EULP | Entrepreneurial University Leaders Programme

ncee Entrepreneurship in Education

THE ENTREPRENEURIAL UNIVERSITY: FROM CONCEPT TO ACTION

December 2013

ABOUT THE ENTREPRENEURIAL UNIVERSITY LEADERS PROGRAMME

Programme Objectives, Partners and Participants

The Entrepreneurial University Leadership Programme (EULP) is a *pioneering development programme for senior university leaders*. It explores the changing roles of universities and the benefits of enterprise, entrepreneurship and innovation within the university context. It facilitates learning from worldwide experience and focuses upon action for entrepreneurial development within participant universities.

The programme is delivered annually through a partnership between the National Centre for Entrepreneurship in Education (NCEE) and Universities UK (UUK). Three modules take place each year: the first at the Saïd Business School, University of Oxford; the second at the recipient institution of The Times Higher Education Entrepreneurial University of the Year Award and the third at UUK's head office at Woburn House, London. The participants represent a mix of Vice Chancellors, Deputy and Pro-Vice Chancellors and Academic and Professional Heads of university departments. Up to 30 participants are accepted for each programme, and there is an active alumni network for continuing learning and experience exchange. To date, participants from ten countries have taken part.

Programme Design

The *entrepreneurial concept provides the framework for the programme*. It explores the nature of the imperative to respond to increasing uncertainty and complexity. The concept is not used solely in the narrow sense of new venturing and the commercialization of knowledge but importantly, covers key areas of wider entrepreneurial university development. These include: mission, governance and strategy; organisation design and development; inter-departmental co-operation and transdisciplinarity; financial leverage; public value and international, national, regional and local stakeholder engagement; knowledge configuration, exchange, transfer and support; curriculum development, enterprise, entrepreneurship education and employability; alumni relations and engagement; and internationalisation.

The programme works *from concept to action in three modules*. It examines practice in Asia, Europe and the USA. It explores future economic, social, technological and environmental trends and their impact on universities. It discusses the leadership skills and attributes required to make change happen. The modules are interspersed with an action agenda focused upon participant implementation of entrepreneurial change initiatives. These are facilitated by an experienced tutor team of past participants on the programme.

The three modules are:
1. The Entrepreneurial University: Concept & Visioning;
2. The Entrepreneurial University: Applying the Concept and Exploring Good Practice;
3. The Entrepreneurial University: The Way Ahead - Actions for Change.

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INTRODUCTION: ABOUT THIS PUBLICATION

This publication seeks to *demonstrate concept, action and impact* associated with development of the entrepreneurial university. It is written to familiarise the reader with many of the issues raised and discussed in the Entrepreneurial University Leaders Programme and to share the experiences of some of the past participants.

It begins with a *foreword* by the Vice Chancellor of the University of Oxford, outlining some of the innovations that Oxford has introduced in recent years.

Part one explores a number of key concepts and issues underpinning the programme. It does so by addressing *twenty major questions* which have emerged both from the experience of running the programme, reflections upon it, and research. There are no academic references, but a short reading list is included from which many of the arguments are drawn. A further appendix sets out a framework and scorecard for a review of a University's 'entrepreneurial potential.'

The second part consists of *eleven short vignettes* written by senior university personnel who have attended the programme. These do not take the form of reflections on the programme, nor are they designed to be part of an evaluation. They are written to enhance the reader's understanding of how different universities may approach the issue of university enterprise, entrepreneurship and innovation. As such they demonstrate a rich seam of experience and motivation.

PREFACE

December, 2013

Following exceptionally positive feedback from alumni, and the commitment of its faculty and founders, *The Entrepreneurial University Leaders Programme (EULP)* is about to begin its fourth iteration with record demand for participation.

The Entrepreneurial University: from Concept to Action is the latest in a series of papers available on the website of the National Centre for Entrepreneurship in Education (NCEE) tracing the development of the entrepreneurial university concept. These papers give the EULP a strong research underpinning and are used to update its design on a regular basis.

This new publication highlights innovation and change that has taken place within the universities represented by the participants on the programme. NCEE aims to collect further examples of change management on a regular basis. These will provide a valuable record of enterprise, innovation and the pursuit of entrepreneurial opportunity in the university sector.

We would like to thank all involved for their ongoing efforts and dedication to the success of the programme and look forward to our continuing partnership in its development.

Keith Burnley,
Chief Executive Officer,
National Centre for Entrepreneurship in Education (NCEE)

Nicola Dandridge,
Chief Executive,
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FOREWORD: OXFORD'S COMMITMENT TO ACTION

Professor Andrew Hamilton, Vice Chancellor, University of Oxford

It is now almost four years since the Entrepreneurial University Leaders Programme (EULP) began in 2010. On each of the three iterations to date, Oxford has been delighted to host the first module and to welcome senior participants from a wide range of universities to the City of Oxford.

Why is this so? Why should an 800 year-old university, steeped in tradition and renowned for its ancient buildings and gleaming spires place a strong emphasis on entrepreneurship, innovation, change and the impact of our endeavours?

In the University of Oxford's 2011/2012 Annual Review, I wrote that one of the defining characteristics of Oxford is its *inexhaustible curiosity*. We want to know and to explore the unknown. We want to know and explore because with knowledge and exploration come the possibility of change, of making a positive impact and of meeting the many challenges of life in the 21st Century.

Let me share with you just three of the many initiatives that illustrate the innovation and enterprise within the Oxford community:

- **Vision and values in student enterprise:** launched in February 2002, *Oxford Entrepreneurs* has become the largest entrepreneurship society in Europe with over 7,000 members, undergraduates, graduates, MBA students, alumni and external members. Its mission is to encourage and support student entrepreneurship by providing inspiration, education, networking and the chance to learn the skills to become a leading entrepreneur.

  Five years later, in 2007, the *Oxford Hub* was founded by a group of equally visionary students. Their vision was of a network that would connect students working across different causes to share insight and experience, create social change and assist coordination, thereby making all groups more effective.

  Today, the *Oxford Hub* is an energetic network of 500 students involved in creating positive social change. It offers continuous opportunities to get involved, provides weekly training sessions and speaker events, runs conferences throughout the year and places a host of student volunteers in the local community. The immense success that *Oxford Hub* has enjoyed has led to the development of a national network of student hubs. Today, Oxford University is proud to support the activities of the *Oxford Hub*, alongside Barclays, Ashoka, Man Charitable Trust and Deloitte's.

  In addition, every year, I grant the *Vice Chancellor's Civic Awards*. These are given to students who show exceptional achievement and commitment to creating positive social or environmental change. The awards have been presented for volunteering locally, nationally and internationally, raising funds for charity, campaigning and research on social and environmental issues.

- **Innovation with impact:** *Isis Innovation Limited (ISIS)* was established by the University of Oxford in 1988, as its wholly-owned technology transfer company. Its mission is to be the leading international technology transfer organisation, to transfer technology and expertise from the University of Oxford, to deliver value to all clients. ISIS works on projects from all areas of the University's research activities: life sciences, physical sciences, social sciences and humanities.

  Today *ISIS* has three main business activities. *ISIS Technology Transfer* helps Oxford University researchers to commercialise intellectual property arising from their research including: patenting, promotion, licensing and spin-out teams and companies. *Oxford University Consulting* helps Oxford University researchers to identify and manage consulting opportunities and helps clients access experts from Oxford's world-class, interdisciplinary research base. *ISIS Enterprise* provides consulting expertise and advice in technology transfer and innovation management to clients across the public and private sectors around the world.

  ISIS is therefore a key interface between the university, industry, investors and government. In 2012, ISIS generated a return to the University and its researchers of £5.3 million, and created shareholdings for the University in five new spin-out companies worth £3 million.

- **Interdisciplinary research and teaching on global 21st Century issues:** Oxford has a strong commitment to research and teaching on topics related to global 21st century issues and opportunities. Interdisciplinarity and co-operation with faculty across the university and beyond are keys to our success. For instance:

  Oxford Martin School is an interdisciplinary research community of over 300 scholars working to address the global challenges and opportunities of the 21st century. From the governance of geo-engineering and the possibilities of quantum physics, to the future of food and the implications of our ageing population, the Martin School supports over 30 individual research teams across the university to consider some of the biggest questions of our future.

  Tropical Medicine is a collection of research groups focused on infectious diseases and is permanently based in Africa and Asia. Our research in tropical medicine ranges from clinical studies to behavioural sciences with the capacity to build and pursue collaboration with colleagues around the world as a key success requirement.

  Oxford's Blavatnik School of Government, launched in 2010, is pursuing a vision of better government, stronger societies and richer human opportunities across the world. Its research is challenge-focused and practice-based, taking historical, comparative, multidisciplinary and collaborative approaches to develop practical strategies for dealing with challewnges facing policy makers. It welcomed its first class of future leaders in 2012 when it launched its Masters in Public Policy. This exciting programme draws its curriculum from across the University's four divisions: humanities; medical sciences; social sciences; and mathematical, physical and life sciences. It includes a component on how to use medical and scientific advice critically; practical skills in areas such as negotiation, finance and project management; and the use of Oxford philosophers to teach students how to reason through the ethical dilemmas they will face in political leadership.

These are among a myriad of potential examples of Oxford's commitment to *making* an *impact*. I hope that they, together with the eleven examples from previous participants to the Entrepreneurial University Leaders Programme, will provide inspiration to many other universities to create the change required to meet the many challenges we face.

1.   What is the entrepreneurial concept that challenges universities?

Central to the debate on the idea of the 'entrepreneurial university' is the question of how the 'entrepreneurship concept', and the often associated meaning and use of the word 'enterprise', are interpreted. Entrepreneurship is perceived by many academics to be associated solely with business and the commercialisation of university intellectual property (particularly in the science and engineering fields) and is therefore tied in with innovation in the context of the work of technology transfer offices, incubators and science parks. This view is strengthened substantially by government and even international (OECD) perspectives that perceive universities as sources of technological innovation and 'engines of growth'.

The concepts of entrepreneurship and enterprise have, however, in the academic literature, been substantially clarified to embrace application to a wide range of contexts. These concepts are adopted as follows in the EULP.

The Enterprise Concept focuses upon the development of the 'enterprising person and entrepreneurial mindset'. The former constitutes a set of personal skills, attributes, behavioural and motivational capacities (associated with those of the entrepreneur) but which can be used in any context (social, work, leisure etc). Prominent among these are; intuitive decision making, capacity to make things happen autonomously, networking, initiative taking, opportunity identification, creative problem solving, strategic thinking, and self efficacy. The 'Mindset' concept focuses not just upon the notion of 'being your own boss' in a business context but upon the ability of an individual to cope with an unpredictable external environment and the associated entrepreneurial ways of doing, thinking, feeling, communicating, organising and learning.

The Entrepreneurship Concept focuses upon the application of these personal enterprising skills, attributes and mindsets to the context of setting up a new venture or initiative of any kind, developing/growing an existing venture or initiative and designing an entrepreneurial organisation (one in which the capacity for effective use of enterprising skills will be enhanced). The context is therefore not confined to business but is equally applicable to social enterprise, education, health, NGOs and mainstream public organisations (e.g. universities and governments).

2.   What is the link between enterprise, entrepreneurship and innovation in universities?

The Innovation Concept in the university context broadens beyond technology with the above definitions. In general innovation is defined as creating, finding and exploiting opportunities for new ways of doing things resulting in better products and services, systems and ways of leading/managing people and organisations. Innovation in an entrepreneurial university development context may therefore be viewed in terms of: new organisation and leadership development initiatives; experiments in pedagogy, knowledge organisation and programme development; internal and external stakeholder engagement; trans-disciplinary activity; and new research explorations, methods and applications to practice.

The successful pursuit of innovation is a function of individual enterprising endeavour and entrepreneurial organisation capacity. Innovation is impossible without these. They are both necessary conditions, sufficient only when combined with an organisation culture and broader environment that is conducive to, and supportive of, such activity.

3.   Is there really a need for universities to become more entrepreneurial?

It is the levels of uncertainty and complexity in any environment and the associated threats and opportunities that dictate the need for entrepreneurial response. It is also the case that entrepreneurial persons within organisations may themselves create uncertainty and complexity by their actions which may at times be

deviant (challenging accepted norms). It will be argued below that organisations can be designed to crush such enterprise or encourage and channel it. A major goal of the EULP is to explore the dynamics of the environment of universities, the relevance of the entrepreneurial concept to the design of response and the implications for strategies, organisation and leadership.

Universities are facing higher levels of uncertainty and complexity in their environment as well as greater entrepreneurial pressures from within. Throughout the world there have been, for many years, mounting challenges to the concept of the university as a 'protected' place for individual research and teaching in pursuit of truth. In many countries the 'protection' has come mainly through the public purse. The 'massification' of Higher Education whereby a very large minority of the young population is given access, together with an associated growth in the number of higher education institutions, has made the costs of this model unsustainable. Universities have had increasingly to look elsewhere for resource for research and extensions of their scholarship. Pressures in this respect have increased with the global recession.

4.   What are the major challenges to traditional university models?

Over the past two decades UK governments have become ever more directive in their funding of the higher education sector with more *pressure for relevance in research and teaching* tied into contribution to economic growth, social mobility, technical innovation and employability. This pressure operates against a backcloth of increasing global competition as the higher education sector expands rapidly in many developing countries. The sources of knowledge have also been opened up considerably via the global IT revolution and universities can no longer claim to the unique knowledge environment that they were once were. Some of the detail of these pressures on universities and responses in the UK context is given below.

5.   In general, how are these challenges shaping the sector?

The above pressures in the environment provide opportunities as well as threats leading to: pursuit of international partnerships in research and teaching; the building of wider networks of relationships: active partnering to leverage resources; greater understanding of the wider contexts of knowledge sourcing and application; and active pursuit of relevance. *The pressure for accountability in terms of public value* has also grown considerably. Measures by which university excellence is now judged include: graduate employability, employment and salary; impact of research; contribution to national, regional and local economic and social development; teaching quality; and social mobility.

6.   Is the essential 'idea' and autonomy of a university under threat?

There has been for some time in the UK *a body of academics opposed to the direction in which the higher education sector is moving*. The main thrust of their argument is that the model of the university as a 'disinterested' organisation concerned with pursuit of truth and dependent upon individual efforts in this respect, regardless of the utility of the 'discovery' or relevance to the immediate needs of society, has been undermined. The main culprit in this respect is seen as government with its pressure for relevance and impact, its influence upon the direction of research funding, its view of universities as 'engines of growth' and more recently in England, via its creation of a 'market' by the transfer of funds for teaching directly into the hands of students (under a student loan scheme). It is argued that the combination of these pressures, with their focus upon utility, threatens the very idea of a university as derived from the traditional Bologna and Humboldt models. The development of numerous metrics to measure university performance is regarded as a substantial intrusion upon a model of academic freedom where accountability was through peer review.

An alternative view is that *universities were not always focused upon discovery via the linking of research and teaching*. The influential 19th century Newman model of the university was primarily that of a

teaching institution. There is also a heritage of the original 'old' universities focusing upon the 'professions', medicine, law and divinity, and therefore 'useful' knowledge (albeit underpinned by philosophy). In the UK the growth in emphasis upon social and economic utility, alongside local and regional engagement, to some degree reflects the culture and history of the post-92 wave of new universities. They are more strongly focused upon creating useful knowledge and are more likely to be reflective of government views and those of wider social and economic pressure groups. There is also a strong competency, and in many cases vocational, component in their approaches to learning. The Russell Group of UK universities arguably are more responsive to traditional academic power structures within and without the university and argue for the equating of excellence in research with excellence in teaching. Nevertheless they are also responding to the pressures noted above and explored in more detail below.

7.   What are the external pressures shaping the entrepreneurial future of universities?

Within the broad spectrum of the environment described above, there are many specific uncertainties and complexities creating both challenges and opportunities for universities. Paramount among these is *the need to maintain and increase student numbers*. Notably, there are falls in part-time and postgraduate student applications, particularly from overseas.

The fall-out from this and the changes in the English funding regime are at the root of the challenge to harvest new resources and leverage and/or replace public monies. The ever broadening range of 'official' accountability metrics noted earlier feeds a climate of competition, but also stimulates pursuit of cooperation and partnership. Adding to pressures from this scenario is a wide range of further concerns some of which are more immediate than others. On the immediate horizon are issues such as the move to Open Access publication and the additional cost burden that this may place on universities, the challenge of developing entrepreneurship education across the university following the 2012 national Quality Assurance Agency (QAA) guidelines and the recommendations of the UK Government Wilson report in this respect with its specific focus upon business engagement, subsequently reinforced by recommendations of reports by Lord Heseltine and Young and the Witty consultations with universities (see bibliography).

More fundamental is the task of *facing up to the detail of the growth of overseas competition* particularly from South East Asia, India and China, the associated demand for a more global curriculum and the threat to what has been labelled the 'colonial' model of a university with its emphasis upon knowledge for its own sake. An additional significant development is *the emergence of Massive Open Online Courses* (MOOCs) offering free tuition to tens of thousands of students world-wide. This initiative has been led by US elite universities but is now also actively engaging UK universities and the private sector although issues remain as to the availability of accreditation and credit accumulation towards degree status. When added to the growth and use of social media these initiatives pose distinctive challenges to the pedagogy of teaching and learning and the organisation of knowledge. The opening up of opportunitiesfor the private sector to increase its visibility in higher education provides potential for collaboration as well as competition. Private sector engagement is not limited to teaching but is increasingly evident in the subcontracting out by universities of a wide range of services.

Overall, there are also *growing pressures to broaden student experiential learning* particularly with the small and medium enterprise sector of the economy: also to engage with social entrepreneurship by partnering with a wider range of local, regional, national and international stakeholders.

8.   How are universities responding to these pressures?

The main focus of response is upon the attraction of students with a wide range of incentives and overtures including scholarships for those from less privileged background and innovative relationship-building activities with schools, teachers, parents, local authorities and potential future students themselves. Beyond the conventional taster days, school staff liaison days, fairs and student briefings the newer initiatives include: development of satellite subject activities in local schools; the designation of university staff as schools ambassadors; summer schools for potential students; direct support for school curriculum development and linked 'passport' certification; school sponsorship and wide use of dialogue through the social media.

Addressing the new 'accountability' metrics provides also a key focus for response. 'Employability' is being embedded contextually in the curriculum in many departments. Greater responsibility for employment outcomes is also being delegated to individual departments. Wider opportunities for student experiential learning experiences are being explored alongside entrepreneurial and enterprise skills development. Student voluntarism is being more widely and formally supported often with a social enterprise orientation. There is greater emphasis upon student ownership of learning and engagement in assessment processes; and efforts are also being made to engage employers and other stakeholders in the processes of curriculum design and delivery. Such responses are not as yet uniformly widespread. Linked with the above is a growing emphasis upon local/regional partnership in economic and social development with a number of universities building strong community development initiatives into their formal strategies.

In the field of on-line learning, a growing number of UK universities are providing graduate and post-graduate programmes substantially through this medium, while groups of UK universities are taking up the challenge of the MOOCs in developing their own 'free' offers. Somewhat forgotten amidst the present debate is that individual UK universities have been offering undergraduate and postgraduate programmes online for many years building on the UK Open University's pioneering efforts in this respect.

The IT and social media revolution in general has highlighted the potential for international partnerships in research and teaching. Many universities heavily depend upon income from foreign students: to build this outreach there has been a substantial growth in partnerships with overseas private and public institutions alongside initiatives in the development of overseas campuses usually in partnership with local universities.

9.   Are these responses leading to an even more differentiated higher education sector?

In the UK this is clearly the case. While the sector as a whole has for many years been highly differentiated in its commitment to wide stakeholder engagement, undoubtedly more higher education institutions are buying in to the concept of the 'engaged' university each starting from areas of existing strength. The former polytechnics (post '92 universities), as noted above, have a substantial history of wider community engagement. The older self labelled 'research based' universities have focused upon their value in science and technology development and related network building. The 'impact' agenda introduced into the official UK Research Assessment process is also influencing the notion of engagement in all universities. In the field of teaching and learning there are fewer distinctive differentiations. *While there is much rhetoric, the link between excellence in teaching and excellence in research is not always clear.*

Given the official emphasis upon accountability and engagement of universities, it is unsurprising that it is the former polytechnic and newer universities that are leading the way in rebranding themselves in a distinctive way to fit the new metrics, for example as universities for employability and/or employment, universities for useful knowledge, universities for enterprise, universities for social enterprise and the 'business engaged' university.

10.   What will be the future private sector role?

The private sector is actively responding to many of the above challenges and is engaging substantially in the online learning process, particularly in the US while expanding more incrementally in the UK. There is a growing number of established UK university partnerships with private companies. Private sector activity has particular resonance in the professional and vocational fields: this opens up opportunities for public universities to partner in recruiting from private entities into their postgraduate programmes. Opportunities for established universities to link up with vocational colleges are also being taken up with support from official programmes.

11.   Is differentiation leading to change in the ways that knowledge is organised and delivered?

There is a substantial ongoing debate as to how universities are managing the burgeoning international flow of information and knowledge or 'Big Data' as it is being labelled. The debate is not only stimulated by the

global impact of the internet and social media but, more fundamentally, by recognition that the university is no longer the sole or, as some would argue, the dominant domain for discovery and learning. Much of the discussion centres on the concept of a move from a Mode 1 form of learning, where the university is configured as an *independent space for discovery and learning*, to a Mode 2 typology of an organisation *with high levels of engagement in learning and knowledge exchange with a wide range of stakeholders.*

In the Mode 2 model, knowledge development and production becomes more contextualised to different situations, more problem/issue centred and more reflective of use in practice. This, it is argued, will challenge existing forms of knowledge organisation, will demand more trans-disciplinary approaches and may lead to the creation of new interdisciplinary concepts and paradigms. It will lead to a strengthening of the university's capacity for knowledge exchange; will stimulate closer partnerships with external stakeholders, more learning from practice and the discovery of new ways of distributing knowledge. In this conceptualisation, the university moves from being a niche organisation to a more open and comprehensive learning organisation. In extremis this might lead to the abandonment of universities organised around conventional disciplinary departments with a focus more upon the creation of strategic areas of learning and discovery, linked to distinctive areas of present and future needs of society, cultural, economic, environmental, social and technological.

In this debate the concept of useful knowledge is not confined to a focus upon 'know how' in the technical sense but refers as much, if not more, to the need to link the development of student knowledge to values and to broad areas of society need for development and the enrichment of culture. This marries up withthe concept of 'wisdom' as being concerned with the individual's capacity to embrace a combination of experience/knowledge and deeper understanding of a life world of uncertainty and complexity. *Overall, while the academic debate is intensive, the practice, in the UK is limited.*

12.   Does the debate about new sources of learning mean acceptance of the 'triple helix' model?

The triple helix model of a university, presented in numerous conferences around the world, and accompanied by equally numerous papers, is *focused upon the notion of partnership between the university, business and government*. The original tripartite model has been broadened to accommodate the culture of a society and the distinctive environment in which universities operate. The model, which has had a strong impact upon practice, is in line with the Mode 2 concept described above. Its focus has been heavily centred on the role of universities in support of technological innovation. It will be argued below that the challenge to universities of entrepreneurial engagement with society can be better characterised in a different way.

13.   In the light of all of these changes how is the public value of a university to be judged?

The pressure for accountability for public value from universities comes from a variety of sources. As noted above, the official focus upon 'performance' and the student- led demand conditions in England lead the way in this respect. *The emphasis is substantially upon 'economic value'*, determined on a cost benefit (value for money) basis. It is this approach that the UK Committee for Defence of the Universities is so much opposed to. The public value concept can, however, be approached differently.

As espoused by Mark Moore of Harvard University, and subsequently widely explored by governments, *the 'public value' concept focuses substantially upon the processes and organisation of the creation of value*. In this model excellence is pursued and judged by the achievement of 'legitimacy' with a range of key stakeholders. The institution's value is derived from the stakeholder perspectives which are then built into operational capacity and reflected back in pursuit of outcomes. This fits into the concept of a broader stakeholder model of a university's pursuit of value, wider yet more precise, than that of the triple helix model and its derivatives.

14.   How can the entrepreneurial potential of a university be explored and developed?

Even a superficial review of most university activity will provide evidence of a substantial degree of personal enterprise and pockets of entrepreneurial organisational behaviour as defined above. These may not be branded as 'enterprising' or 'entrepreneurial' by the university as long as these labels remain associated with

business and commercialisation of knowledge processes. The entrepreneurial potential of a university is therefore best explored by an informal process without formal labelling. Such a review can be organised through examination of activity in five key areas of:

• research, knowledge transfer and exchange;
• stakeholder relationship and partnership development at the local, regional and national level;
• internationalisation processes;
• enterprise and entrepreneurship pedagogy and knowledge organisation across the university; and
• governance, strategy, organisation design and leadership at all levels.

This process will almost certainly uncover areas of interdependence and future development potential. For example, exploration of enterprise and entrepreneurial education activity will reveal the potential for linking it with: existing knowledge exchange programmes; incubator and technology park activity; international alumni engagement; local and regional social enterprise partnership activity; joint ventures with business associations and local authorities in enterprise development; formal teaching and learning strategies; staff development programmes; and student led initiatives. *A university review, even starting from a single area as above, may provide a platform for wider exploration of the university's entrepreneurial potential.*

15. How can a review of entrepreneurial potential contribute to achievement of key university objectives?

The overall objective of a review process is to identify how enterprise and entrepreneurship can add value in meeting a university's key strategic objectives, for example:

• enhancing the student experience, employability and employment;
• achieving excellence in teaching and learning;
• innovation in research approaches, achieving impact and finding resource;
• broadening revenue flows;
• improving knowledge exchange processes;
• contributing to local and regional economic and social development;
• creating an international presence; and
• above all, enhancing the reputation, competitiveness and distinctiveness of the university

16. What does this mean for the overall balance of university/stakeholder relationships?

Universities have always needed to be responsive to the interests of a variety of external stakeholders. But traditionally in the UK, the dominant influential stakeholders have been those who directly influence the flow of resources for teaching and research namely the government, the official funding agencies, other universities who provide peer review of excellence and research funding bodies, public and private.
The changes in funding arrangements described above, together with the broad changes in the 'task environment' of the university also described earlier, have created an imperative for wider stakeholder engagement and partnership. All of those who, for example, influence student choice, have become more important in stakeholder relationship development.

The creation of active partnerships with other universities, national and international, with local government and development agencies, with NGOs in the field of social enterprise and economic and social development has also become much more important. Internally, working with student representative bodies and entrepreneurship societies and active involvement with alumni groups have become imperatives. Partnerships with businesses and their associations have become of particular significance. *The university is therefore emerging as a broader stakeholder relationship organisation witha natural imperative to adopt a Mode 2 focus of learning.*

17.   What are the implications for individual university departments?

Universities are pluralistic organisations embodying not only a variety of scholarly disciplines but also different values, cultures and dominant modes of learning and approaches to research. Importantly, there are also distinctive differences in the nature and thrust of relationships with the stakeholder environment. The humanities are sometimes judged to be weak in stakeholder relationship development although in practice they are often strong. Within each disciplinary domain, however, the relevant key stakeholders will be different. A music department will have very different external relationship networks than a department of divinity or arts, although there will be overlap and therefore scope for cross disciplinary boundary activity. *The balance of university stakeholder relationship and partnership potential can therefore only be fully explored on a bottom up basis.*

18.   Overall, what does the entrepreneurial concept mean for the design of the university?

Organisations of all kinds need to be designed around the nature and dynamics of the task environment they face (defined as the relevant stakeholders and the demands they place upon the organisation). The multiple uncertainties and complexities noted above challenge the university to develop its capacity to respond flexibly to the demands of a widening stakeholder environment. The Mode 2 knowledge concept also demands capacity to respond to learning and discovery challenges in new, innovative, ways. It was noted above that the capacity to innovate is a function of individual enterprising behaviour and entrepreneurial organisation design.

In general, organisations can be designed to enhance or constrain personal enterprising behaviour. Enterprising behaviour demands freedom for individuals to take ownership of initiatives, see such initiatives through, enjoy and take personal ownership of external and internal relationships, and make mistakes and learn from them by 'doing'.

Essentially entrepreneurial organisations are designed to encourage and support bottom-up initiative and reward and empower such initiative. They facilitate informal relationships and network building as a necessary condition for the promotion of innovation via the building of individual and collective social capital. Such organisations are held together more by shared values and culture than by formal control systems and more by informal flexible strategic thinking and awareness than by highly formal planning systems.

19.   What are the implications for leadership?

The key leadership challenges relate to championing of the organisation design model described in the response to question 18 above, and the creation of shared values and rationale for ways of doing things in pursuit of this model across the university.

The entrepreneurial leader is a role model for enterprising behaviour, is an opportunity seeker, paves the way for others to find and realise opportunities, sets the climate for behaviour through example, coaches the shared vision, empowers and supports bottom-up innovation and risk taking and shares the responsibility for any associated failure. She/he is an enterprising person, valuing intuitive thinking and supportive of flexible strategic orientation (strategy and action intertwined) tailored to operating within a climate of uncertainty and complexity. Importantly, she/he is able to communicate strongly the university vision, internally and externally, through the building of personal trust-based relationships combined with an intellectual capacity to confront many of the issues referred to above. The style of this transformational leadership model will need to be adjusted to the existing and traditional cultures and values of the institution.

20.   In summary, what might be the shape of the future entrepreneurial university?

If such an entity was to be designed from scratch it might classically described as a dynamic entrepreneurial learning organisation in a Mode 2 mould. As such it would be geared to engage and learn from all key stakeholders internally and externally. It would judge its excellence through the eyes of these stakeholders and be unafraid to give them a role, through partnership, in the design and developmentof its activity. It would therefore have a very strong community orientation. It would combine excellence in research with a constant

eye upon key areas of future needs of society, domestic and international and would build flexible scenarios accordingly. It would constantly explore and exploit the opportunities offered by global IT networks and social media. Its curriculum would be developed with a global audience in mind and would be shaped by active learning as to how other cultures see things.

Internally, it would be organised to empower individuals 'bottom up' and would seek to reward innovations from this source, charging each department head to be accountable for these and share risk. Its overarching reward and promotion systems would be transparently linked to ability to reward innovation in the broadest sense set out in this paper with clear promotional tracks. It would recruit enterprising and entrepreneurial staff and encourage them to share a common culture of trust and learning by and through action. It would encourage them to build strong personal trust-based external relationship networks and therefore social capital which would enhance the capacity of the university to truly engage. As such it would be constantly in tune with the 'community of practice' and each department would need to be aligned in this way.

The entrepreneurial university would build into its staffing a body of externals as professors/fellows of practice and be unafraid to engage even the smallest economic and social entrepreneurs. In the field of teaching and learning, entrepreneurial pedagogies would be embedded in each department across the university, students and externals would be actively engaged in curriculum design and assessment processes. There would be multiple opportunities to learn by doing and reflect conceptually. Student entrepreneurial societies would be strongly supported as would social enterprise hubs and given encouragement to lead entrepreneurial venturing of all kinds. Overall, in research and teaching the entrepreneurial university will encourage the crossing of disciplinary boundaries perhaps leading to new trans-disciplinary departments.

Such an entrepreneurial organisation would not be alien to much of the traditional culture and values of a university with the emphasis upon autonomy and freedom for action. The only constraint is that of management of the interdependence upon a widening range of stakeholders. The opportunity and challenge is to manage this in such a way that maximises autonomy, freedom of thought and the empowerment of individuals.

The reality of the university world at present is somewhat removed from the above scenario. But it is clear that individual examples of many of the characteristics described above can be found. Individual universities and university groupings are differentiating themselves in different ways with selective emphasis upon research values, research relevance and development from research, innovations in teaching and learning and wider outcomes, some, but not all, tied in with official policy. Many of these innovations are in deliberate pursuit of enterprise and entrepreneurial activity as described above. It will become clear from the vignettes in Part II that the concepts of enterprise and entrepreneurship can be used to enhance and contribute to the distinctive philosophies and practice of very different universities.

> **"Such an entrepreneurial organisation would not be alien to much of the traditional culture and values of a university with the emphasis upon autonomy and freedom for action. The only constraint is that of management of the interdependence upon a widening range of stakeholders. The opportunity and challenge is to manage this in such a way that maximises autonomy, freedom of thought and the empowerment of individuals."**
>
> Allan Gibb, Professor Emeritus, University of Durham

PART II: THE ENTREPRENEURIAL UNIVERSITY IN ACTION - 11 EXAMPLES

Part II focuses on *eleven short vignettes written by senior university personnel who have attended the Entrepreneurial University Leaders Programme (EULP)*. These short case studies do not necessarily relate directly to the experience of the programme. Rather they give a personal perspective of the range of challenges faced by universities in becoming more entrepreneurial and of some actions taken to address them. The case studies are grouped and presented in three themes: *Entrepreneurial Strategy, Entrepreneurial Partnerships and Entrepreneurial Curriculum & Pedagogy.*

A major goal of the EULP is to explore the dynamics of the environment of universities, the relevance of the entrepreneurial concept, the design of response and the implications for strategies, organisation and leadership. These eleven examples have been written to enhance the reader's understanding and draw attention to the challenges of leadership involved in enabling universities to become more entrepreneurial. As such, they demonstrate a rich seam of experience and illustrate how different universities may approach the issue of enterprise and entrepreneurial development.

A. ENTREPRENEURIAL STRATEGY

Four case studies explore questions of strategy relating to questions in Part I such as how universities are responding to the local and international environment, how individual universities and university groupings are differentiating themselves and ways in which universities are establishing the base of enterprising and entrepreneurial behaviour that already exists and using that as the foundation for future development.

In "*A Strategy to Foster Enterprise,*" Professor Lesley Dobree (Anglia Ruskin University) considers the challenge of drawing together many and varied entrepreneurial activities taking place across a university and of getting the different parts of the organisation talking, sharing and working together.

In "*Towards an International Strategy,*" John Grattan (Aberystwyth University) presents a review of the university's international strategy to date with recommendations for actions going forward.

In "*A Strategy for Developing an Entrepreneurial University*", Stephen Hagen and Paul Coyle (formerly both members of the Executive Committee of the former University of Wales, Newport), describe the work undertaken to develop and position a university as an Entrepreneurial University, primarily through the development of an ambitious and radical strategy, and also through support for graduate start-up business and curriculum development.

In "*A Strategy for Business Engagement – Developing an Entrepreneurial Culture*," Laura Woods (Teesside University) provides an example of how a university can take an entrepreneurial approach to developing enterprising staff with the capability to deliver innovation in their teaching, research and business collaborations.

B. ENTREPRENEURIAL PARTNERSHIPS

Four case studies address some of the questions in Part I related to partnerships between universities and external stakeholders, the creation of public value, the contributions to economic and social development and the ways in which partnership can support excellence in research.

In "*Creating Innovation in Partnership with Local Communities*" Chris Baker (University of Brighton), describes the challenge of innovation that is driven by partnership to meet the needs of very different local communities. The challenge for the university is to create an entrepreneurial organisation that can marry the drive of enterprising individuals, both staff and students, to the economic and social needs of these communities.

"*Achieving Impact through Partnership*" by Professor Pete Downes (University of Dundee) focuses upon the philosophy of a university built upon academic excellence and its efforts to embed, accelerate and reward impact through interdisciplinarity and partnership, thereby enabling students to emerge with a better understanding of how they can use the skills they have acquired at university in the outside world.

In "*The Role of Partnership in a Regional Innovation Hub*," Professor Paul Gough (University of the West of England) explains how relevant examples of enterprise and entrepreneurial thinking can inform a university's activities in a Regional Innovation Hub.

"*Partnering for Entrepreneurial Activity*" by Professor Anthony Whetton (University of Manchester) describes a developing partnership between the National Health Service and a university, demonstrating how common interests are served by the partnership, and the ways in which each partner can leverage the other's resources and increase investment in shared strategic objectives.

C.   ENTREPRENEURIAL CURRICULUM AND PEDAGOGY

Three vignettes look at key questions about curriculum and pedagogy from part one above, including the challenge of developing entrepreneurship education across a university and of encouraging and supporting bottom-up initiatives.

In "*A Risk Based Approach to Curriculum Design,*" Ian Dunn (Coventry University) considers the creation of a risk-based organisational culture designed to support bottom-up initiatives for changes in curriculum design and the development of student enterprise and entrepreneurship.

"*Embedding Enterprise in the Curriculum*" by Professor Mike Thomas (University of Chester) describes the challenges of determining a definition of enterprise that could be commonly accepted throughout a university and of embedding enterprise in a university's teaching & learning strategy.

In "*Collaboration between Students, Academics and Industry*" Mikkel Trym (Copenhagen Innovation and Entrepreneurship Lab) describes how hundreds of researchers and students have become involved in student-driven entrepreneurship initiatives and describes the challenges of creating a culture amongst staff that will support a student entrepreneurship eco-system.

THEME A: ENTREPRENEURIAL STRATEGY

1.   A Strategy to Foster Enterprise

Professor Lesley Dobree, Deputy Vice Chancellor, Anglia Ruskin University

Anglia Ruskin University	Total HE students: 21,605 including:
	UK Postgraduates: 2,220
Cambridge Chelmsford Peterborough	UK Undergraduates: 16,075
	International: 3,305

This vignette considers the challenge of drawing together many and varied entrepreneurial activities taking place across a university and of getting the different parts of the organisation talking, sharing and working together.

1.1   The entrepreneurial potential

With nearly 32,000 students, over 10,000 of whom are studying in a range of collaborative and employer partnerships, Anglia Ruskin University continues to grow and is one of the largest universities in the East of England. The two major campuses are situated in Cambridge and Chelmsford. We also have joint venture partnerships with Peterborough Regional College and the College of West Anglia to form University Centres in Peterborough and King's Lynn. Along with our own smaller campus in Peterborough, we therefore have a strong presence in three important cities in the East of England.

We have a large number of collaborative partnerships both in the UK and internationally with 9,000 students studying at these various locations. Our distance learning portfolio is growing: the Degrees at Work project, including employers such as Harrods, Barclays, Timberland, the RAF and Willmott Dixon, among others, achieves favourable publicity.

Our Cambridge Campus (the home of the Cambridge School of Art opened by John Ruskin 1819-1900) has been engaging with the business community for many years offering 'enterprise for everyone, not enterprise for the elite!'

Our Chelmsford Campus has a history of excellence in technical and vocational education. Our innovative and expanding Postgraduate Medical Institute (PMI) at the heart of the Campus, houses a state-of-the-art Biomedical Engineering Laboratory, an acute care Simulation Unit complete with control room and a 400 and a 200 seated lecture theatre linking live to hospital operating theatres around the world. We have also launched the new MedTech Campus in Essex, a partnership with local authorities, to promote innovation in medical technology and to create 12,500 jobs in the Essex area. We are also establishing the Chelmsford Medical Business Incubation Centre, to open in 2014, to attract student startups and businesses in the early stages of their development.

1.2   The entrepreneurial challenge

The Anglia Ruskin Corporate Plan highlights the focus upon entrepreneurship. The strategy is to develop this agenda further as the higher education landscape continues to change and to gain wider recognition locally, nationally and globally as an entrepreneurial university. Some seriously challenging targets have been set, focused upon entrepreneurial activities, as part of a diversification of the university's income and employer engagement strategy. Whilst we at Anglia Ruskin remain committed to achieving excellence

in teaching, learning and research and supporting the achievement of its diverse student population, we also need to foster the enterprise concept in all staff and students.

One of the main challenges is *drawing together and sharing the many and varied activities taking place*. This requires getting the different parts of the organisation talking, sharing and working together to exploit synergistic potential. There is no doubt, that the whole is greater and likely to exert greater impact, than the sum of the various parts or pockets of activity.

1.3   Responding to the challenge

The holistic approach needed involves coordination of the many varied and successful entrepreneurial activities across the institution. With the aim of boosting confidence and reputation, staff and students are being encouraged to become more involved in a diverse range of enterprising activities in pursuit of innovation. As an outcome of the learning on the EULP, I undertook a review of existing provision relating to enterprise and entrepreneurship; this included auditing knowledge transfer, exchange and support, external stakeholder engagement, internationalization and entrepreneurship education. This has helped to create a narrative to share more widely.

Additionally, a cross-university group of those staff involved in those activities, including representation from the students union, was brought together to share knowledge and activities and exploit opportunities. The group is committed, amongst other things, to making a submission for the UK Times Higher Education Entrepreneurial University of the Year Award in 2014.

1.4   Problems and opportunities

Some of the opportunities arising from being a large, diverse, multi-sited growing organisation also create a challenge to developing a holistic approach. Faculties and support services are highly engaged with their respective activities at a local level and are sometimes too occupied, and occasionally reluctant, to share information. The University Lord Ashcroft International Business School is at the forefront of many of the enterprising initiatives but is not necessarily best able to disseminate the learning from these initiatives across the wider university.

My role of Deputy Vice Chancellor enables a "helicopter view" of the full range of our activities and allows synergistic links to be made'.

1.5   Transformational impact

Although there is still much work to do, the creation of the narrative and introduction of a cross-University group, focused on developing enterprise and entrepreneurship has encouraged a diverse range of staff to work more closely together. The intention is to apply the enterprising skills and entrepreneurial mindset that already exists to grow and develop existing activities, set up new ventures and enhance Anglia Ruskin's ability and reputation as an entrepreneurial institution.

> **"My role of Deputy Vice Chancellor enables a "helicopter view" of the full range of our activities and allows synergistic links to be made."**
> Lesley Dobree, Deputy Vice Chancellor, Anglia Ruskin University

2. Towards an International Strategy

Professor John Grattan, Pro Vice Chancellor, Aberystwyth University

No HE students: 11,705
including:
UK Postgraduates: 1,225
UK Undergraduates: 8,630
International: 1,850

This vignette presents a review of Aberystwyth University's international strategy to date with recommendations for actions going forward.

2.1   About Aberystwyth University

Aberystwyth University was founded in 1872. Today, it is known for its excellence in research, teaching and the quality of the student experience. It is a traditional; campus based university that offers international partners a friendly welcome, great student satisfaction and a high-quality university environment. It delivers world class research and all degree programmes are internationally recognised. Aberystwyth's strengths lie in the fields of food and water security, earth science and environmental quality, computer science (particularly artificial intelligence and machine learning), international politics, modern languages, the performing arts and health and exercise science.

2.2.   Aberystwyth's international strategy to 2012

Any successful business in a competitive market must establish a number of complimentary factors: i) the quality of its product; ii) its uniqueness; iii) its reputation; iv) its products which match market demand; v) a well-developed understanding of the market. However, with the exception of markets such as Malaysia, Aberystwyth's approach has concentrated on a single activity, attracting students to study in Wales. Despite this, international activity, properly managed and scrupulously risk assured, represents a significant potential source of revenue.

2.3   Local successes and failures

Aberystwyth has enjoyed some success in two international markets, Malaysia and Norway. The lesson of these is that Aberystwyth can succeed in the international market if it invests in its activities and develops its relationships. Characteristics of both success stories are that the university and specific departments (psychology has developed strong relationships in Norway) have invested in and developed mature relationships with agents and higher education partners in both countries.

2.4   International student demand beyond 2013

The international market for students is huge and profitable with much growth potential. Degree and foundation pathways which are linked to high calibre intensive English language programmes are rising in popularity. While international post graduate training is under great competitive pressure, the undergraduate market still has great growth potential. Particularly strong sources of undergraduate enrolment are Malaysia, Indonesia, India, Turkey and Saudi Arabia.

A massive market, largely ignored by UK higher education (with some notable exceptions, such as the Open University and the University of Derby) is the worldwide market in self-paced E-learning products. E-learning is increasingly being seen as an important means for developing economies to educate their population and the strategy is nationally mandated in countries such as Malaysia, Vietnam, China and Nigeria.

All universities should be alert to national initiatives. It is clear that the governments of many developing economies wish to expand their domestic higher education sector and raise the quality of the universities they currently have. Schemes such as Brazil's *Science without Borders*, Vietnam's *Project 911*, both of which will support up to 1000 fully funded overseas PhD scholarships each year, must be vigorously engaged with.

2.5   Branch campuses/regional hubs

Research strongly suggests that international branch campuses will succeed if the offer is based around institutional reputation, quality of programmes, employability prospects and international rankings. Research has also modelled typical configurations of international activity, and universities should pay attention to alternative models when determining their own approach.

Action 1: Aberystwyth should explore the establishment of branch campuses and determine the specific approach to take in this regard.

2.6   Validation and franchising

In the process of revising collaborative partnership processes, universities should take steps to establish clear guidelines which will enable them to enter into the validation and franchising market in a manner which is scrupulously quality assured. The process is two-fold. Firstly, there must be approval of the partner (a decision of senate) prior to validation or franchising the provision. Secondly, institutes must design and validate framework programmes which can be easily offered to overseas partners. These must be of exceptionally high quality and supported by embedded learning resources.

Action 2: Aberystwyth should seek overseas partners who can deliver a franchised and validated provision.
Action 3: Aberystwyth should design and establish high quality programmes which can be quickly adapted and delivered overseas.

2.7   Foundation partners: foundation colleges, partner schools, international schools

These kinds of foundation partners represent a large source of potential students. A mature international strategy will develop and nurture an extensive network of them. In addition, Aberystwyth should consider the delivery of intensive English language training and foundation programmes through these kinds of partners, from which students may matriculate with a validated qualification, matriculate to a higher education partner, or articulate to the home campus or foundation partner colleges and schools in the UK.

Action 4: Aberystwyth should design and pre-approve high quality foundation programmes which may be franchised to foundation partners overseas.
Action 5: Aberystwyth should consider the design and delivery of an intensive English language training programme which can be delivered by overseas foundation partners.
Action 6: Aberystwyth should establish strategic alliances with UK school and further education partners through which incoming students may be prepared for study at framework for higher education (FHEQ) level 5 and above.

2.8   International higher education institution alliances

A strategy should be developed including: a range of partnerships with higher education institutions in target countries; relationships based on profile-raising staff and student exchanges; alliances where Aberystwyth works in partnership to jointly develop, deliver and validate distance learning programmes in strategically important areas.

Action 7: Each memorandum of understanding should actively deliver regular staff and/or student exchanges.
Action 8: Aberystwyth should investigate the development of international distance learning programmes with major international higher education institutions.

2.9   Mapping the exit points

Aberystwyth should make available and celebrate its full menu of qualifications, from foundation and undergraduate to taught post graduate and research degrees. By leveraging this full spectrum of awards, considerable numbers of overseas students may be accessed who may not initially aspire to a full degree but for whom an Aberystwyth qualification will be a considerable career asset.
Action 9: make available, map and market all the qualifications that Aberystwyth offers in order to reach the widest possible market.

2.10   E-distance learning & certified professional development (CPD)

This is a potentially massive market. High quality E-distance learning provision is a means by which Aberystwyth may access a large international market, satisfying demand for high quality. The E-language training market also offers an opportunity. In addition, Aberystwyth's adult learning CPD is currently aimed at a local market and is extremely modestly priced. The University could develop an electronic version of these courses, mirroring the University of Cape Town's "Get Smarter" site, which reached over 20 000 students annually and generates a revenue in excess of £18 million.
Action 10: Aberystwyth should aim to develop an E-Learning arm with a remit of reaching a wide international audience and challenging targets for revenue generation.

2.11   Marketing

Aberystwyth should develop bespoke plans for entry into selected markets. The university should also conduct its own market research by assembling data from the many high quality information sources which are available.
Action 11: Conduct thorough market research/analysis and develop bespoke plans market entry.

2.12   Conclusion

Research suggests that an internationally active UK university has as many students studying its programmes overseas as it does domestically.
Action 12: Aberystwyth – and indeed all universities - should answer the question 'How ambitious do we want to be internationally?' and 'Are we prepared to invest to get there, and to what level of investment?'

> **"…all universities should answer the question: "How ambitious do we want to be internationally?" and "Are we prepared to invest to get there, and to what level of investment".**
> John Grattan, Pro Vice Chancellor, Aberystwyth University

3.   A Strategy for Developing an Entrepreneurial University

Professor Stephen Hagen, Acting Vice-Chancellor, and Paul Coyle, Professor of Entrepreneurial Leadership, at the former University of Wales, Newport

University of Wales, Newport **Prifysgol Cymru, Casnewydd**	Total HE students: 9,990 including: UK Postgraduates: 1,350 UK Undergraduates: 7,650 International: 985

In this vignette, Stephen Hagen and Paul Coyle, (both formerly members of the Executive of the former University of Wales, Newport), describe work undertaken to develop an entrepreneurial university, both through an ambitious and radical strategy, and through support for graduate start-up business and curriculum development.

3.1   Introduction

From 2011-2013, the University of Wales, Newport undertook a range of activities designed to enable it to become more entrepreneurial and with a view to creating, over the longer term, an 'entrepreneurial university'. In 2013, merger with University of Glamorgan to create the new University of South Wales led to the dissolution of the University of Wales, Newport. This vignette captures useful lessons from the period prior to merger regarding the path to developing an 'entrepreneurial university'.

3.2   A strategy for the whole organisation

One of the first and most important steps was the articulation of a strategy that would define what the concept of the 'entrepreneurial university' would specifically mean at the University of Wales, Newport. The distinctive principle of the 'entrepreneurial university' for Newport was that it would empower staff, students and external organisations and communities to effect meaningful change in the world around them.

Whilst the scope of such an entrepreneurial university's activities would include opportunities and support for new business start-ups, it was thought that innovation within the structure and culture of the organization would lead to the development of new initiatives and provide a clear direction and purpose within the university itself. The emphasis of the 'entrepreneurial university' was also to be on the curriculum: developing and translating knowledge across different disciplines in line with a closer application to employment. The aim was to establish closer partnerships with external organisations and communities who were interested in engaging in the transformation.

3.3   Support from the top

The adoption of the 'entrepreneurial university' as the primary strategy for Newport was approved by the Board of Governors in autumn 2011. Support from the top was deemed crucial for the strategy to become an 'entrepreneurial university' to be successful. Professor Stephen Hagen took on the lead role within the Executive, first as Deputy Vice Chancellor (Academic) and then as Acting Vice-Chancellor, giving the opportunity for the implementation of the strategy to be pursued across the entire organisation.

The appointment of Paul Coyle, as Professor of Entrepreneurial Leadership and Executive Dean of the Faculty of Arts & Business, brought additional expertise to the organisation to support the implementation of the strategy. At the Acting Vice-Chancellor's request, Professor Coyle established and ran the Entrepreneurial University Development Group, whose membership was drawn from experienced and

enthusiastic champions of entrepreneurship in faculties and professional support departments. The group worked to ensure that the university's strategy to become an 'entrepreneurial university' was inclusive of all staff, identified staff development priorities, delivered developmental events, and recommended ways of recognizing, incentivizing and rewarding staff. In addition, the group sought to devise working definitions of entrepreneurial attributes for staff and students.

3.4   A strategy embedded in the curriculum

A major principle of the strategy was to focus on *developing the 'citizen-entrepreneur'* whose skills would be necessary not just to the individual, but to the regeneration of the South Wales economy, leading to curriculum development that would be mapped to the target sectors identified for its regeneration. It was also recognised that the strategy would support public services in the region, assisting them to be at the forefront of effective innovation in their fields. Newport was already a university with a powerful focus on the development of its region – with 50% of its students being over 30 years old.

The impact of a strategic focus on entrepreneurship resulted in a *much stronger emphasis on entrepreneurial skills, employability and embedding of (social) enterprise in academic programmes*. In 2011-12 this manifested itself in a greater emphasis on employability and the development of specific modules entitled 'entrepreneurship' or 'enterprise' at undergraduate level. The underlying cultural impact was harder to measure but was arguably more significant in that small scale initiatives were undertaken across the university as a result of the increased profile of entrepreneurship.

The process of *validation and revalidation of programmes* was the key mechanism for embedding entrepreneurship across the curriculum. There were two notable manifestations of this: *changes to programme content and to the number of trans-disciplinary cross-school and faculty initiatives that were undertaken*.

The reconfiguration of the university's four academic schools in 2011-12 into two faculties with cross-cutting responsibilities was designed to support cross- and trans-disciplinary innovations. The creation of the *Faculty of Arts and Business*, and its location on the new city centre campus where staff from a range of disciplines were co-located, countered the silo effect of previous academic configurations. Professor Paul Coyle was also appointed to lead the planned development of the new faculty and to embed the 'entrepreneurial university' as a tangible, living cross-university process.

The largest scale new curriculum development was a suite of MA programmes that focussed on *business creation*. The core modules capitalised on the expertise of specialists in entrepreneurship and business innovation but used the experience of specialists in art and design to contextualise the delivery and assessment and support individual students' ideas. Students were provided with studio space to launch creative businesses and be linked in to the university's business incubation unit and 'bright ideas' (start-up) programme. *Social enterprise* was also included as a new form of supported business creation within this suite of programmes as a progression route for the wider undergraduate population.

The underpinning change of university ethos to one that is more entrepreneurial also impacted on *significant revisions made to programmes as they were being revalidated*. The undergraduate business programmes, for example, were given a compulsory module requiring work based learning or an enterprise project. All full-time students also studied a business collaborations module, designed to aid employability and include content such as professional networking and social capital.

History is perhaps a less obvious subject area to embed entrepreneurship but the teams' success with digital heritage projects and the interests of staff together with the strong institutional support for innovation led to a greater emphasis on heritage rather than History. The revalidation of the MA in Regional History saw the introduction of Heritage into its title and an emphasis on employability through closer working with a range of heritage projects and local partners. This theme was also reflected in a new

foundation degree in Heritage Management that embedded entrepreneurial and business skills.

3.5   Support for start-ups

Central to the university becoming an 'entrepreneurial university' was increasing the opportunity for student start-ups. In November 2012, the *Bright Ideas* ('Innovation') Centre opened alongside the University's Business Development Team adjacent to the Arts and Business Faculty and mentoring sessions started for students and staff. In March 2013, a Graduate Incubation Centre opened with offices for new graduate start-ups, an open plan incubator area for hot-desks, a training room and meeting room. This space could be used by new businesses and for the *Student Enterprise Club*. These activities built on Newport's track-record of success in business/community engagement, including a flow of student start-ups and, broadly speaking, the existence of a vocational/professional curriculum.

3.6   Key messages

Some of the useful lessons learned from the period of time spent on this project to create an 'entrepreneurial university' include:
- Defining what the concept of the 'entrepreneurial university' means to the specific context of an institution in terms of its history, culture and location;
- Obtaining the support of the governing body for the strategy to become an 'entrepreneurial university';
- Allocating lead responsibilities within an executive for the implementation of the strategy;
- Establishing close links with the businesses and communities that will benefit from and can support the strategy;
- Identifying staff development priorities, delivering developmental events, and recognizing, incentivizing and rewarding staff;
- Creating a strong emphasis on entrepreneurial skills, employability and embedding of (social) enterprise in academic programmes;
- Using validation and review events to embed change in curriculum content and learning strategies;
- Configuring academic structures to support collaboration and interdisciplinarity;
- Providing support for student start-ups.

> **"A strategic focus on entrepreneurship resulted in a stronger emphasis on entrepreneurial skills, employability and …. enterprise in academic programmes."**
> Stephen Hagen, former Acting Vice Chancellor of the former University of Wales, Newport

4.   A Strategy for Business Engagement - Developing an Entrepreneurial Culture

Laura Woods, Director of Academic Enterprise, Teesside University

Teesside University *Inspiring success*	Total HE students: 27,980 including: UK Postgraduates: 2,465 UK Undergraduates: 23,435 International: 2,085

This vignette provides an example of how a university can take an entrepreneurial approach to developing enterprising staff with the capability to deliver innovation in their teaching, research and business collaborations.

4.1   About Teesside University

Teesside University is the primary higher education provider in the Tees Valley in north east England. Its six academic Schools (Business, Computing, Science & Engineering, Social Sciences & Law, Arts & Media and Health & Social Care) cater for both full-time undergraduates and a large non-traditional student market; while research of national and international quality is delivered through its five research institutes.

The university has a strong reputation for digital technologies, and a track record in supporting graduate enterprise. It works closely with business and community partners and plays a key role in the Tees Valley Unlimited Local Enterprise Partnership. It opened a new Darlington campus in 2011 to expand HE provision in the west of the Tees Valley and to grow its professional and organizational development. Teesside won the Times Higher Education University of the Year award in 2009, the first post-1992 university to do so.

4.2   The complex environment

In common with much of the higher education sector, *Teesside University is facing radical change*. Public funding for teaching is reducing, research funding is increasingly concentrated and new private competition is being introduced. At the same time, an increasing number of organisations in the immediate locality are looking to the university for support, partnership and stability, and the university has a significant role to play in the delivery of the Local Enterprise Partnership's economic development strategy.

4.3   A focus upon business relationships

A key response from the university to this changing external environment is a *reaffirmation of its commitment to working with business*. Much more than a mission differentiator, this underpinning approach is seen as critical for ensuring that both teaching and research are business-relevant; attracting students and producing employable and entrepreneurial graduates; supporting new business creation in its own right; embedding innovation and skills in businesses with the capacity for growth; and sustaining and increasing income.

The university's objective is to cement its reputation for understanding, working with and responding to business, in ways that deliver measurable added value not only for its partners, but critically for its students, staff, teaching and research.

The university embarked on a strategic change project some four years ago to inculcate a stronger entrepreneurial culture in the institution. The project involved the appointment of senior academic managers in schools with responsibility for business engagement; a programme of incentives and

rewards; creation of a university-wide team of business development managers, underpinning infrastructure and systems, including a customer relationship management system; an extensive staff development and mentoring programme; and networks and events to develop a business-facing community with real critical mass in the university.

4.4 Organising for success

The above activity was underpinned by a central department charged with supporting all aspects of work with business, from knowledge transfer and consultancy, through enterprise and entrepreneurship, to tailored workforce development for employers. Success was measured both quantitatively, through performance indicators such as new businesses created and supported, workforce development student numbers and Higher Education Business and Community Interaction survey income; and qualitatively through internal and external perception surveys.

4.5 Present and future development

The second stage of development now under way seeks to *drive change, positively and effectively,* through the contributions, collaboration and lasting engagement with the business agenda of a wider group of colleagues. To be successful and sustained, this engagement needs to be characterised by entrepreneurial behaviour, and to be effected in different, innovative ways.

With an infrastructure in place, the key elements of this second stage are strongly people-focused. They include:

- *A new and different staff development programme,* linking participants directly with business through mentoring (for new staff), a cross-disciplinary team project with business, and a series of business partnership challenges (for more experienced staff). Funding has been used to free up both staff and business time to facilitate partnership working.
- *A stronger focus on internal communication,* through mechanisms such as events, lunches and TeesBe, an online platform for the exchange of news, views and information and the creation of an online staff community.
- *A social enterprise strategy,* supported by a social entrepreneur in residence, support and funding for new social entrepreneurs amongst staff and students, and a programme of high-profile speakers.
- *entrepreneurs@tees,* an initiative designed to stimulate entrepreneurial mindsets in students through events, projects and partnerships with local entrepreneurs – as well as engaging academic colleagues in new curriculum development
- *Enterprise fellowships:* a new career route for staff who develop strong relationships with business.
- *Buy-out of time and access to finance for new entrepreneurial teaching or business initiatives* through a business investment fund.
- *Commercial Spark* – a major practical initiative focused on the further development of business development managers as a cohesive and influential community of "boundary spanners" between academe and the wider business and community world.

4.6 Problems and Opportunities

This focus on embedding an entrepreneurial approach more widely, brings with it familiar challenges posed by structure (internal competition vs. internal collaboration); resources and capacity (workloads and headroom); competing priorities at school and university level; attitudes; and communication. In many ways, this last is the greatest challenge, and consultation and discussion, the enlisting of credible expertise, innovative approaches, and building and using effective networks within the institution are all fundamentally important. The importance, too, of continuity, reinforcement and an emphasis on continuous improvement cannot be overestimated.

4.7   Targeted Outcomes

The impact of the change being sought is the development of a significant community of enterprising staff with the capacity and capability to exploit opportunities and deliver innovation in their teaching, research and business work. As with all cultural change, this is a long game, and one which crucially is dependent upon strategic commitment at the highest level.

The fact that this is *led from the top,* by the Vice Chancellor and his team, is the biggest critical success factor for Teesside.

> **"The impact of the change being sought is the development of a significant community of enterprising staff with the capacity and capability to exploit opportunities and deliver innovation in their teaching, research and business work."**
> Laura Woods, Director of Academic Enterprise, Teesside University

5.   Creating Innovation in Partnership with Local Communities
Chris Baker, Director of Economic and Social Engagement, University of Brighton

University of Brighton

Total HE students:	22,075
including:	
UK Postgraduates:	3,385
UK Undergraduates:	15,775
International:	2,915

This vignette describes the challenge of innovation driven by partnership to meet the needs of very different local communities. The challenge for the university is to create an entrepreneurial organisation that can marry the drive of enterprising individuals, both staff and students, to the economic and social needs of these communities.

5.1   Introduction

The University of Brighton is a community of 22,000 students and 2,600 staff based on five campuses in Brighton, Eastbourne and Hastings. Forty-five per cent of all undergraduates are aged 21 or over on entry. Ninety-four per cent of full-time undergraduates have the opportunity to participate in work-based or work-related learning as part of their course. The majority of courses are accredited by professional and statutory bodies. Results from the 2008 Research Assessment Exercise confirmed that 79% of the university's research output is of international standing. Brighton is also ranked as the leading modern university in terms of the quality of its research by Research Fortnight. For these reasons it seeks to describe itself as *'a professional and applied university.'*

5.2   The organisation culture

The University of Brighton can be characterised as *a pluralistic organisation where decision making is devolved to school level.* Individuals enjoy a good deal of freedom and individual autonomy in the absence of a performance management culture. This means that the way change is conceived, created and managed will vary significantly at the level of the individual, discipline and school.

5.3   The entrepreneurial challenge of localisation

Brighton embraces many of the ingredients of an innovative institution; but these ingredients are distributed geographically and buried deep within different academic disciplines. Therefore describing a pan-institutional distinctive notion of an entrepreneurial organisation is difficult. This should not imply that leaders, staff and students themselves are not enterprising (many are). The values which underpin the sense of enterprise are likely to be couched in the language and practice of partnership, collaboration and individual philosophy rather than in a broad institutional mission statement. The partnerships sought are likely to be for mutual benefit with a desire to make a positive difference to the communities locally, globally and professionally.

5.4   Pursuit of social engagement

It is hardly surprising in these circumstances that *social engagement resonates strongly as a basis for the university's pursuit of innovation.* For example, Brighton's Community University Partnerships Programme, now in its tenth year, won the THES award for outstanding contribution to the local

community as far back as 2008 and has gone on to collect further accolades. As a result the commercial imperative of exploitation for university gain is not (and is unlikely to be) one that drives strategy or action in the immediate future. Strategies to move the institution forward can only succeed if they acknowledge this as the basis for development. The current strategy (2012-2015) sees both economic and social engagement not as simply ends in themselves but flowing from translational research and teaching that have an impact on both the student experience and the experience of those living in our communities.

5.5   Building innovative communities - Brighton

The university, to support innovation, has to do so within the specific context of the way that knowledge exchange is being supported and organised in the different stakeholder communities. *Innovation strategies are determined locally* in partnership with external stakeholders so that they reflect specific challenges of a given area. The university's innovation support is based around four spatial areas that relate to Brighton, Eastbourne, Hastings and Crawley including the broader area known as the Gatwick Diamond'.

The approach in Brighton, the home city of the university, is determined by the town's reputation as a vibrant and lively place to visit, live and work in. The economy is relatively diverse and dominated by small businesses, giving it flexibility and dynamism. It has one of the highest business start-up rates in the UK but also a high business failure rate. The most important sectors are culture, leisure and tourism, and the creative, digital and IT sectors. The approach to innovation is to tap the potential which these cultural and creative communities offer with active engagement of the Faculty of Arts. The Brighton Fuse, involving both Brighton and Sussex universities, starts with the belief that by connecting the arts, humanities and design with digital and ICT, creativity and innovation can be enhanced (http://www.brightonfuse.com/). There is a similar commitment to a sustainable future: the university's Green Growth Platform will support the organisation and delivery of a 'Green Deal' with its private and public sector partners.

5.6   Building innovative communities – Hastings and Crawley

The strategies in two other catchment area towns, Hastings and Crawley, are markedly different. In Hastings, the approach to innovation rests on the ability to deliver education led regeneration. The decision to create a university centre some ten years ago was to use education to provide a solution to the economic and social issues of the town, which has high rates of unemployment and deprivation. The university has also become the major sponsor of two secondary academies, working closely with their feeder schools and the college to improve performance. An entity called, "The Exchange" has also been promoted to link teaching, learning and research with the needs of the community.

In Crawley, economic activity and productivity levels are high. With a major London airport, Gatwick, at its heart, the area is home to many successful international businesses and has excellent communication links. Yet there is a relatively low level of participation in higher education and skills levels are low. This reflects also on the rates of business start–up. Brighton, local colleges and Chichester University have opened a university centre designed to create a new hub to promote research and development and a curriculum that will address the challenge of how local people can derive more benefit from a high growth area.

To sum up, the approach the university is using to organise knowledge exchange is primarily determined by local not institutional need and is driven by co-creating innovative responses with partners. In this way the university can judge its entrepreneurial endeavour by the value which others attach to how students, graduates, staff and the institution respond to their specific needs.

5.7 Creating and sustaining change

The challenge of positioning an institution to use its knowledge base to promote innovative solutions to economic and social development is problematic. Firstly, the process is political and involves dealing with a public policy agenda that may be unhappy terrain for many staff. Secondly, working in partnership takes time to establish both trust and confidence. This, at times, appears agonisingly slow. Internally it is often not recognised that managing change in this way is not always at the discretion of the university. Furthermore the manner of university engagement is based on organisational and social networks which may involve contradictory formal and informal relationships.

The entrepreneurial activity may also engage a narrow range of staff, leaving the majority untouched or unresponsive to what is seen as someone else's agenda. It is also difficult to respond if external needs require different configurations of knowledge that aren't present in the way both the academy and institution are organised. Finally, the model for funding this type of innovation has relied on access to regional development money to supplement institutional investment. The creation of new funding mechanisms means that generating funding from the private sector has become more significant. Nevertheless a university is important as a means of levering that investment locally. It is therefore adding to public value but not always in a measurable way.

5.8 The challenge ahead

A key issue is *how the above approach to creating innovation through partnership in local communities might ultimately impact upon the future development of the university*. For example, should it move to grant more autonomy to the academic areas and/or campuses to enable them to devise more ambitious local strategies? Set against that is the increasingly difficult task of enabling good practice to be more widely shared across the whole institution transcending both geography and discipline. This in turn raises the highly important issue of how porous or accessible the organisation should become?

Many facilities are already under pressure at certain times of the year. This begs the question of finding even more innovative approaches that co-locate the university and community in a connected way. This has been missing in all five campuses to date but new developments in the pipeline offer opportunities to do just that. Physical location is, however, only one option: using technology to drive openness and transparency is another. This challenges the institution to work more closely with the digitally creative in the city. *Learning from stakeholders is part of the future*. For Brighton, the entrepreneurial challenge is how the desire to be a force for economic and social transformation is translated into a coherent package of actions that drive not just the university's strategy but also that of the many partners in the public and private sector.

> **"…the approach the university is using to organise knowledge exchange is primarily determined by local not institutional need and is driven by co-creating innovative responses with partners."**
> Chris Baker, Director, Economic and Social Engagement, University of Brighton

6. Achieving Impact through Partnership

Professor Pete Downes, Principal and Vice Chancellor, University of Dundee

UNIVERSITY OF DUNDEE	Total HE students: 16,500 including: UK Postgraduates: 4,010 UK Undergraduates: 9,625 International: 2,860

This vignette focuses upon the philosophy of a university built upon academic excellence and its efforts to embed, accelerate and reward impact through interdisciplinarity and partnership, thereby enabling students to emerge with a better understanding of how they can use the skills they have acquired at university in the outside world.

6.1 A transformational agenda

Although the University of Dundee has developed many entrepreneurial characteristics, they alone are not what wholly distinguish the university from others. Dundee should strive to make a unique contribution to higher education drawing upon a range of sources. These include the evidence of its history, the individual and collective experiences of staff, students and other stakeholders and not least instincts about what will excite and motivate staff. They include also my experience of joining the first Entrepreneurial Leadership Programme, the friendships made there and the eclectic range of tutors and contributors to the Programme.

The university's core purpose centres upon '*Transforming Lives*' a vision with the goal of becoming Scotland's leading university within 25 years. The first Principal of what was then University College Dundee stated that the university would be distinguished by the application of its academic work, firmly nailing the university colours to the impact mast. Cross-disciplinary working then was not a new idea, but something we had forgotten how to do, as the strength of specific disciplines and supporting bodies such as learned societies grew during the 20th century. Two of our founding professors, D'Arcy Thompson (who invented mathematical biology) and Patrick Geddes (a botanist who became known as the father of town planning), were celebrated polymaths whose interests were piqued only by the complex problems they wished to solve, who fashioned understanding from any relevant source and who trained their students to think in the same way.

University College was also founded to support the education of the men and women of Dundee. An intimate relationship with the economic, cultural and social wellbeing of the city and its people remains a driving force for the university today and sits at the heart of the vision for the future. It is not a parochial view because the university's international reputation is a vital stimulus for investment in jobs and innovative businesses, a source for recruitment of world class staff and students and opens doors to global opportunities for our students, staff and other stakeholders.

6.2 Academic themes demanding cross-disciplinary engagement

A contemporary approach to problem-based learning and research finds its voice in three academic themes that will be the focus for future investment and development. These are:
• Promoting the sustainable use of global resources
• Shaping the future through innovative design
• Improving social, cultural and physical well-being

They draw attention to the *stated purpose to encourage people with different backgrounds to work together.* All four of the University Colleges have or could have significant presence in each of the themes.

There are real challenges ahead to devise a curriculum that is genuinely interdisciplinary. Dundee graduates will need to work in teams which are problem orientated and the decision makers and question-setters of the future will have to draw on knowledge and command skills from multiple disciplines. It will be the distinctive qualities of the university, its sense of place and the problems it sets itself to address which will surpass the content of what is taught as to why students will want to study in Dundee and not elsewhere or on-line.

6.3   Innovation, impact and intellectual property (IP)

These three terms are often used in universities with varying meanings. In Dundee *innovation is seen as a set of processes and insights which put new knowledge and understanding to good use on behalf of society*.

Neither curiosity-driven nor applied research is on its own innovative and a key role of universities should be to accelerate the uptake of new knowledge into innovation chains. This can't be done if they abandon fundamental research: but *taking responsibility for translation which involves handing knowledge on to those who can use it is an important source of impact*.

Intellectual property should therefore primarily be used to catalyse the uptake of knowledge. This understanding has been critical in Dundee's innovation success stories. The definition of IP stretches well beyond patents and copyright to include the unique sets of knowledge, skills and know-how found in our research staff and their teams. Its key use is to drive partnership formation between researchers and the users of research and not primarily as a windfall source of revenue.

6.4   Examples of accelerating impact

Two quite different Dundee examples illustrate use of this wide definition of intellectual property to drive partnerships that deliver impact. The first builds on Dundee's expertise in bioscience to drive collaboration with some of the world's leading pharmaceutical companies over more than 15 years, generating £50million of inward investment and the founding of two spin-in companies. It is the first example I know of in the UK which uses an open innovation model (though we didn't know enough to call it that at the time).

The Division of Signal Transduction Therapy targets proteins called kinases which control many aspects of cell behaviour which when defective cause a range of diseases from cancer to rheumatoid arthritis. Scientists in Dundee lead possibly the most intensive fundamental research on these proteins anywhere in the world. Their reputation was used to broker a ground breaking agreement which all participating companies were prepared to sign up to in order to access the University's expertise. There was general astonishment that so many rival companies could be persuaded to co-operate. This programme has been renewed three times and is currently reckoned to be driving drug discovery programmes worth several $billions in the participating companies.

The second, very different, example concerns *the proposal to bring the first branch of the Victoria and Albert Museum (V&A) outside London to the banks of the River Tay in Dundee*. Duncan of Jordanstone College of Art and Design merged with the University of Dundee more than 15 years ago and ranks number one in Scotland for research in art and design. The V&A recognised the strengths of the university in Art and Design.

Building upon its reputation, the University was swiftly able to broker interest from Dundee's City Council, the University of Abertay Dundee, the Scottish Government and its economic development agency, Scottish Enterprise. The speed with which this could be done and the spectacular site proposed for the building jutting into the River Tay clinched the V&A's commitment. With the expected opening still a couple of year's away business investment in and around the waterfront site is already building. The prediction is that this project, to be completed by 2015, will have even more impact on the perception

of the city and its economic fortunes than the combined impact of the bioscience and computer gaming industries, for which today's Dundee is renowned.

6.5 Embedding wider impact

The above stellar examples of engagement and innovation, built upon academic excellence are not typical outcomes of the institution's current culture. To drive this agenda the new strategy assigns equal status to three academic pillars; *teaching, research and wider impact*.

In Dundee *wider impact combines knowledge exchange and public engagement*. These are seen, in many institutions as extensions of the research agenda. But it is Dundee's intention that *wider impact should sit between research and teaching and overlap with each*. Hence, engagement with the world beyond the university will feed back into curricula, provide jobs and internships and, by illustrating the relevance of our research, will create employable, enterprising and even entrepreneurial graduates.

6.6 Entrepreneurship education and impact

In Dundee there are the usual disagreements about embedding entrepreneurism in the curricula which, at their most extreme, portray this aim as an attack upon academic freedom.

I disagree with such a view, but don't think the answer to producing more entrepreneurial graduates will come solely or mainly from formal approaches to teaching. *It will come instead from the example of a university that is fully engaged with the economic, social and cultural needs of society*. This is a particularly important issue for postgraduate research students whose usual motivation is to become an academic research leader in the image of their supervisor. When that supervisor collaborates with industry, it isn't just the contacts made, but the fact that industry is seen as a respected sector by the student's role model that alters their perceptions.

6.7 Rewarding impact

A strategy to embed impact described above has a number of manifestations. Perhaps the most important of these will be to *ensure that achievements within the wider impact agenda are coupled to rewards and career development in the same way that success in research is rewarded*.

No longer is differential weighting applied to success in research, teaching, knowledge exchange or public engagement as performance indicators for promotion. Stellar success in any one might be sufficient for promotion to chair level. There are already examples of professors whose promotion was based more or less exclusively on the reputational value of their teaching or through innovation and not on fundamental research; the task in moving this agenda forward is to make this common and to refine the performance measures used to assess such contributions.

6.8 The future imperative

When the above strategy is fully embedded students who study in Dundee will emerge with a better understanding of how they can use the skills they have acquired at university in the outside world.

UK universities punch well above their weight in terms of the academic impact of their research, but there is a fundamental weakness because industry spends much less on its own research and innovation than competitors in other countries. As a consequence there is little absorptive capacity for the knowledge universities create within the national hinterland.

Only part of the solution will come from universities working in collaboration with UK businesses. *In the long term there is a need to build this absorptive capacity by ensuring UK employers have access to graduates who will do much more than fill existing jobs. They will create new jobs by innovating within the organisations they work for and by forming entirely new companies at some point in their careers.*

Universities are at their best when they teach by example. The effect of research and translational competence on business innovation is only part of the story. Its effect on students and their capacity to innovate will be a more lasting legacy. This is why Dundee is determined to make the knowledge exchange agenda an integral part of student experience.

> **"Neither curiosity-driven nor applied research is on its own innovative and a key role of universities should be to accelerate the uptake of new knowledge into innovation chains. This can't be done if they abandon fundamental research: but taking responsibility for translation, which involves handing knowledge on to those who can use it, is an important source of impact."**
> Pete Downes, Vice Chancellor, University of Dundee

7. The Role of Partnership in a Regional Innovation Hub

Professor Paul Gough, Deputy Vice Chancellor, University of the West of England (UWE)

<table>
<tr><td>Total HE students:
including:</td><td>30,390</td></tr>
<tr><td>UK Postgraduates:</td><td>5,040</td></tr>
<tr><td>UK Undergraduates:</td><td>22,525</td></tr>
<tr><td>International:</td><td>2,825</td></tr>
</table>

University of the West of England

BRISTOL

This vignette explains how relevant examples of enterprise and entrepreneurial thinking can inform a university's activities in a Regional Innovation Hub.

7.1 Introduction: an ethos of partnership

UWE Bristol is a highly enterprising university, with a successful record in co-creating new ideas and new solutions to deliver innovative futures. The university has 30,000 students and 3,500 staff with an annual budget of £223 million. UWE Bristol has strong links with business and industry to ensure that teaching and research have direct relevance to society and the environment. Its vision from 2007-13 is to be the UK's best Knowledge and Learning Partnership University, with a mission to make a positive difference to students, business and society. Its ethos of genuine partnership working has enabled UWE to successfully promote and drive opportunity, social justice, creativity and innovation. As part of its partnership mission over the past five years, UWE Bristol has achieved a number of milestones in its ambition to be a regional innovation hub.

Firstly, in 2012, the tally of knowledge transfer partnerships reached a record 25 over an 8 year period; three months earlier (in Autumn 2010) the university became the lead organization for three of the five iNETS across the south-west UK[1]; in summer 2011, UWE became the lead organization for REACT a 3 year creative economy hub for the SW UK (England and Wales) leading five other higher education institutions[2]; in 2012, the university was awarded one of the only four Business Technology Centres based in higher education institutions in the south-west.

Building on this success, a review of the strengths of university's partnerships was undertaken with the aim to identify possible future improvements. The review aimed to:
• Draw on evidence to determine the characteristics of an innovation hub;
• Gather national and international examples of successful regional leadership and positioning;
• Identify through a needs analysis the missing components in UWE's claims;
• Explore the role of enterprise in furthering our ambitions;
• Examine relevant examples of enterprise and entrepreneurial thinking to further develop the rationale;
• Devise a plan and set of actions that will realize (and actualize) the vision;
• Inform the university's review of its Strategic Plan 2013-2020.

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[1]Five iNets were set up in autumn 2010 with £12.3 M funding from SWRDA, ERDF and partners to support small and medium sized businesses with high growth potential in the South West priority sectors: Advanced Engineering and Aerospace, Biomedical, Creative Industries, Environmental, and Microelectronics. To date the five iNets have established a support network of approximately 2500 businesses with over 400 being directly assisted. By July 2013, the end of the current project, there should be 4000 engaged and 900 assisted across the South West of England excluding Cornwall and the Isles of Scilly.

[2]UWE is leading a consortium that includes the Universities of Bristol, Exeter, Bath and Cardiff and the Watershed Arts Trust. 'The Research and Enterprise in the Arts and Creative Technologies (REACT)' KE Hub will involve the consortium working closely with creative businesses, including SMEs, arts and culture organisations and other agencies.

7.2   Audit and dialogue

During March 2012, work was undertaken with groups and individuals within UWE Bristol, harnessing expertise from academic staff and professional services, and also turning to the UWE student enterprise society to help test some ideas. The university drew upon an external consultancy to test the realities of its partnership statements, conducting over 800 interviews with a diverse blend of private, public sector users at micro and small and medium enterprises and mid-cap companies.

The audit revealed some real challenges. Although the university had made significant links in the immediate city-region these were sometimes sporadic, lacked follow-through, and for many businesses the university remained invisible or unapproachable. The very term 'partnership' was often regarded as intimidating by small businesses who expressed a strong desire to be affiliated in some way, but for whom the term 'partner' was too formal. There was also the issue of scalability - how to grow from a successful knowledge transfer partnership to a strong, deep ongoing relationship with a business – and the larger issue of legacy planning or a host of major EU funded projects.

During the summer of 2012 the consultancy was used to inform the emerging UWE Bristol 2020 strategy, specifically 'Priority Work-stream Four' which set an ambition to:
> *Enhance the local and global reputation, health, sustainability and prosperity of Bristol and its city-region through socially responsible civic engagement and leadership.*

Through dialogue and testing with a wide range of users - including the Local Enterprise Partnership (LEP), the Confederation of British Industry and Institute of Directors - this has been further refined into three priorities. One addresses the extensive schools and college partnership activity; the second the leadership role through community and public engagement; and the third the delivery of an impact to the city-region through:
> *Strong partnership with and professional support for business, engaging with high impact networks and working with key regional partners, helping to drive economic growth and well-being in the Bristol city-region.*

It was the process of gathering views and opinions – internally and externally – and then testing them against the record to date that has proved the most valuable learning.

7.3   Taking partnerships forward: key actions

As a result of the audit and process of gathering views and opinions, a series of further steps were taken:
- *'partnership' typologies were reviewed*, shifting from a 'bronze, silver, gold' tiered approach to an internal language that spoke of 'prospecting' and 'foraging', leading to a diverse range of 'affiliates' which might in time lead to close strategic work with a select few corporate partners. These 'gold' level or strategic partnerships would be intended to have institution-wide benefit and impact. They would be used selectively and for strategic end only, endorsed by a formal memorandum of understanding or a strategic alliance agreement between UWE Bristol and the partner. Unlike the network of 'affiliates', the 'partners' would provide a comprehensive framework for shared activity covering a range of defined benefits for students (e.g., curriculum development, internship programmes), and for staff (e.g., shared research or business-facing programmes, staff development or secondment opportunities).

- *a focus was taken on legacy projects* that would extend the life of major innovation platforms. Major catalyst project bids were launched, one aimed at developing a new model for higher education/ business engagement in the West of England, which would drive business growth through a bespoke programme of skills, enterprise and employability; the other, working in conjunction with other higher education institutions, the Science Park, and national industry on a cluster of activity in robotics, autonomous and embedded systems.

- *Efforts were made to harness the collective collaborative energy of the universities in the region:* UWE Bristol has a close working rapport and formal collaborations with the University of Bristol in four discipline areas and the West of England LEP (the highest ranking LEP in England). It worked across UWE Bristol to bid for continuation funding through European Regional Development Fund (ERDF) for 'Innovation Accelerator' (iNet-IAP) - overall project value of £4.42m - aiming to help companies prepare for innovation and guide them towards best practice, providing technical, management and marketing support for innovation development using expertise from the iNet-IAP partners, the current South West-iNet membership network and the SW knowledge base. This has been accepted by the Department of Communities and Local Government and, at time of writing, is undergoing European Union appraisal.

7.4   Concluding thoughts

Central Government (Department for Communities and Local Government) has shown tangible support for the continuation of the iNET projects, resulting in a successful bid of 2.4m for a Business Technology Centre in bio-medical applications. The city of Bristol's success in securing the title of European Green Capital for 2015 was developed through formal partnership with UWE Bristol, its chair is a university professor who was also the Director of the Environment iNET, and the university has incorporated sustainability and environmental issues across the undergraduate curriculum.

As is clear from this case study, *the inter-relationships between the private, public and higher education sectors in the Bristol and West of England city-region have been essential in achieving these accolades.* However, the match funding requirements asked by government departments present a real challenge for entrepreneurs in any higher education setting. This is especially where a university is sometimes regarded as little more than a banking pipeline, required to be just a 'non-sticky-minimal-overhead' conduit between Europe, central government and the regions. Through spin-out companies, social enterprises and student-led initiatives, universities can bring real and lasting benefit to regional economies, while allowing an entrepreneurial culture to be tested in real world settings. *However, some of the match-funding requirements and expectations of private sector leverage are unrealistic and will stifle innovation at the time that it needs to be liberated and supported.*

> **"It was the process of gathering views and opinions – internally and externally – and then testing them against the record to date that has proved the most valuable learning."**
> Paul Gough, Deputy Vice Chancellor, University of the West of England

8. Partnering for Entrepreneurial Activity

Professor Anthony Whetton, Vice Dean, Faculty of Medical and Human Sciences, University of Manchester

Total HE students:	40,680
including:	
UK Postgraduates:	7,240
UK Undergraduates:	22,210
International:	11,230

This vignette describes a developing partnership between the National Health Service and a university, demonstrating how common interests are served by the partnership and the ways in which each partner can leverage the other's resources and increase investment in shared strategic objectives.

8.1 The University of Manchester and the Faculty of Medical and Human Sciences

The University of Manchester is one of the UK's largest universities. It is research intensive with a commitment to teaching and social responsibility, The Faculty of Medical and Human Sciences offers a full range of research and teaching for healthcare professionals, including nursing, midwifery, psychology, pharmacy, dentistry and medicine. It has over 8,400 students including 2,300 postgraduate students. Its teaching demands excellent relationships with the National Health Service (NHS) partner trusts to deliver the clinical aspects of the curriculum appropriately. Equally, its research demands clinical context and relevance.

8.2 Operating in a demanding stakeholder environment

Healthcare is a dynamic environment for teaching and research in higher education. The General Medical Council guideline, 'Tomorrow's Doctors', portrays the development of the medical student as a scholar, a scientist, a professional, and a practitioner. The student programme is lengthy (5 years) with many different components. 'Tomorrow's Doctors' states that the "four UK Health Departments have a duty to make facilities in NHS hospitals and other premises available for students to receive clinical training. In undergraduate medical education, students train 'as a scholar and a scientist'.

The 'scholarship and the science' noted above is not only acquired in the university but also in the teaching hospitals and in general practices. The major teaching hospitals are the sites for many research groups in clinical medicine. The senior members of such groups are often university employees and honorary NHS consultants, illustrating a key aspect of the complex relationships between the universities and the NHS. Growing the partnership between the NHS and universities is necessary but not always easy as the two statutory bodies involved have different objectives and expectations.

8.3 The broad entrepreneurial opportunity base

In his NHS 'next stage' review "High Quality Care for All", Lord Darzi recognised the need to improve the interactions between clinicians at the cutting edge of medical research based in hospitals and the university sector. He stated, "We also intend to foster Academic Health Science Centres to bring together a small number of health and academic partners to focus on world-class research, teaching and patient care. Their purpose is to take new discoveries and promote their application in the NHS and across the world."

The Department of Health had already developed its research strategy substantially via the formation of the National Institute for Health Research. This funds healthcare research in the NHS, often supporting university employees. Other major funders of university and NHS-hospital based research

include the Medical Research Council and medical research charities (e.g. the British Heart Foundation and the Wellcome Trust).

8.4 The potential and the challenge

The delivery of high quality education and research in this set of relationships, with multiple stakeholders, is complex. The University of Manchester, with six partnering NHS organisations, became one of five UK designated Academic Health Science Centres after an application process set in train by the NHS Darzi review. The Academic Health Science Centre has taken up the challenge of developing synergistic interactions between the NHS, the university and other partners.

The opportunities for the Manchester Academic Health Science Centre to make a profound contribution to cancer clinical service and research are palpable. In the government-led Research Assessment Exercise 2008, the University of Manchester was rated first in the UK for its cancer studies research. In part this is founded upon a strong relationship with a major tertiary referral centre for cancer, the Christie Foundation Trust. Christie run one of the largest early clinical trial units in the world (again involving university clinical academic staff) based in a new £35 million patient treatment centre opened in 2010. With over 13,000 new patients a year and status as a pre-eminent cancer service provider, the opportunities for increased cancer research activity at the Christie are clear. It is also building a network of Christie radiotherapy centres to bring treatment closer to people's homes - the first £17 million centre opened in Oldham in 2010 and a second £20 million centre opened in 2012 in Salford.

Against this backcloth, some external critiques suggested that the major cancer-related challenge for the centre was that of insufficient critical mass for an inflow of research income from bodies such as the National Institute for Health Research. The University and the Christie Trust therefore focused upon ways to improve the offer with respect to clinical research and its translation into improved patient outcome.

8.5 Reviewing the existing base

A starting point for the review was assessment of the existing university research base and its benchmarking against other major cancer research centres. Despite Manchester's top ranking in the 2008 Research Assessment Exercise, according to the UK Clinical Research Network (UKCRN) data it performs fewer cancer clinical trials than some other major centres. Also, a comparison of the number of UKCRN-badged cancer trials per centre versus the number of cancer patient referrals revealed Manchester was missing an opportunity. Several other centres were more effective at establishing trials within their cancer patient population base. Given the patient numbers available and the facilities for clinical trials activity, radiotherapy, basic cancer research and cancer imaging research, Manchester needed a strategy for further investment.

Strategy development is not a trivial pursuit given the complex governance issues surrounding NHS Trusts and universities. A Trust Board, for example, has to be persuaded of the value of any new venture to its portfolio. From its perspective the basis for partnership must lie in evidence that a more research intensive environment can improve outcomes for patients. In general there is evidence to support this. The outcome for patients enrolled in clinical trials is better than for those not enrolled, even when receiving standard therapy as opposed to experimental therapy. The university meanwhile, has to ensure that investment serves its social responsibility, teaching and learning and research agenda.

8.7 A SWOT analysis and definition of investment needs

The Trust and the university agreed that a review of strengths and areas for investment was necessary. The exercise considered Strengths, Weaknesses, Opportunities and Threats (SWOT). The major threat was that by standing still with no co-investment plan Manchester could fall behind other UK cancer academic centres. Strengths included an effective clinical research network, the presence of a Cancer Research UK (CRUK) research institute, excellent phase one trial and radiotherapy facilities.

To begin the developmental planning process, NHS and University groups were invited to present cases for increased investment. These were reviewed by Christie and University staff, with input from CRUK. Areas where research was internationally competitive were identified and gaps in infrastructure or staffing within them defined. These included women's cancer, personalised medicine, hemato/oncology, radiotherapy, lung cancer and melanoma.

8.9   Leveraging resource

Next, the Christie Trust and the university identified the full costs associated with appointing major research teams in these areas. The true costs could then be reported back to each statutory body involved with a view to gaining appropriate buy-in at senior management level. The approach included an academic case for the new venture with estimates of research income and impact on teaching quality. For the NHS, the impact on clinical service in the short, medium and long term was to the fore.

An entrepreneurial approach, however, involves harnessing resources from a number of stakeholders. Consideration of the core values of a specialist cancer hospital and its partner university clarified overlapping areas of interest. The challenge then became one of identifying clearly how common interests are best served by partnership. Clarity of thought on a common investment strategy and how it might impact on healthcare provision for one partner (NHS Trust) and research, teaching and social responsibility for the other (university) became absolutely essential. But by careful review of prospective partner's needs, in terms, for example, of organisational structure and key strategic developments, synergies could be identified whereby each partner leverages the others resources and strengths in pursuit of their major objectives. By this entrepreneurial process, the objective of training tomorrow's doctor's as scholars and scientists, in line with the General Medical Council requirements, is being clarified, while providing new opportunities for development of research for patient benefit and therefore for serving the wider community.

> **"An entrepreneurial approach… involves harnessing resources from a number of stakeholders. Consideration of the core values of a specialist cancer hospital and its partner university clarified overlapping areas of interest. The challenge then became one of identifying how common interests are best served by partnership."**
> Anthony Whetton, Vice Dean, Faculty of Medical and Human Sciences, University of Manchester

9.   A Risk Based Approach to Curriculum Design

Ian Dunn, Deputy Vice-Chancellor for Student Experience, Coventry University

	Total HE students: 31,045
	including:
	UK Postgraduates: 2,360
	UK Undergraduates: 22,270
	International: 6,420

This vignette considers the creation of a risk-based organizational culture designed to support bottom-up initiatives for changes in curriculum design and the development of student enterprise and entrepreneurship.

9.1   About Coventry University

Coventry University is a forward-looking, modern university with a proud tradition as a provider of high quality education and a focus on applied research. Its students benefit from state-of-the-art equipment and facilities in all academic disciplines including health, design and engineering laboratories, performing arts studios and computing centres. Its city-centre campus is continually developing, and the university is a major presence in the city of Coventry. Through links with leading edge businesses and organisations in the public and voluntary sectors, students access project and placement opportunities that enhance their employability. Times Higher Education Entrepreneurial University of the Year 2012, Coventry University has a reputation for entrepreneurship and innovation.

9.2   Background to the example

The aim of this example is to present the outcomes of work exploring change in curriculum design to support enterprise and entrepreneurship. The central thesis is that *without the opportunity and permission, to take responsibility for individuality at the course level, the course team becomes simply administrators and organisers*. This means that the university, with responsibility for quality assurance and enhancement, needs to place a great deal of trust in the course team. The university also needs to provide them with a framework that is a teaching and learning strategy. Effectively, the university needs to create a risk-based culture with permission to be experimental, whilst providing relevant data to allow the outcomes of the experiments to be measured and evaluated quickly. The university must also develop the ability to act quickly in oversight mode, if it believes that there is any abuse of the permission. Here we will outline a process that has begun at Coventry University. It is entirely locally situated but may provide some hints and tips that others may be able to use.

9.3   The task and key challenges

Historically, curriculum design is centrally managed to ensure that award and credit rules are met, along with other centrally required outcomes. This can result in a distortion of the curriculum, which means that academic subject areas adopt methods that are not best suited to the development of the student as a professional in education and training.

The task was to create a teaching and learning narrative that was able to win large scale staff support, with courses as the dominant unit of academic design and that would lead to significant change resulting

in more satisfied, more enterprising and ultimately better employed students. There is a suggestion that the final plan was thought through and then enacted in one simple instance. There have been a number of smaller steps that are now coming together to form that narrative and are also yielding results.

The ultimate belief is that by creating a culture of permission for the course team to be enterprising, the university is demonstrating to course teams that they can innovate and thus excite the student and can assess for the appropriate balance of skills and knowledge best suited to their subject situation.

A range of challenges and pre-requirements was encountered. These included the need for:
- *Data*: if the project was to be measured, there was a need for data that could be compared on a year for year cycle to demonstrate progress.
- *Outcomes*: activity should only be undertaken if it can be shown to be leading towards enhancement and excellence.
- *Strategy and action*: the need for a modern teaching and learning strategy directly related to the mission, values and corporate plan. The strategy then needs to lead to direct action linked to the classroom. This all needs an output mechanism that monitors progress against targets.
- *People*: an excellent human resource plan is required.
- *Liberation*: all academic subject areas should be liberated to take action, within the defined teaching and learning strategy. This liberation needs to be best suited to their subject area rather than to a general university over-arching plan.
- *A risk-based approach*: the activities are all designed to demonstrate a risk-based approach as an essential element in the introduction of an enterprising curriculum.

9.5   The Coventry story so far....

This section will present an overview chronology of the events that make up this story with little narrative: this will be reserved for later and largely for others to write.

- *July 2010*: NSS overall satisfaction 79%, the VC and PVC (Academic) require all Heads of Department to construct an action plan on how they intend to improve things.

- *September 2010*: redevelopment of the academic and personal tutorial scheme, to incorporate an online employment skill based package. Tutors are to have no more than 8 students and to have an allocation of time to permit both small group and individual time across all three undergraduate years. This work was supported by a range of online resources and a 'short burst' staff development training programme (lunch time sessions that became a standard input mode).

- *September to November 2010*: introduction of a whole university module evaluation scheme. The previous evaluation scheme had been managed by tutors and the results were not regularly and reliably used. The new scheme relies on an National Student Survey (NSS) like set of questions, distributed by student ambassadors during a module occurrence, after about eight weeks. The paper based forms are completed during the class and collected by the student ambassador. The forms are processed centrally and the results, quantitative and qualitative, are returned to the tutor and the head of department within ten days. The tutor has a further five days to post any actions taken as a result of the student feedback.

- *January 2011*: all of the quantitative data were analysed and league table type ranking produced to show overall weighted averages for each department. These are presented in tabulated form with a red, amber, green rating for each question. The results are widely distributed starting with the

academic executive. Green was originally set at 80% satisfaction or greater; this is now modified to 90% or greater.

- *July 2011*: NSS outcome 85% overall satisfaction. Coventry is the second most improved institution in the Sunday Times league table rising 30 places.

- *October 2011*: rewrite of the teaching and learning strategy to reflect the corporate plan, mission and values of the university. The new strategy has five headings, pedagogical approach, research informed learning, employment and entrepreneurship, internationalisation and digital fluency. This approach was adopted by academic board in December 2011.

- *October 2011*: work on redeveloping the careers service structure and strategy. Responsibility for the development of employability skills and internships now lies in the faculty employability units with direct engagement of academics through the academic personal tutorial scheme. Students are surveyed during their final year to explore whether they have graduate level employment and any without become the responsibility of the central careers service. We changed the language from employability to employment.

- *May to June 2012*: developed new course reporting process, sounds dull but essential. The report enables the course team to express their proposed actions but equally that they need Faculty and University management to take action. This is designed to be an approach that is properly based on enhancement but also encourages the course team to take some measured risk.

- *July 2012*: the learning and development team pull off the most amazing staff development process, running facilitated day long workshops for all course teams training more than 1000 members of academic staff in the new approach over a two week period. Course teams are now required to meet twice per year, involving students in the rethinking of their course.

- *September 2012*: NSS overall student satisfaction 86%.

9.6 A specific comment about enterprise

This approach is predicated on distributing the ability to act on course development to the team of professionals responsible for the creation and operation of that course. This deliberate act is in itself risk-based. For the courses to become risk-based and enterprising, it is felt that there needs to be a demonstration of such an approach by the management of the university. Individual staff have access to a broad range of expertise in the teaching of entrepreneurial studies as well as embedding employment skills through the university wide Add+vantage scheme. The course reporting template requires responses against the entrepreneurial agenda. Thus it is the claim of this example from Coventry, that by the actions taken, and the requirement to report against entrepreneurship, the course team is working towards a more entrepreneurial culture.

> **"..by creating a culture of permission for the course team to be enterprising, the university is demonstrating to course teams that they can innovate and thus excite the student."**
> Ian Dunn, Deputy Vice Chancellor for Student Experience, Coventry University

10. Embedding Enterprise in the Curriculum

Professor Mike Thomas, Pro Vice Chancellor (Academic), University Of Chester
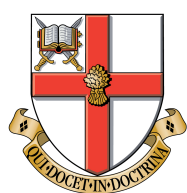
University of Chester	
	Total HE students: 15,215
	including:
	UK Postgraduates: 3,065
	UK Undergraduates: 11,725
	International: 425

This vignette describes the challenges of determining a definition of enterprise that could be commonly accepted throughout a university and of embedding enterprise in a university's teaching and learning strategy.

10.1 Introducing Chester

While celebrating and benefiting from a long history in higher education, with roots that stretch back to the 19th century, the University of Chester is a modern, dynamic and enterprising institution. In keeping with its tradition as a Church of England institution, this distinctive university is a lively and friendly learning community, which fosters a sense of individuality, creativity and personal development – its 16,800 students and 1,400 plus staff actively contribute towards that community as well as benefits from it.

The university has seven academic faculties spread across three campuses, three NHS sites and four Associate Colleges, and makes a substantial impact upon the economy, culture and innovation environment of Cheshire, Warrington, Wirral and North East Wales, contributing some £298 million per year to the region.

Research is integral to the working life of staff, in partnership with local and regional providers of care, while strategic focus is on further development in community/primary care, users and carers support, and inter-professional learning.

10.2 The teaching and learning challenge

A major challenge for any new development in the higher education sector is *the impact of the speed of external change on the ability of the university to plan a strategic response*. In respect of entrepreneurial learning, strategic planning for new development is complicated by the fact that different subject specialities have unique and specific needs. Those needs range from Professional, Statutory and Regulatory Bodies with their legislative requirements, through to maintaining archive materials in subjects such as law and history, through to being up to date and cutting edge with digital technology for those areas such as media studies, computer studies and engineering. These needs demand a differentiated response.

A further complication is that the *enterprise concept is viewed differently by individuals and groups from different academic subject areas or professional support areas*. There are different perspectives on issues such as working with stakeholders, meeting external deadlines, recognising the commercial relevance of enterprise and at another level, its contribution to innovation, imagination and creativity in curriculum design.

10.3 The university's response

A three-part approach was mounted in response to the above challenges:
- The first was to *stimulate a broad approach to stakeholder engagement in enterprise*. This was achieved

through the development of a Staff Enterprise Society and a Student Enterprise Society. The latter was supported by the university's Innovation Centre and covered: the development of students into self-employment; the establishment of a Student Enterprise Society within the Students' Union; the linking of Student Enterprise with Careers and Employability; and the development of a range of specific activities such as boot camps, coffee mat challenges, social enterprise activities, so-called "boiler rooms" and spotlight events.

The Staff Enterprise Society, currently engaging over 80 staff across the university, was set up to provide the base for achieving the second strategic objective by acting as a focal point for those interested in innovation, creativity, imagination and commercialisation and who can also collectively serve to clarify and disseminate the university policy regarding the enterprise agenda.

By these means a cross-university approach has been achieved with improved communication between professional areas and academic departments and faculties.

• The second approach was to *embed enterprise in the university's Learning and Teaching Strategy 2013 – 2016*. This was done by close collaboration (using a bottom up approach) led by the University Academic Quality Team, the Deans' Group and individual staff. For example the Faculty of Arts and Media has as one of its major aims to foster a creative and entrepreneurial environment, virtually, physically and spiritually fit for contemporary challenges. It provides a very good example of how enterprise can be embedded in the Learning and Teaching Strategy which in turn influences faculty m business plans and annual reviews, audits, resource allocation, objective setting and curriculum planning.

• A third approach was *to work with different teams and stakeholders within the university who were interested in creativity, imagine and enterprise so that by 2015 every student would complete a level 5 module (voluntary) looking specifically at entrepreneurial activity*. For those students who wished to continue in that vein, they could complete their dissertation at Level 6 as an optional project in order to develop their level 5 work into a potential business start-up or employability which would then feed directly into the University Innovation Centre who would provide support. This would allow the University to support students in a cross-disciplinary manner and enable them to develop their employability project and their business start-up before they graduate.

10.4   Enhancing understanding of the concept

The above approach provides both problems and opportunities. A key issue is gaining universal acceptance of an overall university definition of enterprise. Although staff have a general understanding of the word it has a specific meaning for each individual; so some therefore may view the word from a negative perspective and some more positively. The issue has partly been addressed by organising staff forums and lunch time sessions exploring enterprise as a concept. But to provide wider evidence base the Innovation Centre carried out a survey of the attitude towards enterprise within the university covering students and staff. This provided the basis for a comprehensive action plan linking Innovation Centre support for the: teaching of entrepreneurial skills; student self employment; individual staff business venturing; and in general the range of commercial activity to be delivered by the university.

10.5   Embedding enterprise in the curriculum

The approach to implementation was to select departments which scored high in annual reviews (from the National Student Survey scores, internal audits, student and staff evaluations, employment outcomes and a variety of other measurements). The Innovation Centre works across the university in support of this and departments work with other departments across faculties. Professional expert support is provided by Careers and Employability and the Work Based Learning Team. There are also good links between the Innovation Centre and the Knowledge Transfer Office. The Postgraduate School has also

developed a reward process and procedures for staff so there is some financial incentive for staff engaging in entrepreneurial activity.

10.6   The transformational impact

Enterprise is now embedded in the university Learning and Teaching Strategy 2013 – 2016. It has a direct impact on faculty and departmental business planning and also reviews, monitoring and auditing processes.

The Student Enterprise Society is hosted within the Student Union and continues to go from strength to strength with approximately fifty five participants in boot camps now running all year within the university. The Enterprise Survey has directly led to an Enterprise Project Plan which looks at teaching enterprise skills, supporting students into self-employment, supporting staff to set up and spin off companies and to develop, overall, commercial activity within the university.

There is also cross-faculty collaboration in entrepreneurial activities between the Faculties of Business, Arts and Media, Health and Social Care, Education and Children's Service and Social Sciences.

10.7   The way forward

Enterprise as a concept first raised its head within the university just under three years ago and from that initial discussion and the support from the NCEE and the EULP Team the University has developed its learning and teaching provision in the last twenty four months with the activities summarised above. It is expected that enterprise will now become so embedded in the University that within the next five years it will be seen to be the third leg in the University's activities alongside research and teaching.

"… enterprise will now become so embedded in the University that within the next five years it will be seen to be the third leg in the university's activities alongside research and teaching."
Mike Thomas, Pro Vice Chancellor (Academic), University of Chester

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11.   Collaboration between Students, Academic and Industry

Mikkel Trym, Director, Copenhagen Innovation and Entrepreneurship Lab (CIEL)

CIEL is an alliance between the University of Copenhagen, the Technical University of Denmark and Copenhagen Business School. Together, these universities have more than 60,000 students.

This vignette describes how hundreds of researchers, teachers and students have become involved in collaborative entrepreneurship initiatives and describes the challenges of creating a culture that will support the entrepreneurship eco-system.

11.1   Introducing the Copenhagen Innovation and Entrepreneurship Lab (CIEL)

At CIEL we work to create excellence in knowledge-based innovation and entrepreneurship through intensive collaboration between the University of Copenhagen, the Technical University of Denmark and Copenhagen Business School. The CIEL alliance aims to demonstrate a new model for collaboration by combining the perspectives of each of the three universities and real life cases to produce innovation with substantial societal impact.

The university alliance was initiated with support from industry and is part of the Danish Entrepreneurial University Initiative. Each of the three partner universities is excellent in its field. However, with the aim to foster entrepreneurial mindset and behaviour, there are many more reasons to collaborate, than to compete. Together, these three large universities in Copenhagen account for 53 per cent of the Danish university sector, having more than 60,000 students and 15,000 PhD students and staff members.

CIEL has established nine novel programmes, applying a wide range of means to leverage innovation and entrepreneurship among the alliance members. The majority are educational programmes targeting both students and staff; such as the Entrepreneurial Excellence Programs delivering new thematic innovation and entrepreneurship education for graduate students across the universities and the Innovation Pedagogics teachers-trainer program. Other activities support the student entrepreneurship eco-system and innovation and entrepreneurship research.

CIEL has proved to be an efficient model for creating high-level projects that are embedded across departments. These novel initiatives have attracted significant interest among staff, students and other universities, including a nomination as being one of the most innovative projects of its kind in the European Union.

11.2   The entrepreneurial challenge

Gradually, the Enterprising Concept is gaining more and more momentum. The number of students, teachers, companies and decision-makers involved is increasing. Hundreds of students are now involved in the student-driven initiatives such as Suitable-for-Business and the Danish Social Innovation Club. Some departments in the Business School and the Technical University have developed a strong entrepreneurial mindset among staff and students. The CIEL steering committee members, consisting of university rectors, are all personally committed to supporting the transition towards a more entrepreneurial university.

Nevertheless, the change is largely occurring despite the core university culture and structures, where a lot of barriers need to be worked on, and new incentives created. The top management is aware of the need for change, but is uncertain on how to prioritize potential areas of action. The university organizations are

generally lacking entrepreneurial leadership, long-term funding, rewards, coordination and integration across management and faculties.

Most of the university staff involved work in isolation of each other, whereas the students are more organised – although they are not aware of their newly gained power.

11.3   Specific objectives and intended outcomes

The project will seek to connect the dots – the vast number of internal and external champions – those great resources that can create the entrepreneurial tipping point through the creation of a collaborative movement. The aim is to create momentum for substantial organisational change. Initially, a number of meetings among opinion leaders, champion staff and change agents will be organized to identify required actions, including the elaboration of a joint manifesto and publicity in a national newspaper.

Simultaneously, the university management will undertake a process of identifying their current situation and potential areas of action, based on the EU/OECD Guiding Framework for Entrepreneurial Universities. A new self-assessment guideline will be used, created with support from NCEE, to assist universities to determine their own strengths, weaknesses and find ways forward.

11.4   Obstacles and opportunities

The process of institutional and cultural change does not happen overnight. The pace of change and the nature of the current incremental change in universities are major obstacles, in particular, for the large traditional research university. It is a great opportunity to speed up the change process through collaboration, where a mutual sense of direction and alertness is created. It seems possible to create awareness and substantial change of norms through a collaborative movement, whereas, a substantial change of the core organisational culture also involves a large portion of continuous entrepreneurial leadership and management commitment.

Strong leadership and good governance is crucial in order to develop an entrepreneurial culture. The CIEL programs have proved very efficient in creating novel and viable entrepreneurial activities, embedded at departmental level and with a high degree of ownership.

Further attention needs to be given to strengthen the core university leadership and governance, in particular, at faculty and middle management level. It seems that the Guiding Framework offer a sound starting point for such a working process. In addition, new governance structures of the entrepreneurial activities will seek to strengthen the leadership commitment among faculty and middle management.

11.5   Transformational impact

It is still too early to describe the long-term transformational impacts. It is, however, quite evident that collaboration among institutions and stakeholders, and the creation of critical mass, is a very efficient tool in fostering a more entrepreneurial mindset in the organisations. It also seems reasonable to assume that the broad awareness about the importance of entrepreneurial culture and behaviour will eventually change the core structures of the university.

Last but not least, we should not forget the main collaborative impact in the field of entrepreneurial education; the cross-disciplinary approach is highly motivating for both students and researchers and produces new and often surprising solutions for industry and society at large.

> **"The process of institutional and cultural change does not happen overnight. The pace of change and the nature of incremental change in universities are major obstacles….It is a great opportunity to speed up the change process through collaboration, where a mutual sense of direction and alertness is created."**
> Mikkel Trym, Director, Copenhagen Innovation and Entrepreneurship Lab (CIEL)

APPENDICES

Appendix A: The University Entrepreneurial Scorecard
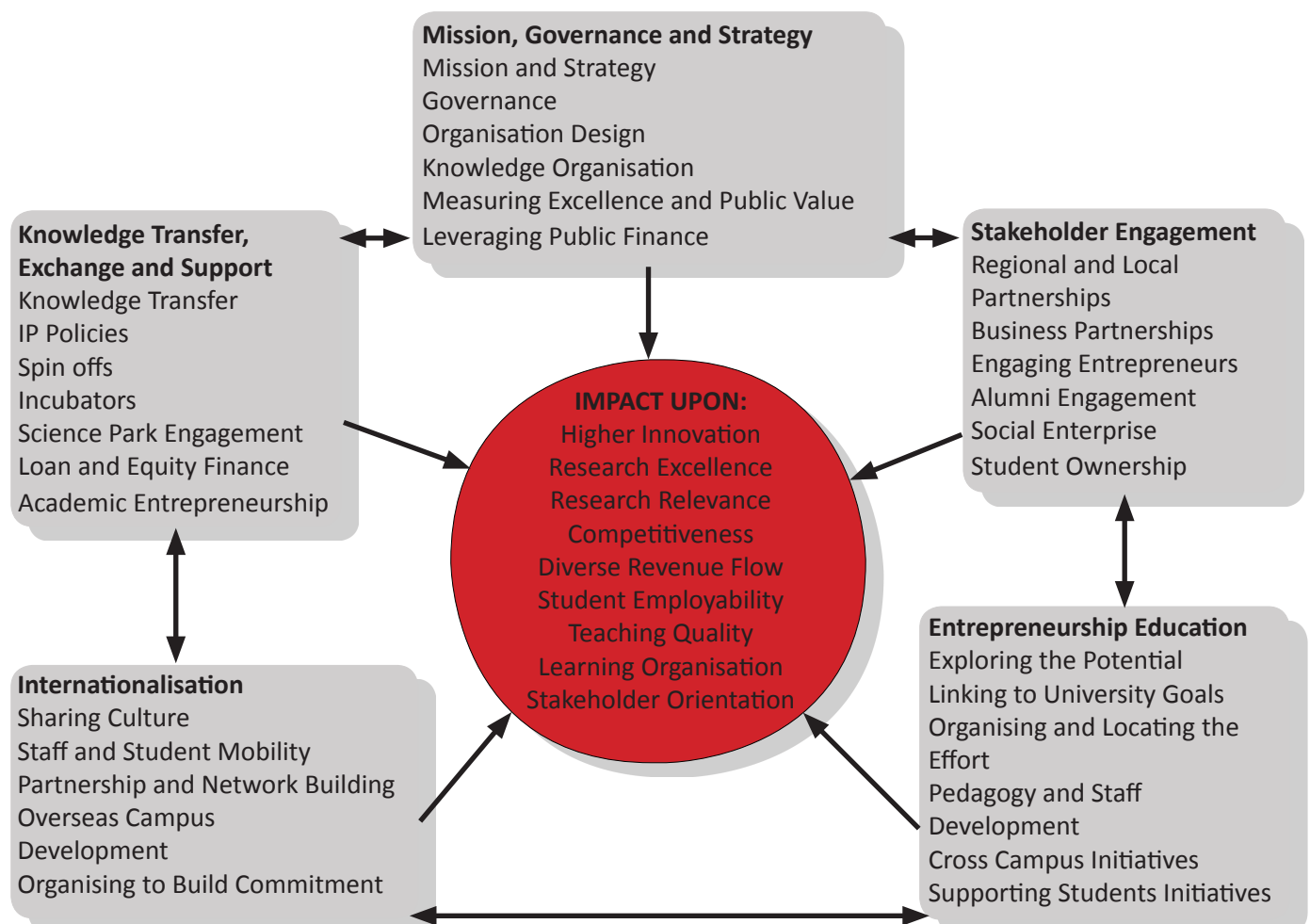## (Exploring the Entrepreneurial Potential of a University)

The Scorecard on the following pages embraces all of the issues associated with a strategic leadership approach to embedding enterprise and entrepreneurship in the university. It can be used for a comprehensive analysis of the university or for a more focused review of a number of key areas of interest to readers and exploration of areas of potential synergy (see figure below).

A version of this scorecard has been used by entrepreneurship educators in development programmes to test their knowledge of entrepreneurship activity in the university in order to form a basis for their 'embedding strategies' and/or to provide an impressionistic view of the 'state of play' based upon existing personal knowledge.

It has also been used, not as a formal scorecard, but as an informal checklist for discussions with staff and students across the university in an exploration of areas of potential synergy. 'Scoring' is therefore optional. As the diagram below demonstrates, the main focus is upon how key over-riding objectives of the university may be enhanced by the harmonising of personal and institutional enterprise and entrepreneurship activity.

If the Likert scale is used, then the points can be connected up to give a visual display of areas of strength and weakness.

Exploring Synergies in Entrepreneurial University Development The Potential Contribution to Key Strategic Goals

Mission, Governance and Strategy
Mission and Strategy
Governance
Organisation Design
Knowledge Organisation
Measuring Excellence and Public Value
Leveraging Public Finance

Knowledge Transfer, Exchange and Support
Knowledge Transfer
IP Policies
Spin offs
Incubators
Science Park Engagement
Loan and Equity Finance
Academic Entrepreneurship

Stakeholder Engagement
Regional and Local Partnerships
Business Partnerships
Engaging Entrepreneurs
Alumni Engagement
Social Enterprise
Student Ownership

IMPACT UPON:
Higher Innovation
Research Excellence
Research Relevance
Competitiveness
Diverse Revenue Flow
Student Employability
Teaching Quality
Learning Organisation
Stakeholder Orientation

Internationalisation
Sharing Culture
Staff and Student Mobility
Partnership and Network Building
Overseas Campus Development
Organising to Build Commitment

Entrepreneurship Education
Exploring the Potential
Linking to University Goals
Organising and Locating the Effort
Pedagogy and Staff Development
Cross Campus Initiatives
Supporting Students Initiatives

The University Entrepreneurial Scorecard
(Exploring the Entrepreneurial Capacity of a University)

		Low				High
Strength of:		**1**	**2**	**3**	**4**	**5**
CONCEPT, VISION, MISSION AND STRATEGY						
1.	Strategic commitment in the university's vision statement to the 'imaginative use of knowledge and development from research					
2.	Strategic commitment to achievement of university status via wide stakeholder credibility					
3.	Clarity of recognition of the scholarship of relevance and integration in the strategy					
4.	Clarity of shared concept of enterprise and entrepreneurship across the university					
5.	Degree to which Enterprise and Entrepreneurship are seen as central in University strategy					
6.	Degree to which innovation in the broadest sense is seen as central to all university work					
7.	Strategic commitment to knowledge exchange					
8.	Strategic commitment to local and regional development					
9.	Strategic commitment to business development and partnerships					
10.	Strategic commitment to leveraging public and fee income					
11.	Strength of university strategic and practical focus upon the problems and opportunities of society					
12.	Commitment to a broad stakeholder view of university excellence (as per the public value concept)					
GOVERNANCE						
13.	Understanding of, and support from, the VC/Principal and executive team for the entrepreneurship/enterprise concept					
14.	Level of understanding of the relevance of the entrepreneurial agenda by the Council or Board					
15.	Level of understanding of the relevance and agenda (and active engagement) of the Chairman of the Board or Council in this					
16.	Strength of entrepreneur membership of Board or Council					
17.	Level of active engagement of entrepreneur members of Board or Council with the university					
18.	Active engagement of university staff in local/regional economic, social and cultural development					
19.	Level of trust and active relationships between professional staff charged with external links and the academic staff					
20.	Existing working relationships and synergies between those engaged in employability, business development, knowledge exchange and regional and local development					
21.	Level of commitment of faculty heads and departments to the entrepreneurial agenda as above					
22.	Overall active leadership of the enterprise and entrepreneurial agenda in the university					

		Low				High
Strength of:		1	2	3	4	5
ORGANISATION DESIGN						
23.	Organisation design to facilitate and support bottom-up entrepreneurial and innovative behaviour					
24.	Decentralization in decision making					
25.	Devolvement of responsibility for the employability, knowledge exchange, local and regional interface and business and organization development agendas to departments					
26.	Degree to which bottom-up risk taking behavior is rewarded and protected in general					
27.	Reward systems for wider forms of innovation in the university					
TRANSDISCIPLINARITY						
28.	Levels of active co-operation between faculties and departments in teaching and research					
29.	Numbers of multidisciplinary degrees					
30.	Numbers of transdisciplinary research and/or teaching centres focused upon societal issues					
31.	Number of departments engaged in vocational/professional development areas					
32.	Level of commitment across the university to creating opportunities for students to explore the relevance of their knowledge					
33.	Levels of intellectualism (as opposed to scholasticism) in the university					
FINANCIAL LEVERAGE						
34.	University commitment and capacity to raising revenue from non-fee and traditional public sources					
35.	Existing ratio of private to fee and public funding					
36.	Delegation of revenue raising activity to departments (with targets)					
37.	Proactivity of deans and faculty heads in fund and revenue raising					
PUBLIC VALUE & STAKEHOLDER ENGAGEMENT						
38.	Focus across the university on areas of societal and cultural concern					
39.	Degree to which university assesses its value on the basis of wide legitimacy with stakeholders					
40.	Active partnerships with key regional stakeholders across the university					
41.	University active engagement with individual SMEs					
42.	University active partnerships with SME associations					
43.	Level of active engagement of arts and humanities departments in regional culture initiatives					
44.	Level of consultancy activity (and revenue from) across the university					
45.	Relative scale of R&D funded work with business					
46.	Strengths of students interface (across faculties) with local business and civic organisations					

Strength of:	Low 1	2	3	4	High 5
47. Numbers of degrees with active business and professional engagement					
48. Strength of university extra mural training partnerships with external organisations excluding business school					
49. Engagement of the business school in SME and local enterprise development					
50. Active partnerships with local vocational colleges					
51. Level of active engagement with local entrepreneurs in teaching and research					
52. Status given to local entrepreneurs through 'associateships', 'fellowships', professorships or teachers of practice					
53. Engagement across the university in Social Enterprise					
54. The university as a learning organization (porous to active learning from a wide range of sources)					
ALUMNI					
55. Alumni office and its related activity across the university					
56. Ability of alumni department to identify and build relationships with entrepreneurs locally, nationally and internationally					
57. Active engagement of alumni in the university					
KNOWLEDGE EXCHANGE AND INCUBATION					
58. University technology transfer and knowledge exchange activity					
59. Degree to which knowledge transfer and exchange is embedded in departments					
60. Level of active student and staff engagement with science park companies					
61. Openness of IP policy for staff and students					
62. Support office for IP and licensing					
63. Numbers of patents and licenses and revenues received					
64. Student engagement in knowledge transfer activity					
65. University rewards for knowledge transfer performance					
66. Doctoral student exposure to the relevance of their research to the 'real world'					
67. Staff numbers with business ownership stakes or stakes in social enterprise organisations					
68. Numbers of spin-offs recorded					
69. Support for spin-off activity					
70. Incubator support physical and/or virtual					
71. Clarity in incubator targeting					
72. Clarity in performance indicators					
73. Incubator mentoring and service support					
74. Joint venture funding partnership arrangements – angel connections					
75. Links to and/or provision of, special loan arrangements for graduate/ staff enterprise					
76. University engagement in public/private seed capital activity					

Strength of:	Low				High
	1	2	3	4	5
INTERNATIONALISATION					
77. University focus upon internationalisation					
78. Level of activity					
79. Levels of international staff					
80. International research and development links					
81. Engagement with local players in international activity					
82. University support system for international activity					
83. Impact of internationalism on the curriculum of the university					
84. Revenue from international activity					
85. Numbers of joint ventures with overseas universities					
86. Overseas licenses and joint degrees					
87. International campus initiatives					
88. Overseas alumni relations					
89. Student exchanges					
90. International distance education					
91. International business partnerships					
ENTERPRISE AND ENTREPRENEURSHIP EDUCATION					
92. Entrepreneurial skills agenda accepted across the university					
93. Each department with entrepreneurial curriculum champion					
94. Entrepreneurship education embedded in each department curriculum					
95. Entrepreneur self-efficacy training embedded across the university					
96. Start up new venture training availability for all staff and students					
97. Enterprise educator training opportunity for all staff					
98. Student entrepreneurship society					
99. Active student engagement and leadership in the entrepreneurship field					
100. University personal development contract and related activity with students in general					
101. Central support unit activity for entrepreneurship and enterprise education					
102. Placement activity in SMEs and small organisations across the university					
103. Careers services engagement with SMEs and entrepreneurship training					
104. Employability agenda addressing the self-employment and entrepreneurship option					
105. Use of external partnerships in enterprise training					
106. Wide use of enterprising pedagogies across the university (embedded in teaching and learning strategy?)					
107. Capacity for entrepreneurship education beyond the business school					
108. The university as an entrepreneurial organisation					

Appendix B: Background Readings

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Gibb, A.A., Haskins, G., Hannon, P., and Robertson, I. (2012) 'Leading the Entrepreneurial University. Meeting the Entrepreneurial Development Needs of Higher Education Institutions'. A National Council for Entrepreneurship in Education (NCEE) Policy (Updated) Paper – *see NCEE website*

Gibb, A. A. (2012) 'Exploring the synergistic potential in entrepreneurial university development: towards the building of a strategic framework'. Annals of Innovation & Entrepreneurship 2012, 3: pgs 1-24 - *see NCEE website*

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Other papers in the EULP series available from NCEE

The papers listed below illustrate some of the progressive thinking behind the Entrepreneurial University Leaders Programme. They can be downloaded from http://eulp.co.uk/publications/

1. **(2005) 'Towards the Entrepreneurial University. Entrepreneurship education as a lever for change'.**
   This paper demonstrates a broad model of entrepreneurship and its relationship to personal enterprise. It defines these concepts and their links to innovations of all kinds. It also sets out a range of associated personal competencies for development and describes three models of an entrepreneurial university.

2. **(2009) updated (2012) 'Leading the Entrepreneurial University. Meeting the entrepreneurial development needs of higher education institutions'.**
   By way of a substantial review of the literature, this paper sets out the major challenges to, and opportunities for, leadership of universities arising from changes in the global environment and the implications for the entrepreneurial design of the higher education sector. The focus is upon the impact of a growing complex and uncertain environment on key areas of university activity and the specific leadership challenges involved.

3. **(2012) 'Exploring the synergistic potential in entrepreneurial university development: towards the building of a strategic framework'.**
   This paper develops a strong basic framework for reviewing the entrepreneurial development capacity of a university by exploration of existing and potential enterprising and entrepreneurial activity in five key areas of: Strategy, Governance, Organisation and Leadership; Knowledge Exchange; Stakeholder Relationship Development and Partnership (local, regional. national and international); Enterprise and Entrepreneurship Education; and Internationalisation. It describes the potential benefits of bringing the various activities together and introduces a comprehensive scorecard.

4. **(2013) 'The University of the Future. An Entrepreneurial Stakeholder Learning Organisation'.**
   This paper explores in some detail the 'specifics' of turbulence in the Higher Education 'task environment' in the UK and England in particular and the immediate challenges and opportunities these pose. It describes the responses and demonstrates how universities are adopting a wider entrepreneurial stakeholder model of development.

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