¹⁵ and the balance of its representation; what should be its key performance indicators; and, perhaps most important, in the context of this paper, the board as an instrument for leading change (Lombardi et al. 2002).

In line with the ideas of Clark (2004a, b), there have been moves to streamline boards; and to strengthen their power and links with the VC or CEO and his or her management team. In the UK this was a main recommendation of the 1997 National Committee of Enquiry into Higher Education (Dearing 1997). This led to internal changes in many universities, with a strengthening of the power of an executive team at the expense of the traditional academic representative body, the senate. This has also been accompanied, in the UK and also more universally, by internal changes aimed at reducing bureaucracy and removing a heavy dependency upon committee structures which are said to impede innovation. There has also been a broad trend towards the appointment of professional administrators reporting to a small senior executive team. All of these changes are contested by some, on the grounds of weakening democracy in the institution and marginalising the concept of a community of scholars (Graham 2002, 2003; Zhou 2008; Berglund 2008). They have, however, been counterbalanced in some cases by processes of greater devolution to academic departments.

In the context of this paper's focus upon entrepreneurship, the issue of governance can be assessed in several ways. First, by the degree to which streamlining the board enhances the university's engagement with external stakeholders across the whole institution, building the 'learning organisation' capacity as described above (Miller and Katz 2004). Second, whether, as a result, the university becomes more sensitive in its long-term strategies to wider societal needs. Third, whether there is an impact on decision-making structures throughout the organization, as discussed above, other than at the top. And, overall, whether it increases the capacity of the organization to innovate. There is currently little research that addresses these issues in the context of the effectiveness of governance arrangements.

The Individual Academic Entrepreneur

Within every university, and perhaps within every department, there will be some academics who will be continuously looking outward, harvesting knowledge, and experience from a wider range of stakeholders than can be found within the 'halls of academe' (Bird and Allen 1989). There will also be some who in general 'buy into' the concept of the entrepreneurial university as outlined above, although they may have a widely different balance of views as to what this means in both concept and practice (Duberley et al. 2007; Mcinnis 2001; Meyer and Evans 2007). Moreover, academics find themselves in very different types of organisation within the sector, with different cultures and views of what constitutes 'excellence' (Finlay 2004). Etzkowitz, for example, has radically posited the notion of research groups as 'quasi firms' (2003).

While there may have been an erosion of the power of academics in some universities the individual department and staff member still has considerable independence. In what has been described as the traditional liberal university model (Delanty 2001) the degree of interaction with the external environment was wholly an individual choice. As universities, in general, (some more than others) move to what Delanty describes as a reflexive model (based upon exchange and reciprocity between knowledge producers and users) there is more scope for rewarding the academic entrepreneur. In the scientific knowledge transfer context, described earlier in this chapter, this

¹⁵ In the UK the Dearing report (1997) (Higher Education in the Learning Society) led to the streamlining of boards.



becomes important as it is the personal academic interface that is elevated above the impact of physical and administrative structures, as characterised by science and technology parks and technology transfer offices (Klofsten and Jones-Evans 2000; Franklin et al. 2001).

The evidence suggests that conflicting interests for academics do arise in the arena of practical engagement, with industry in particular, and that there are career uncertainties for those academics who actively engage (Duberley et al. 2007). But the same study demonstrates that scientists often view the prospect of commercialisation of their work as a means to its full realisation, and demonstration of their own potential. While the increased blurring of the distinction between pure and applied science seems to be more widely accepted, the key issues for academics seem to be more about resources, career concerns, processes, and rewards (non-financial as well as financial). Overall, the dynamics of the changes described earlier have major implications for the design of career structures in academe.

4. THE LEADERSHIP CHALLENGE

Summarising the Basic Challenges

The previous sections of this paper have painted a broad scenario of factors that seem to be moving many universities towards a more entrepreneurial mode and have also reviewed organisation and individual development issues impinging on the institution's possible response. The US Department of Education sees this as a major test of leadership (2006). For those in a position to lead this change there are many tensions. Sir David Watson 2008 in a contribution to a 'Consultation' workshop organized by the UK Council for Industry and Higher Education and the Society for Research into Higher Education summed these up in a UK context as: Conservative v Radical; Competitive v Collegiate; Commercial v Charitable; Autonomous v Accountable; Traditional v Innovative; Local v International; and Public v Private. In the same publication, Cubie, Chair of the CUC notes the dichotomies between the entrepreneurial culture and the audit and managerial culture (pp. 14–17). In reality the distinctions are much finer, yet deeper. There are basic conceptual as well as ideological confusions about the nature of the entrepreneurial paradigm itself, which fundamentally affect individual academic attitudes (Ma 2000; Gibb, 2002 and 2005; Maunter 2005).

Despite recent changes, there remains in many organizations a tension between the academic collegiate view of a community of scholars (where disciplines are the 'invisible college') backed up by numerous committee activities and a powerful senate or academic council (in the traditional model of a university) and streamlined executive decision-making teams capable of more rapid response to change (Meyer and Evans 2007). Resources are increasingly scarce and fought over for maintenance rather than change (Clark 2004). The specialised administrative units focused upon outreach activities such as regional development, technology transfer, knowledge exchange, alumni development and careers, noted above, may compete for resources and endeavour to build their own empires, limiting potential for synergy among them and limiting the capacity to give real ownership to academics. Reaching out internationally, and attracting new resource, demands large amounts of executive time. Thomas, for example, found that seeking external resource in the US could take up to 30 % of deans' and heads of departments' time (Thomas 2004).



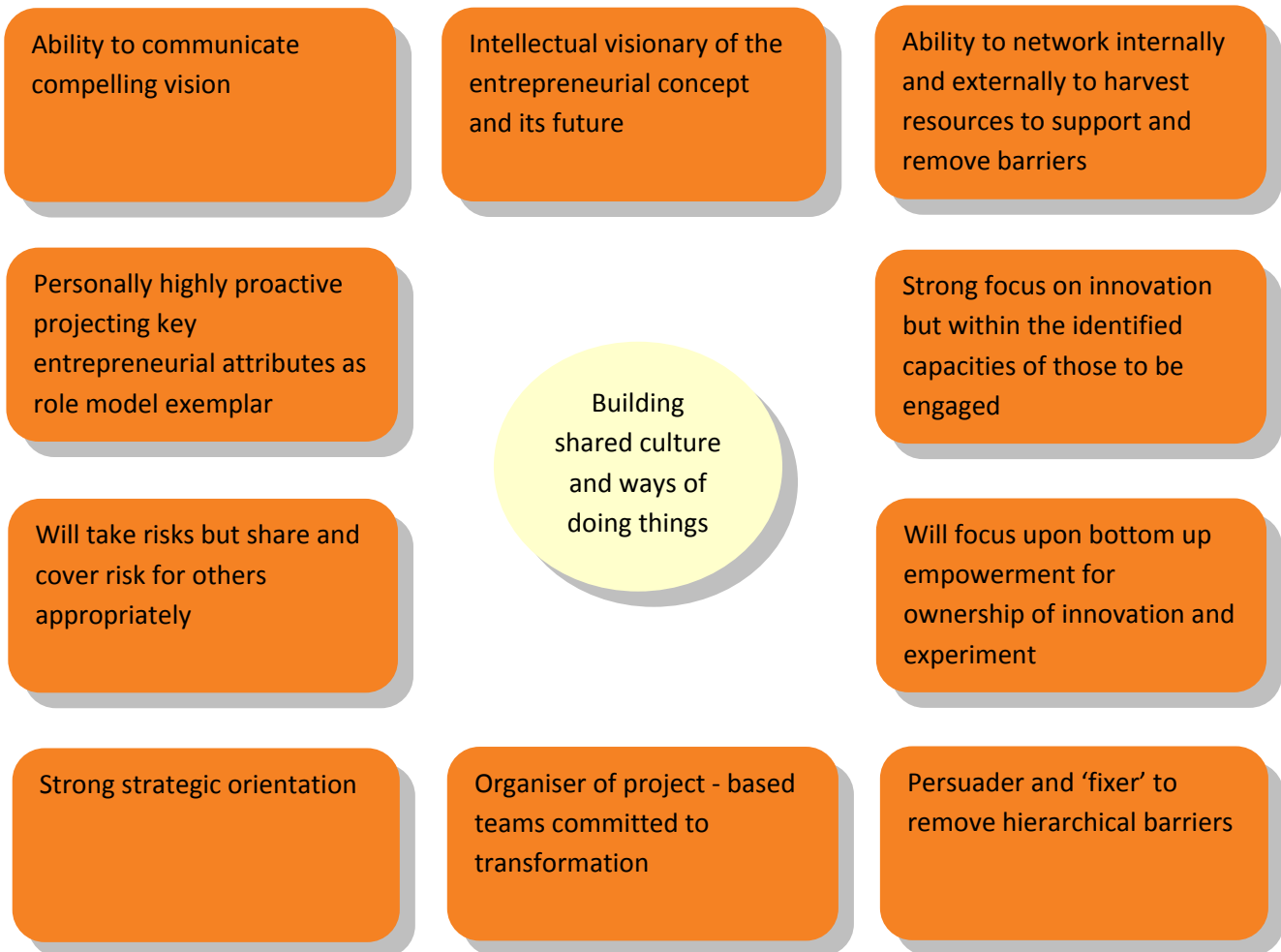
Managing a wider range of stakeholders.

Multi-actors, multi-interfaces and multi-objectives constitute a major leadership challenge (Maak 2007; Bryman 2007). In the UK the restructuring of university councils and boards, and their empowerment has added to this pressure. Despite these changes there is a strong sense of academic independence rooted in departments so that a distinctive leadership characteristic of departmental heads can be seen as their ability to 'defend the department' (Bryman 2007). In this context, the challenge can be seen to go beyond this to encourage innovative leadership throughout the organization (Mcinnis 2001; Greenhalgh 2008). There is, therefore, the issue of challenging certain aspects of the 'new managerialism' particularly those that control rather than stimulate risk and innovation. There is evidence that academics are uncomfortable with over-use of authority, finance led decisions, audit trails involving more paper work, and being cut off from decision making (Deem 2007).

The Entrepreneurial Leadership Concept

A key issue is the degree to which the entrepreneurial leader concept sits with the above challenge. The concept itself must also fit with the entrepreneurial organisation framework set out earlier. From the literature (Schein 1992; Kilgour 1992; Kuratko and Hornsby 1999; Dulewicz 2000; Mcinnis 2001; Vecchio 2003; Gupta et al. 2004) a matching frame can be drawn as in Fig. 6 below, which contextualises key characteristics against the challenges above and the frame in Fig.5. The result has much in common with 'transformational leadership' (Bass 1990; Epitropaki 2001). Intellectual and visionary leadership is needed for two major reasons: firstly to remove ideological and 'concept of a university' barriers associated with the entrepreneurial paradigm; and secondly, to carry this through in the particular context of the nature of the university itself and its existing culture, mission, and strategy. This is not to infer a concentration upon creating 'new' formal strategy statements (Shattock 2000); substituting strategy for leadership has been warned against (Watson 2008). Entrepreneurial change is achieved by action, not by strategy statements.

FIGURE 6 – THE ENTREPRENEURIAL LEADER



In the organisational climate described above, and perhaps in academe in general, leadership is a concept to be earned not formally designated. Managing the balance of relationships among formally engaged stakeholders (the board or council) and other external stakeholders and internal stakeholders is a complex process (Frooman 1999). Super complexity (CIHE and SRHE 2008) is within, as well as without, the organisation. A key challenge will be to create entrepreneurial role models within departments and gradually to build a culture of rewarding innovation in every department, rather than a culture of defence. This will demand capacity to identify potential change agents and build teams around them, encourage risk, and protect them. Shared purpose is thus built by example and reward.

In the UK it has been argued that leadership in the departmental context is low status with relatively few rewards for heads of programmes or chairing departmental committees (Bryman 2007). Identifying potential departmental



change agents will demand an ability to recognise different styles of leadership, and different attitudes associated with potentially enterprising 'clever people' (Goffee and Jones 2007), with competency to build from them in different ways. As part of vision building there will need to be clear articulation of the concept of innovation and its applicability to all disciplines and departments.

The overall mission would be to infuse departments with entrepreneurial culture as embodied in Figure 5. The key instrument for creating transformation will be finding resources to support innovation in departments, particularly so in the present climate. The leader in this respect will need to be the bridge between stakeholders and departments and between bottom up and top down initiatives (Kweik 2008): as such, the persuader and fixer role will be dominant. Some resource may have to be found for new units, some of which may reach across traditional discipline and departmental boundaries. But the key will be in building the entrepreneurial leadership capacity of academics (Blackmore and Blackwell 2006) incrementally from existing practice.

Building Appropriately upon Existing Capacity

In all universities there exists a range of activities that could be broadly described as part of entrepreneurial response to the environments described earlier. Given the diversity of vision, mission, resource, status, and tradition these will vary from one institution to another. A key to the practice of entrepreneurial strategy is an initial appraisal of the existing capacity of the organization upon which to build. Such an appraisal touches upon all of the areas of response to the environment covered above, including an analysis of the way that the existing academic mission of the university, its governance, funding (leverage), strategy, and organization structure fits with, or constrains, an entrepreneurial model and the capacity for change.

Among the possible range of existing activity areas to be explored are:

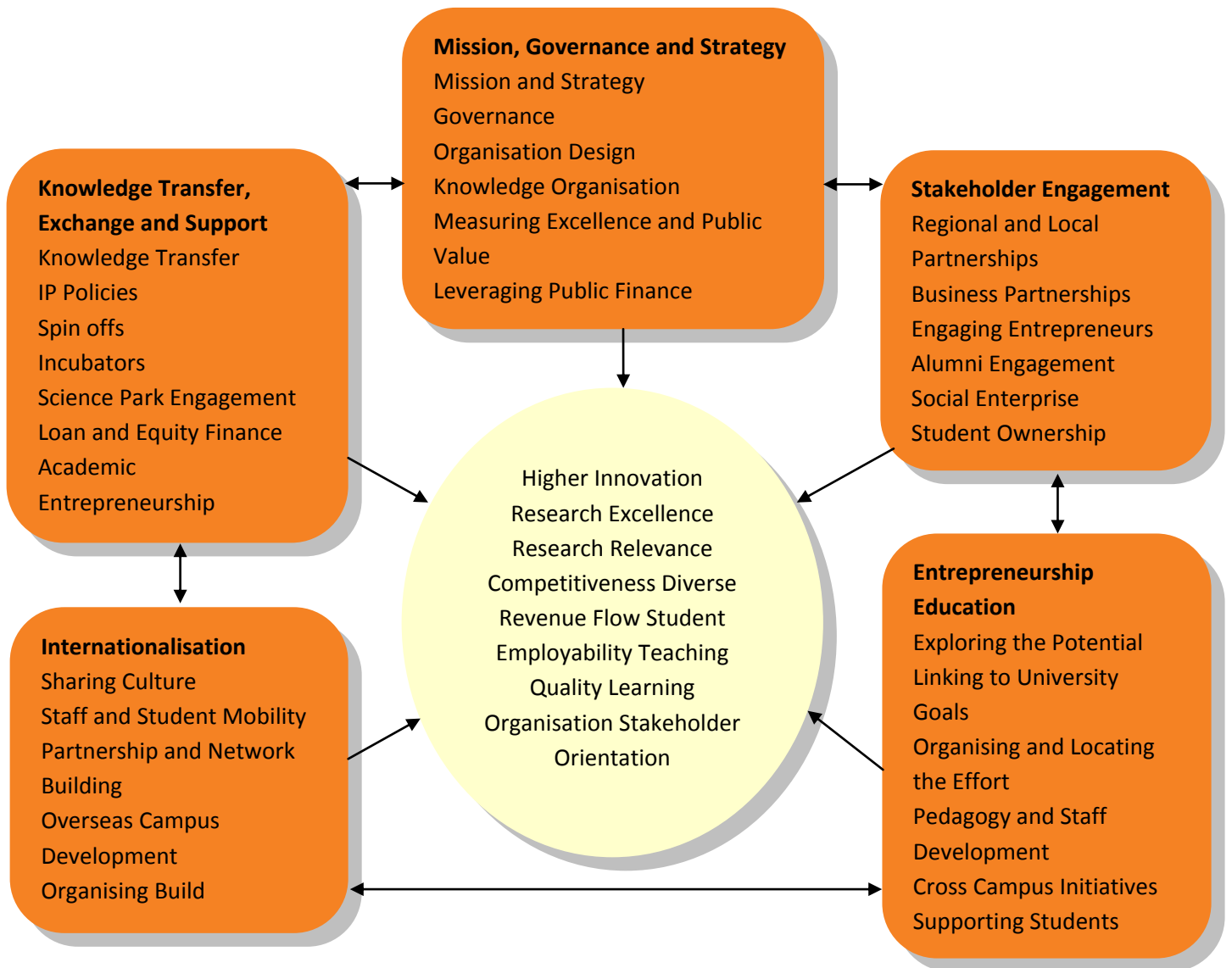
- knowledge and technology transfer policies and activities (Dill 1995; Geuna and Muscio 2008);
- the effectiveness of any physical infrastructure that relates to this, for example, science & technology parks and the associated existence of incubators (Albert and Gaynor 2001) and venture funds;
- new venture programmes; embedded entrepreneurship programme or enterprising pedagogy activity within departments;
- careers department and student society activity in this respect;
- alumni policies and programs;
- entrepreneurial curriculum and pedagogy development within departments;
- the work of interdisciplinary centres;
- regional and local partnerships;
- focus upon social and community issues (Bloom 2006);
- international activities and relationships;
- links and partnerships with entrepreneurs and business in general including applied research and consultancy activity.

The above, and other related issues can be organised within a framework shown in Figure 7. They are explored in detail in another paper (Gibb 2012) designed to facilitate a review in practice of the entrepreneurial capacity and potential of a university. The results of such a review aim to reveal the degree of existing interface and potential



synergy from different activities. For example, student activities may link with departmental project work, with external project work involving local entrepreneurs and may be used for wider promotional activity. Technology transfer activities can link with new venture education and training programs and engage the entrepreneur community as mentors. Career departments can work in partnership with academic departments. Such a review can also be used to identify potential future entrepreneurial champions in the organisation (Mendes et al. 2006) and, as the diagram indicates, demonstrate how finding the means for bringing various enterprising and entrepreneurial activities together can contribute to major university strategic goals.

FIGURE 7 – REVIEWING ENTREPRENEURIAL POTENTIAL: INTEGRATING KEY STRATEGIC AREAS





5. ENTREPRENEURIAL LEADER DEVELOPMENT AND PROGRAMME DESIGN

The distinctive nature of the entrepreneurial leadership challenge arising from the changing paradigm of the university has been described above. Richard Lambert's review of Business-University collaboration in the UK, for example, found that the variety of stakeholders and different demands made upon universities made the leadership role the most complex in the field (Lambert 2003). Any programme designed to meet this challenge has to be targeted upon senior personnel with sufficient visibility and status in the organization to take responsibility alongside senior management, or as part of the management team, for facilitating change (Blackmore and Blackwell 2006). Such a programme, as befits the nature of an entrepreneurial venture, will need to be focused upon action and learning from action, bringing together all key aspects of the leadership challenge as described above.

The Entrepreneurial University Leaders Programme aims to respond to this challenge. It is structured into three modules each with space in between for reflection and action learning. The first module aims to build intellectual capacity to absorb the concept of the entrepreneurial university as it is being configured around the world and as it is being adopted and adapted by a diversity of different higher education institutions in different cultural and international policy contexts. A key component is the development of understanding of how in practice different institutions and their leaders are redesigning their organisations to cope with the different national and international pressures; also to understand how this is being supported or otherwise by policy makers and public and private organizations and their perceptions on the key issues. Overall, a key aim is to provide a framework for participants to explore how a university's activity in this sphere creates public value.

The second module focuses upon exploring concept into practice in key activity areas of interest to participants, drawn from Figure 7, bringing together some of the best of the UK and international experience. It is usually based in an organisation that has recently been designated the NCEE – sponsored THE (Times Higher Education) Entrepreneurial University of the Year Award, allowing participants to explore the institution's approach in depth.

The final module is focused upon individual action plans and strategies for the development of appropriate stakeholder and policy relationships. It provides an opportunity to raise and debate a number of outstanding issues arising from the programme with a range of representatives from business, social enterprises, government, NGOs and student bodies. There is also a strong programme focus throughout on 21st Century challenges and their implications for the future of universities.

Throughout the programme the nature of the leadership challenge as described above is ever present, focusing upon the management of change and related personal, relationship and institutional development. A key theme is the 'how to' of 'leading innovation from the bottom', creating leaders and empowering academics to take risks and building rewards around new ways of doing things. A major component is network and relationship management and building trust-based relationships with actors in the local, regional, national, and international environment.

The Entrepreneurial University Leaders Programme is action learning oriented. Between modules, participants explore relevant issues in their own institutions and work on a change project aimed at developing greater entrepreneurship (in the broadest sense of the word) either for the university as a whole or for their own department. The issues and challenges of implementing the planned changes are discussed in tutor groups and with external experts in the final module of the programme.



6. CONCLUSION

The aim of this paper was to build a strong conceptual base for development of the Entrepreneurial University Leaders Programme. In pursuit of this goal it has sought to demonstrate the relevance of the entrepreneurial concept to the ability of universities to respond proactively and positively to an increasingly uncertain and complex environment. The pressures upon the higher education sector internationally and its responses have been summarised and the related organisation development impacts described, along with the resultant leadership challenges. It is clear that there is considerable potential in the university sector to build a strong strategic response building from the many enterprising and entrepreneurial activities already embedded in many institutions (although they may not always be labelled as such). The scenario painted in the paper is arguably a global one, with many international examples and references. There is no apology for this as all universities are undoubtedly operating in a global environment. But there have also been many references to the situation in the UK in view of the location of the programme.

To achieve the above aims it was first necessary to move the debate on the entrepreneurial university away from a narrow focus upon commercialisation of intellectual property, and the associated fears of 'prostitution' of the 'idea' of a university that results from this (Bok 2003; Kirp 2003). Entrepreneurship has been located as an individual behaviour and organisational development process relevant to citizens and organisations of all types, private, public, and social. It has been argued that the entrepreneurial paradigm is an essential ingredient in pursuit of innovations of all kinds relevant to the development of a university. Secondly, following from the above, the task was to bring together, for reflection, all of the 'entrepreneurial' activities of a university which constitute its response to changes in the dynamic 'task environment'. Finally, the leadership issues involved in linking the concept to the response were explored.

It was noted at the beginning of the paper that the university sector now embraces a wide variety of 'types' of institutions with associated different emphases in missions and strategies. Leadership potential in practice will also be dependent upon a large number of factors, for example: 'power relationships' between stakeholder councils/boards and academic 'senates'; the balance of power between the vice-chancellor or principal, and his/her team; the quality and strength of intermediate professional teams; the nature of the authority and independence of the individual department; the strength of the traditional autonomy of the individual academic; and overall, the 'traditional' culture of the organisation.

Participants in the Leaders Programme, faced with the challenge of transfer of learning into action and learning from action, will therefore need to be highly flexible in adapting their approaches to their own institutional conditions. Their ability to do this will be somewhat dependent upon their own position, responsibilities and authority within the organisation. The entrepreneurial organisation and leadership concepts described above are not therefore recipes for change but frameworks upon which to reflect in guiding change appropriately.

The arguments, concepts and programme design issues noted in this paper are central to the overall objectives of the UK National Centre for Entrepreneurship in Education (NCEE) and Universities UK as the main sponsors of the programme. The NCEE's overall mission is to develop entrepreneurship across all institutions and disciplines in all UK universities (www.ncee.org.uk). It pursues this mission in a number of ways including: the creation of widespread student awareness; the building of understanding and motivation of key stakeholders, internal, and external to the



university; the development of staff capacities via an international entrepreneurship educators programme (IEEP); and the monitoring of practice and progress nationally and internationally to share with all stakeholders. The sustainable impact of these activities is strongly dependent upon associated elements of institutional change within universities, hence the Entrepreneurial University Leaders Programme. Universities UK, representative of universities in the UK, has as key strategic objectives, the monitoring of what is now a dynamic national and global environment for higher education and the support of the sector's pursuit of change and development building upon the best of experience. It is upon exploring this experience that the Entrepreneurial University Leaders Programme is focused.



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