

Russell Group response to Professor Sir Tim Wilson's Review of Business-University Collaboration

Summary

- The Russell Group is pleased to contribute evidence to Professor Sir Tim Wilson's Review of Business-University Collaboration. Russell Group universities are **partners of choice** for thousands of leading businesses in the UK and internationally.
- The UK's world-leading institutions play a crucial role in helping the UK survive the economic downturn and work its way back to economic growth, **by engaging closely with business, enhancing skills and competitiveness**, and generating major new products and world-beating spin-out companies. A report by the Russell Group shows that **groundbreaking research** conducted in Russell Group universities has resulted in far-reaching impacts, and successful commercialisation requires **sustained long-term investment in basic research**, often over many years or even decades.¹
- To address the UK's needs for accelerating technology and innovation, there is real value in **building on the strengths, competitive advantage and capacity of the UK's existing research base**. In straitened times, it is important that Government funding continues to support research-intensive universities in their innovation and knowledge transfer/exchange activities.
- Russell Group universities offer a **research-led learning environment** which helps students develop their employability skills. As well as drawing on the multi-disciplinary, research-led learning experience they provide, Russell Group universities are working to **embed employability further into the university culture**.
- The UK's leading research-intensive universities **boost the performance of local knowledge-intensive businesses**, and incentivise additional knowledge-intensive businesses to locate nearby. The benefit to businesses from co-location is higher productivity and profitability, as demonstrated by OECD research on **clusters**.²

¹ Russell Group *The economic impact of research conducted in Russell Group universities* (2010)
<http://www.russellgroup.ac.uk/russell-group-latest-news/121-2010/4134-economic-impact-of-research-at-russell-group-universities/>

² OECD *Competitive regional clusters: national policy approaches* (2007)

1. Section 1: 'Historical context'

- 1.1 In the past, reviews of university-business collaboration and innovation in the UK have systematically shown it is a myth that the UK is good at research but not so good at innovation – this is a generalisation that simply does not hold true anymore. Collaboration and exchanging knowledge and skills with business is a core part of the missions of Russell Group universities. Russell Group universities are supporting businesses in developing and commercialising new technologies in a variety of ways, including:
- (a) Technology exploitation via technology transfer offices, or often via dedicated technology transfer companies. An example is Imperial Innovations, which in 2008/9 invested over £14m in 20 companies, and external investment in its portfolio of companies was £41m in 2008/9, rising to £75m in 2009/10.
 - (b) Provision of various kinds of incubation facilities for new companies, along with investment and knowledge transfer/exchange support. An example is the University of Warwick, which has a 'virtual tenancies' programme that allows emerging companies to access the support and facilities at Warwick's science park without having to physically relocate.
 - (c) Incentives to access research expertise. Most Russell Group universities have knowledge transfer/exchange secondment programmes in place. In addition, the universities of Liverpool, Nottingham, Glasgow and Newcastle have awarded local businesses thousands of pounds worth of "innovation vouchers", enabling small companies to access research expertise through consultancy or collaborative projects.
- 1.2 Russell Group universities are partners of choice for thousands of leading businesses in the UK and internationally. Data from HEFCE's Higher Education Business and Community Interaction survey showed that in 2009-10:
- (a) Russell Group universities between them received £671m in university contract research income from commercial businesses and charities.
 - (b) Russell Group universities generated over £51m in intellectual property income and generated spin outs with a combined turnover of over £382m.
- 1.3 Knowledge transfer/exchange activity within leading research-intensive universities is very efficient and effective. According to a recent survey by the UK Innovation Research Centre, academics at Russell Group institutions are particularly likely to have taken out a patent, licensed their research to a company or formed a spin-out than academics at other UK institutions.
- 1.4 However, universities often face barriers in transforming ideas into social and economic impact due to the risks perceived by the private sector regarding investing in new developments. Government can act as an invaluable "enabler" of such developments, thereby securing future private investment and growth many times the initial investment. The Higher Education Innovation Fund (HEIF) in England and Northern Ireland, and the Knowledge Transfer Grant and Horizon Fund in Scotland, are major public funding sources underpinning the highly successful knowledge transfer/exchange activities undertaken by Russell Group universities. These funds are an essential component of the UK's innovation system, enabling institutions to share high quality innovation with businesses, diffusing knowledge into the economy and creating economic benefit for the nation.
- 1.5 Russell Group universities have used previous HEIF and equivalent funding rounds to continue to increase their knowledge exchange activities. HEIF and equivalent

funding has been, and will continue to be, critical in underpinning this success. At a time of stringent budget constraints, it is important to understand and to emphasise the value of HEIF and equivalent funding as a dedicated resource for knowledge exchange activity.

2. Section 2: 'New context'

- 2.1 As the Government has recognised, research and innovation are vital to the future of the UK economy. The UK's world-leading institutions have a crucial role to play in helping the UK survive the economic downturn and work its way back to economic growth, by engaging closely with business, enhancing skills and competitiveness, and generating major new products and world-beating spin-out companies. The Government plays a valuable role in facilitating the role of universities in this.
- 2.2 To address the UK's needs for accelerating technology and innovation, there is real value in **building on the strengths, competitive advantage and capacity of the UK's existing research base**. In straitened times, it is important that Government funding continues to support research-intensive universities in their innovation and knowledge transfer/exchange activities. Investments should complement rather than compete with the current capabilities of the UK's research base, and be considered on a national (rather than regional) scale. Resources should be focused where there is most competitive advantage to be gained from integrating research, teaching and translation. The Government should also continue to consider how new **TICs** will fit within the existing research environment.
- 2.3 The Government's recent changes to the allocation of HEIF will help to ensure Russell Group universities in England build on successful existing initiatives, and fulfil their potential in knowledge transfer/exchange activities. Although a cap remains on the amount of HEIF funding available to any single institution – restricting the ability of research-intensive universities to receive funding in proportion to the full scale or excellence of their knowledge base – the Government's changes to the allocation of HEIF are positive moves in the right direction.
- 2.4 However, with a more proportionate level of HEIF funding, Russell Group universities in England could not only fulfil their potential in knowledge transfer/exchange activities, but also help other institutions to do so. There are already successful collaborative models in existence where universities work together to generate economic benefit, with smaller and less research-intensive universities accessing the knowledge transfer/exchange expertise and seed/venture capital funds within larger and more research-intensive universities.
- 2.5 The UK also **needs more investment in turning innovations into successful products and services** – both at the embryonic testing stage through 'proof of concept' funds and through tax breaks that encourage more venture capital investment. Reforms to the tax regime could encourage more investment in early stage high-tech companies. This would help address the UK's problem in accessing proof of concept funds.

3. Section 3: 'Skills and Knowledge'

- 3.1 Surveys by the CBI, CIHE and IoD all highlight broader 'employability' skills or 'soft' skills as employers' most important requirement for graduate recruits – more so than job specific or technical skills. The focus on 'employability' skills suggests that abilities such as independent and critical thinking, communication skills, problem solving and an entrepreneurial attitude are those which are prioritised by employers. It is important

to bear in mind that businesses hire not only highly-skilled graduates, but also highly-skilled postgraduates, and both groups make significant contributions to a business's skill set and absorptive capacity.

- 3.2 The *thinkpiece on knowledge and skills* acknowledges that we need to consider the differences between degree programmes, and that the student experience will differ between studying at a research-intensive university and one with a different mission. Russell Group universities offer a **research-led learning environment** which helps students develop their employability skills. Graduates and postgraduates from Russell Group universities are informed and supported by exposure to international research excellence and leading thinkers in their fields, world-class libraries and facilities, and an intelligent and motivated peer group. Through this experience they learn to take a self-reliant, independent approach to learning and tackling new problems. There is strong evidence that suggests there are significant benefits from research-led learning. Three broad advantages include:
- the motivation and development of students as a consequence of exposure to expert subject matter;
 - promoting the value of enquiry and 'deep' approaches to learning;
 - helping to develop transferable skills through engagement with research tools and processes.³
- 3.3 The UK's leading research-intensive universities are also characterised by their **multi-disciplinary environment** and ability to tackle research challenges on a broader, wider scale. As the *thinkpiece on knowledge and skills* points out, workplaces are interdisciplinary contexts. Performance in the work place may be enhanced if employees can identify both the generic and the subject-specific in their skill-set. Cardiff University's Innovation and Engagement Strategy actively encourages the development of Strategic Partnerships with relevant external organisations. Such arrangements are considered where both parties can see value in working together over an extended period, often across a number of disciplines, and are not always dependent on financial arrangements such as large research contracts. One example of a strategic partnership is with the Office for National Statistics (ONS), based in South Wales. As a major local employer, ONS is a frequent destination for Mathematics graduates.
- 3.4 A key aspect of developing employability skills for many students is the opportunity to gain first-hand experience of the workplace during the course of their studies. The CBI has placed great emphasis on the advantages of **workplace experience** in helping students to understand what it is like to work at graduate level, what skills they will need, and how to apply their learning.⁴
- 3.5 Placements have benefits for both student and employer, not simply in terms of the impact a student may make during their placement, but in terms of the student's work after graduating. The placement can be understood as a trial for the employer to see if they like the student, but it also offers the student the opportunity to discover if they really do enjoy the job. This means that when considering whether to employ the placement student full-time, both student and employer have a much clearer picture of how successful this is likely to be for both parties.

³ Blackmore, P. and Fraser, M., "Research and teaching: making the link" in Richard Blackwell and Paul Blackmore (eds.) *Towards Strategic Staff Development in Higher Education*, Open University Press (2003)

⁴ CBI and UUK *Future Fit* (2009), p.6; CBI *Ready to Grow* (2010) p.25.

- 3.6 Students at Russell Group institutions have considerable opportunities to engage in such placement schemes and other arrangements that offer them experience of the workplace. Many degree courses at Russell Group universities incorporate work placements as a central part of the student's learning experience, and even where these are not a credit-bearing aspect of the programme, students are encouraged to take placements to develop their understanding of academic knowledge. There are many schemes based around providing students with access to opportunities, sometimes by the university providing funding for students to work on a placement that would otherwise be unpaid, as this enables students to gain valuable experience. The University of Manchester offers its law students an innovative form of workplace experience that also benefits the local community. The University of Liverpool Law School students offers *pro bono* legal advice under the supervision of professionally qualified legal practitioners. The University of Warwick offers a bursary scheme for work experience, and the University of Birmingham offers opportunities for placements with industry partners.
- 3.7 In some cases Russell Group universities offer **courses that develop particular skills valued by employers**, which contribute credits toward the award of a degree but are not necessarily specific to any discipline. Two notable cases where Russell Group institutions have provided such courses include the LSE 100 course and the Career Management Skills modules at the University of Manchester. In other cases, **employability is explicitly built into course curricula**. Formal accreditation offers students an important means of demonstrating the skills which they have gained through their degree. Employability skills form a core part of engineering courses at the University of Birmingham, and students studying computer science at the University of Bristol can opt for an accredited unit in Career Management Skills.
- 3.8 Russell Group universities also provide a student experience which supports and encourages **extra-curricular activity**. Employers value students' participation in extra-curricular activities, for not only demonstrating their ability to manage their time as they engage in activities not directly part of their degree, but also as it offers them an opportunity to gain experience of responsibility.⁵

4. Section 4: 'Efficiency of the interface between students, universities and employers in graduate recruitment'

- 4.1 The careers services within Russell Group institutions play a key role in maintaining relationships with employers and ensuring that opportunities are presented to students. As the recession has impacted on the numbers of new vacancies, the role of careers services has become even more crucial, in developing new initiatives to provide advice and guidance to students and ensure that their graduates have the best possible start to their career.
- 4.2 Russell Group universities offer a large number and range of careers-related events to help put students in contact with graduate employers. This includes making students aware of careers and sectors they may not have previously considered, particularly in STEM subjects. The following are just a few examples of initiatives undertaken in Russell Group universities:

⁵ As mentioned in the London Stock Exchange's Graduate Programme, 2010.

- The University of Birmingham’s Careers and Employability Centre has issued a report for students on graduate employment and the impact of the recession with helpful information and advice.
- Cardiff University’s Graduate Employment Advice Centre is a drop in centre offering personal advice for all Cardiff graduates. All EU/UK graduates are able to access resources in the centre. Cardiff University also offers a number of connections to graduate recruiters both through the GO Wales programme⁶ and the various careers fairs and events that are run through the course of the academic year.
- Imperial College’s Careers Advisory Service has introduced more targeted information to help students who may be concerned about the current economic downturn.
- The University of Leeds has a dedicated careers centre that offers a free online recruitment service for employers as well as a number of other cost-effective services, including lunchtime and early evening presentation opportunities and employer-led talks and workshops which are promoted to students for free.
- The University of Liverpool runs a “Graduate to Merseyside” scheme which provides high-quality paid internships for graduates within Merseyside-based SMEs. Managed by the University’s Careers and Employability Service, in partnership with Liverpool Hope University.

4.3 As well as drawing on the multi-disciplinary, research-led learning experience they provide, Russell Group universities are working to further **embed employability into the university culture**. It is important that students can recognise the employment skills which a research-led learning experience has helped them to develop, and that they can demonstrate and articulate these skills to employers. The University of Manchester has developed the Manchester Matrix, a list of attributes that all Manchester graduates should demonstrate. The Matrix specifically recognises that one of the purposes of a Manchester degree is to prepare graduates for professional and vocational work. Another example is UCL’s ‘Education for Global Citizenship’ programme. At the University of Leeds, the Leeds for Life scheme offers an innovative mechanism by which a Russell Group university is helping its students to demonstrate a broader range of skills to employers.

4.4 The *thinkpiece on graduate recruitment* calls for an awareness campaign amongst the local business community by a university, and that “retaining legacy systems and attitudes because of their familiarity will meet neither the talent or diversity needs of companies...” While we agree that more work needs to be done to strengthen and build productive relationships with business, it should be acknowledged that the UK’s universities already work constructively and successfully with businesses, both local and further afield, to develop their curricula, and in some cases provide tailor-made courses for businesses. For example, the University of Southampton works with a commercial partner in delivering a custom-made training course for the commercial partner’s staff members. Cardiff University has worked with Legal and General since 2002 to deliver medical training for medical underwriters and claims assessors. The content and structure of the courses has been adapted over time to accommodate the changing needs and requirements of L&G.

⁶ GO Wales is a pan-Wales employability programme funded by the Welsh Government and the EU. The programme promotes and supports graduate employment in Wales, primarily in the small business sector.

Legal and General's view

"The on-going collaboration between L&G and Cardiff University to develop and deliver accredited courses for underwriting and claims specialists put us head and shoulders above our competition."

Senior Operations Manager, Claims and Medical

- 4.5 Therefore, we consider that a long-term strategy to build on existing successes, and to create new relationships with business, would be far more fruitful than one-off awareness campaigns.

5. Section 5: 'Interventions in enterprise and professional skills development'

- 5.1 One of the key skills that employers value in graduates is an understanding of business and an entrepreneurial attitude. The CBI reports that business and customer awareness is one of the most important employability skills in the eyes of employers, and that furthermore it is one of the areas where employers are least satisfied with graduate competencies.⁷ An entrepreneurial attitude is even more important in today's economic environment, and the ability to deal with uncertainty.
- 5.2 The enquiry-based learning model in Russell Group institutions helps to develop in students an innovative and independent approach to problem solving which is fundamental to success in business and enterprise. Russell Group universities have been proactive in responding to employer demand by ensuring that their students have the **opportunity to access enterprise education and develop business experience**. Almost all Russell Group universities, for example, have Students In Free Enterprise (SIFE) groups set up. SIFE offers students a chance to develop their skills to ensure they are ready for employment, join a network of like minded people, have direct contact with employers and have a lasting impact on their community.⁸
- 5.3 University enterprise societies perform a similar function to SIFE groups. Enterprise societies can provide seminars and lectures for aspiring entrepreneurs, as well as competitions to allow students to hone their business skills while making contacts with – and often receiving sponsorship from – leading employers. Rajeeb Dey, founder of Enternships.com, was the longest-serving chair of the Oxford Student Entrepreneurs society, and attributes his current success to the experiences he had while at the University of Oxford. Oxford Entrepreneurs currently receives sponsorship from commercial partners including Bain & Company, Credit Suisse, Linklaters, Microsoft and Teach First.
- 5.4 Entrepreneurship is fostered at Russell Group universities through a variety of mechanisms.
- Newcastle University has a variety of interconnecting schemes that teach and support students in enterprise.
 - The University of Edinburgh and University of Glasgow engages with the Scottish Institute for Enterprise (SIE), which has several paid interns based in the university developing projects and working with subject areas and student groups.⁹

⁷ CBI *Ready to Grow* (2010) p.25.

⁸ See www.sifeuk.org/

⁹ See <http://www.sie.ed.ac.uk/>

- The University of Liverpool runs a Graduate Enterprise Centre located in Liverpool Science Park in collaboration with Liverpool John Moores and Liverpool Visions. The Centre provides recent graduates with business support for company start-up, meeting space and valuable networking opportunities.
- Queen's University Belfast runs modules on entrepreneurship that are structured so that students are introduced to the entrepreneurial process in a variety of organisational contexts, and are encouraged to reflect upon and critically evaluate the concepts underpinning entrepreneurship and innovation.
- Cardiff University aims to instil graduates with entrepreneurial skills and aptitudes and give them the opportunity to put these into practice. To this end, Cardiff University has for the past 4 years been building a programme of extracurricular enterprise education and support for students and graduates coordinated by the Student Enterprise team. Students can try out some 'test trading' with micro-businesses at Market Place events held at Christmas and in the Spring semester, demonstrate their entrepreneurial flair in the Ignite 24 hour challenge or assess the commercial potential of new innovations in the i-Solve programme. i-Solve brings together interdisciplinary teams of postgraduate students to investigate the commercial potential of technology arising from University research.
- The University of Edinburgh has created a class-leading programme of dedicated support for student enterprise called Launch.ed which includes an Accelerator pipeline programme for student businesses with high growth potential. The package of support includes £5K to allow the business to acquire professional advice and services and around 80% of the companies supported over the past 5 years are still trading.
- University College London's centre for entrepreneurship and business interaction was formed in 2007, and concentrates on stimulating entrepreneurship among staff, students and the wider local community, and offers extracurricular programmes, business support, training in starting businesses and small company management. Last year, 2,500 students participated in an Advances entrepreneurship activity and nearly 200 local entrepreneurs received mentoring, student consultancy or other support.

6. Section 6: 'Exploiting the research/innovation capability of business and universities through collaboration'

- 6.1 It is noted in the *thinkpiece on cultural change*, that "the result of this diversity of missions is that, internationally, the UK university sector is not just admired for the excellence of its research-intensive universities, but also for the strength and quality of the sector as a whole." While we agree that diversity of the UK's higher education sector is one of its greatest strengths, the role of the UK's leading research-intensive universities in contributing to the UK's innovation, productivity and growth performance should not be underestimated, or underplayed.
- 6.2 Leading research-intensive universities are successful in attracting inward investment from international investors. The *thinkpiece on cultural change* notes that UKTI is "in a unique position to work with universities to increase this inward investment in research" – but it is important to acknowledge the success and progress that has been made to date by the UK's leading research-intensive universities. Examples include:
- Microsoft established its European research centre at the University of Cambridge

- Nokia has a long-term programme of nanotechnology research projects with Cambridge University and in human-computer interaction research with the University of Glasgow.
 - The Bill and Melinda Gates Foundation has made major investments in research into HIV vaccine development at Imperial College London and at University College London.
 - Unilever Plc has a long standing research partnership in high-throughput materials chemistry with the University of Liverpool's Centre for Materials Discovery.
 - In Wales a tripartite Joint Venture between European Aeronautic Defence and Space Company N.V. (EADS), Welsh Government (WG), and Cardiff University has been incorporated to support early stage R&D via joint investment funding from EADS and WG, circa £2.5-3.0 million p.a.
- 6.3 The knowledge exchange activity at the UK's leading institutions is often compared to the US's top institutions, such as Stanford and MIT. While some have criticised the under-performance of UK universities on licensing income with respect to the US, research shows that this could be attributed to the time lags in achieving significant financial return from licensing, and the fact that US technology transfer operations have been established for much longer, and have had more time to build a licensing portfolio. In addition, when individual institutions are compared between the UK and US, on their ratio of income generated from intellectual property to research expenditure, the analysis shows that the top UK universities operate on similar levels to US universities such as Stanford, MIT, Harvard, Cornell and the University of Pennsylvania.
- 6.4 It should also be noted that some Russell Group universities release some of their IP to companies for free to maximise the impact of research. The University of Glasgow, King's College London and the University of Bristol are leading the Easy Access Innovation Partnership, a collaborative project to promote new ways of sharing intellectual property with industry through increasing engagement between universities and industry. The University of Edinburgh has developed a licensing system to allow industry easy access to two packages of university IP. This system complements the ut.com website that allows industry access to all technologies available from Scotland's key research universities.
- 6.5 Schemes such as the Technology Strategy Board's Knowledge Transfer Partnership (KTP) programme are crucial to developing partnerships. Adopting a planned and systematic approach to communicating the benefits of KTPs to companies and academics is essential to increasing the number of KTPs. For example, the number of KTPs at Cardiff has increased from 5 to 26 over the past 3 years.
- 6.6 The UK's leading research-intensive universities work in collaboration with smaller and less-research-intensive universities, and together generate economic benefit. Examples where the UK's leading research-intensive universities work in collaboration with others are given below:
- Manchester: the University has assisted other universities in the evaluation and commercialisation of invention disclosures. One disclosure from Manchester Metropolitan University was invested in by the University of Manchester's seed funds, and now exists as a spin-off.
 - The White Rose Consortium: the consortium aims to facilitate collaboration between the Universities of Leeds, Sheffield and York. The consortium includes joint seed-corn and proof of concept funds, as well as collaboration between professional knowledge transfer/exchange staff working with industry and other partners.

- Edinburgh: the University has led the design and implementation of a single IP agreement across Scottish institutions.
- Edinburgh and Glasgow: the Universities are involved in Interface - the knowledge connection for business - which matches businesses with academics, and making the world class knowledge, expertise and research facilities in all of Scotland's Universities and Research Institutions easily accessible to business through one point of contact. Since its launch in 2005, over 420 collaborative projects have been initiated between business and universities, with 74% of these businesses having never worked with a university before.

6.7 The Government needs to consider how the Technology Strategy Board (TSB) and the future TICs interact with the world-class research and existing long-term business relationships within the country's universities. It is important for the TSB to recognise that new investments should be closely linked to proven academic expertise and industrial capability. Existing successful centres are often closely associated with, or even embedded within, universities which have a critical mass of excellent research and teaching, and strong established relationships with industry.

6.8 We believe that it is important that the REF continues to encourage the evolution of the research base and incentivise the creation of new research groups, departments and collaborations. We are concerned that the initial weighting of impact is too high given impact assessment is a new and untested component of the REF. We hope that the weighting does not result in driving behaviours which stifle the growth of new research groups and partnerships.

7. Section 7: 'Universities and business collaboration in local economic development'

7.1 There has been a global shift to government policies focusing on the importance of knowledge, innovation and clusters in recent years. Many countries around the world have been seeking to strengthen or replicate the success factors that have encouraged the concentration of innovative firms associated with the new economy, as exemplified by Silicon Valley and Silicon Fen. The UK's leading research-intensive universities boost the performance of local knowledge-intensive businesses, and incentivise additional knowledge-intensive businesses to locate nearby. The benefit to businesses from co-location is higher productivity and profitability, as demonstrated by OECD research on clusters.¹⁰ Examples of clusters are given below:

- Cambridge: Cambridge is home to Europe's leading technology cluster which involves around 900 innovation based companies. 51 companies have spun-out directly from the University and a further 250 trace their origins to the University.¹¹ ARM Holdings is a multinational semi conductor and software company, and the market leader in the field of mobile phone chips. The BBC and Open University have noted that "ARM's strength has been built around having a highly skilled and highly educated workforce. It is no coincidence that it is found in Cambridge."¹²
- Manchester: the University is at the core of a cluster of public bodies and over 90 science and technology businesses in the digital media, biotechnology and ICT sectors. This includes globally recognised companies such as Colgate-Palmolive as well as new companies and young entrepreneurs.
- London: London hosts a large cluster of high-tech companies, with particular strengths in the life sciences and financial services. Imperial College London and

¹⁰ OECD *Competitive regional clusters: national policy approaches* (2007)

¹¹ Library House *The Impact of the University of Cambridge on the UK economy and society* (2006)

¹² BBC and Open University, *Made in Britain*, (2011)

University College London have long and successful track records in creating some of the most successful spin-out companies in key new industries, with Imperial having equity holdings in 80 companies, and UCL in 45, across fields of science, engineering, medicine and business. Also, London is a power-house for pioneering the rapid translation of biomedical research into clinical use, and is home to three of five UK Academic Health Services Centres (King's College London, Imperial College London and University College London).

7.2 There is a well-established body of literature which demonstrates that **the quality of research generated by an organisation and the associated quality of the researchers is a dominant factor when businesses make their choices on collaboration and location**. Findings from the literature include:

- R&D companies and venture-backed companies tend to locate near the UK's top universities, and research-intensive universities are one of the main driving forces behind the development of high-tech clusters.¹³
- R&D facilities in pharmaceuticals tend to be co-located with the UK's highly rated chemistry departments, with innovative businesses in the chemicals and vehicle sectors also having geographic proximity to related research flows from universities.¹⁴
- a survey of 250 businesses in the US and Western Europe¹⁵ shows that the proximity of highly qualified R&D personnel was the most important factor in decisions about where to locate company R&D facilities, and that large research-intensive universities are among the most effective aggregators of highly qualified personnel."¹⁶

7.3 *The thinkpiece on Local Enterprise Partnerships (LEPs), UKTI and Universities in Inward investment* highlights that the redefined roles of UKTI and LEPs provide a distinct opportunity. Given the changes to regional infrastructure and particularly the demise of Government Offices and Regional Development Agencies in each region, universities will play an increasingly important role in:

- Ensuring that inward investment and science & innovation agendas are addressed in a strategic way at a sub-national level. This requires more formal liaison with agencies like UKTI to ensure that the UK's offer to inward investors is well articulated, including the skilled labour market and business services that universities provide. Universities are working to engage more intensively with SMEs that are involved in international trade or wish to be, through graduate/postgraduate placements, particularly those with language and business/marketing skills, and through the judicious use of universities' international/alumni networks.
- Developing local economies through active participation in LEPs and related partnership groups, such as innovation, skills & employment and transport boards, and through private sector bodies that interact with the public policy and economic agendas, namely CBI (national and regional), Chambers of Commerce and sector organisations. Universities are especially able to help re-brand places as 'knowledge cities' or science cities', develop plans to grow the knowledge economy in all localities, generate innovation networks (including new fora to replace the science

¹³ Library House *An analysis of UK university technology and knowledge transfer activities* (2007)

¹⁴ Abramovsky, L. and Simpson, H. *Geographical proximity and firm-university innovation linkages* Institute for Fiscal Studies working papers W09/03 (2009)

¹⁵ Thursby, J. and Thursby, M. *Here or there? A survey of factors in multinational R&D location*, National Academies (2006)

¹⁶ Usher, A. *Ten years back and ten years forward: developments and trends in higher education in the Europe region* European Centre for Higher Education (2009)

councils previously supported by RDAs) and provide specialist services to the business community. The Universities of Newcastle, Birmingham, Warwick, Nottingham, Manchester and Bristol are playing major roles in leading and participating in their respective Science Cities initiatives, and these initiatives are now being adopted and integrated into the LEP related activities in each of their city regions.

- 7.4 Such interventions by universities underline their contribution to place, and support Government policies in respect of sustainable communities as well as economic competitiveness. They also complement the civic mission of universities and demonstrate their relevance to society.
- 7.5 The West of England LEP has asked the University of Bristol to develop the Knowledge Exchange strategy for the LEP, coordinating across the four HEIs in the LEP region. Also, the University of Liverpool is leading the development of the knowledge economy in the Liverpool City Region. The University engages with a range of external partners and communities through its civic leadership role, using its talent, knowledge and networks to full effect. The Vice Chancellor is a member of the newly created LEP for the City Region, and also chairs the Knowledge Economy Group (KEG), involving public and private sector leaders and representatives from the Department of Business Innovation & Skills and the Science & Technology Facilities Council.

14 November 2011