connecting and growing creative businesses through engagement with higher education institutions

FINAL REPORT

FEBRUARY 2013

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Sponsored by:
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Foreword

This report was jointly commissioned by the Arts and Humanities Research Council (AHRC) and Creative England. It represents some major developments in the way we think about the links between research and the UK’s burgeoning creative economy. Both the UK’s research sector and creative economy are, on any measure, world class. And, as both have innovation, creativity and new knowledge at the heart of their activities, it is important to bring them into yet closer relation.

It is also true that the new and innovative will increasingly be produced in partnership between different kinds of organisation. These may be funders, facilitators, research bodies, cultural organisations or creative enterprises, both public and private. The topic of this report is to look at one aspect of how these interactions may be enabled, and it contains enormously helpful material on both the strengths and weaknesses of current work.

It is fitting that a report analysing creative relationships should itself be produced collaboratively. The AHRC and Creative England have valued the opportunity to work together enormously and the report contains suggestions for how we might develop our partnership. Over the coming period, we will be looking at these and considering how best to develop this fruitful beginning.

Rick Rylance
Chief Executive,
The Arts and Humanities Research Council

Caroline Norbury
Chief Executive
Creative England
Key Findings

Key findings are summarised below under two main stages of inquiry as follows:

Mapping

- Mapping identified 16 major HE hubs of Knowledge Exchange activity focused on the creative sub-sectors (of Film/Television, Digital/Media and Games), and located across England (outside of London). These ‘hubs’ exemplify high levels of research excellence, cross-disciplinary initiatives, visible industry-education collaboration, specific Knowledge Exchange programmes, and proximity to concentrations of creative businesses (see Part 2: Map 1).

- There is a geographic overlap between four of NESTA’s creative clusters (Bournemouth, Bristol, Brighton and Manchester/Salford) and four major HE hubs, albeit not a match-up with their main industry foci. These four places are identified as Knowledge Exchange ‘hotspots’ because of the significant level of relevant activity (see Part 2: Map 2).

- Analysis shows no direct or consistent relationship between the main sub-sector focus of a major HE hub and the sub-sector focus of its co-located creative businesses (for example, Brighton’s main business cluster is Arts and Antiques whereas the major HE hub’s sectoral focus is Digital/Media).

- Fifty percent (50%) of major HE hubs are part of universities that also offer workspace for creative businesses, two being co-located with Business Schools with creative industry expertise - Lancaster is the only major HE hub that combines workspace for creative businesses, a Business School with creative industry expertise, and an overlap with local creative businesses in its main sub-sector focus (Design).

- Online navigation of HEI websites and communication of Knowledge Exchange activity assume a visitor’s familiarity with academic language and knowing what s/he is looking for and where on the website to search. With multiple centres and resources on offer in a single HEI, access can prove a matter of ‘hit or miss’.
Understanding Knowledge Exchange activity and creative businesses

MODELS OF KNOWLEDGE EXCHANGE

• Understanding and managing value is central to any discussion about successful models of Knowledge Exchange. There are some notable gaps in provision including the “missing middle” between informal engagement and large costly programmes, as well as gaps around strategic focus and leadership, and intelligence on the long term economic impact of Knowledge Exchange activity to creative businesses and the UK’s knowledge-intensive economy.

• Roundtable discussion identified specific characteristics of successful models of Knowledge Exchange activity that complement findings from the Hidden Connections report (Hughes et al, 2011).

• Specifically, successful models of Knowledge Exchange activity tend to have the following characteristics and principles: informal, individual and network-led; appropriate for a business’ stage of development; highly collaborative; highly networked; cross disciplinary; accessible and brokered; part of a systematised approach to innovation; include access to finance and to new markets; led by evidence and with a recognition of success and economic impact.

BARRIERS TO KNOWLEDGE EXCHANGE ACTIVITY

• Barriers were identified largely around the core issue of articulating value. They include: matching outcomes with collaborators’ ambitions; finding the right incentives and funding connectivity; articulating knowledge (and so its value); providing appropriate propositions for businesses; correctly defining the problem or activity and establishing clear outcomes. These barriers are significant inhibitors to effective business engagement and resulted in relatively low demand amongst small creative businesses.

• Barriers around awareness and accessibility include: making appropriate connections between HEIs and businesses; accessing information; establishing mutual trust.

• Barriers around professional and organisation cultures include: conflicting styles of innovation; tolerance of failure; ambition; outputs; tolerance of bureaucracy; timing.
KNOWLEDGE EXCHANGE ACTIVITY AND GEOGRAPHY

- Co-location of a university with an Arts and Humanities research specialism and creative businesses was viewed as having a positive effect on clustering, because of the perceived value of proximity and retention of skilled and talented graduates in that local area.

- Geographic proximity may sometimes be less important for ‘best fit’ Knowledge Exchange activity between a HEI and a creative business/practitioner because of the relatively small geographic size of the UK (in comparison to larger countries) and the value placed on national and international networks (social, disciplinary, and industrial).
**Recommendations**

Recommendations are made throughout the report and are listed below under four major strands. Based on the research, they provide potential activities for discussion between Creative England and the AHRC. Note that in the body of the report, recommendations are attached to the relevant findings and so appear in a different order. A reference page is supplied with each recommendation to guide the reader to the section of the report that supports it.

**Strand 1: Developing strategic leadership**

Given the importance assigned to business-higher education collaboration, juxtaposed with a lack of strategic focus between the various sector organisations (private and public, industry and education) involved in developing knowledge exchange and creative businesses, Creative England and the AHRC are well-placed to take a leadership role. To this end, Creative England and the AHRC should:

**Recommendation 1: Establish a strategic and distinct group on HEI-Creative Business Engagement.** Creative England and the AHRC could convene a bi-annual strategic group to discuss existing activity and plan shared programmes. Participants might include Arts Council England, Creative Skillset, C&C Skills, the Design Council, other Research Councils and Local Enterprise Partnerships interested in a creative economy. (see page 72)

**Recommendation 2: Creative England and the AHRC to work together on existing Knowledge Exchange programmes.** Creative England and the AHRC could maximise their shared interests in existing programmes. For example: the AHRC could include Creative England in the selection process for any future AHRC Knowledge Exchange Hubs; Creative England could include the AHRC in programme development; Creative England could help the AHRC disseminate findings from the current Knowledge Exchange Hubs and other research findings to creative businesses. In addition, Creative England could be invited to future AHRC Knowledge Exchange Hubs’ networking events. (see page 50)

**Recommendation 3: Promote the value of Knowledge Exchange in the creative industries to outside stakeholders as well as within the sector through shared events, workshops and programmes.** The AHRC and Creative England could work
together to advocate the value of Knowledge Exchange and inter-disciplinary collaboration. To help target effort and resources, this could include co-hosted events, workshops and programmes with organisations such as the Technology Strategy Board, Universities UK, NESTA and The Work Foundation. (see page 54)

Recommendation 4: Broker and promote access to European Commission research funds for SMEs, particularly the Framework Programme 7. Based on a strong and growing reputation within the European Commission and European Creative Industries Alliance, Creative England should broker and promote industry-education partnership applications to EU funds with the support of the AHRC. In particular, the Framework Programme 7 offers two strands of relevance - Support for SMEs, and Research for SME Associations – which may provide funds for further activity and research. (see page 57)

Strand 2: Developing networks

Networks are a critical component of effective Knowledge Exchange activity, providing new ideas, collaborators, and resources, and tackling barriers of access and isolation. On the basis that much successful activity takes place at an individual academic and practitioner level, networks should be developed by specialisation, sector, geography, institution, or around a few key actors. To build stronger networks and enhance existent clusters, Creative England and the AHRC could:

Recommendation 5: Focus a future round of Creative England’s Film Networks Fund on developing specific, niche HEI/business networks, working with the AHRC to provide match-funding and promotion. While the first round of the Film Networks Fund was used to support specific networks, another round could focus on specific niche sectors where networks are emerging. For example, the Digital creative industries network (as in Birmingham), and the Animation and Modelling network (as in Bath/ Bournemouth). (see page 52)

Recommendation 6: Extend networking events to involve local HEIs and specialist HE hubs and promote closer cooperation between them. Creative business networking events bring together a range of industry practitioners and could be extended to include local academics and post-graduate researchers who could

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1 Framework Programme 7 (FP7) is a major European Commission funded research programme aimed at supporting SMEs. For details see [http://ec.europa.eu/research/fp7/index_en.cfm](http://ec.europa.eu/research/fp7/index_en.cfm)
explain the value of Knowledge Exchange (for example, as guest speakers, panel members, event participants). Creative England, the AHRC and local Knowledge Exchange Hubs could join forces to help facilitate this cross-fertilisation. (see page 52)

**Recommendation 7: Set up a new programme of HEI-business innovation and ‘hack’ days.** Low cost, time-limited and creative introductory sessions help build face-to-face contacts and individual engagement, and are at the cutting edge of new ways of thinking, creating and innovating (particularly cross-sectoral ones such as across Computer Science, Engineering and Creative Media). Tapping into areas of expertise, Creative England and the AHRC could support a new programme and broker partnerships between businesses and academics from outside the sector (such as Health, Engineering, and Construction) and focus on specific industry-led challenges. (see page 59)

**Strand 3: Providing programmes that are accessible to smaller businesses and that promote academia-practitioner engagement**

With a high percentage of businesses in the creative industries of small size, there are evident gaps in Knowledge Exchange provision for smaller business who often lack the resources (human and financial) or capacity for Knowledge Exchange activity, or for whom timescales are often too long (such as full scale KTPs). Academics need to better understand contemporary business practices and adapt models accordingly. Suggested solutions are:

**Recommendation 8: Develop the Creative mini KTP: A shorter programme on the Knowledge Transfer Partnership model to help bridge the “missing middle” for creative businesses.** The AHRC could work with the strategic group (see Recommendation 1) to help progress development of a shorter KTP programme that takes account of the needs of smaller creative businesses, filling the “missing middle” between informal, project-based activity and larger more structured KTP programmes (such as the TSB’s KTP programme). Shorter programmes should feature: intense collaboration or partnerships over 10-26 weeks; cost around £10,000 to the business; minimum bureaucratic requirements; a rolling programme with rounds of activity that connect with innovation; ‘hack’ days (see Recommendation 7). The AHRC could work
with Creative England on promotion of, and engagement in, this programme to ensure creative businesses understand the value of participation. (see page 53)

**Recommendation 9: Fund and broker a project placement scheme to align with the Wilson Review recommendation.** The Wilson Review recommended: “All full-time postdoctoral research staff should have the opportunity to benefit from 8 to 12 weeks’ of work experience outside the academy every three years during their contract.” (Wilson Review, 2012, Recommendation 16, paragraph 5.6). The AHRC and Creative England could work together to fund and broker a project placement scheme, with the AHRC able to provide access and promotion amongst academics, whilst Creative England is well-placed to find sponsorship and broker these placements with creative businesses. (see page 66)

**Strand 4: Marketing the value of Knowledge Exchange to creative businesses**

Findings show that a stronger and more business-orientated case must be made to creative businesses for the value of Knowledge Exchange. With greater emphasis on outcomes and wider economic impact, marketing by HEIs (for example, web pages, online and hard copy material, presentations, seminars) should address issues of language, procedures and case studies. To help find ways to better market the value of Knowledge Exchange to creative businesses, Creative England and the AHRC could:

**Recommendation 10: Sponsor an OpenIDEO competition on how to design better programmes.** IDEO is a design and innovation firm that developed OpenIDEO as an online innovation platform or crowdsourcing tool to solve major high profile problems or challenges (such as that of the European Commission on the Digital Agenda or Intellectual Property and Film Archives). Creative England and the AHRC could sponsor an OpenIDEO challenge on improving creative business engagement with HEIs to source new ideas and approaches to problems of Knowledge Exchange. (see page 69)

**Recommendation 11: Use a service design agency to re-think engagement with creative businesses.** Service design is typically used to help plan or organise a process or structure to improve its quality and effectiveness, especially in processes

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2 OpenIDEO is explained in an online video - see http://www.youtube.com/embed/eUApgJBU8M?wmode=opaque&autoplay=1
where the culture of one side (for example, customers) does not match with the requirements of the other (for example, providers). The AHRC and Creative England and/or a consortium of HEIs could commission a service design company (such as ThinkPublic) to look more closely at the process by which Knowledge Exchange activity currently happens and to restructure and redesign the process. (see page-69)

Strand 5: Strengthening the evidence base

Notwithstanding extant research, there is little quantitative research into Knowledge Exchange activity and its impact on small creative businesses and on growing a creative and digital economy. Significant public investment is being made to support creative businesses through Knowledge Exchange activity and, therefore, some sort of assessment of economic impact and effectiveness across different sub-sectors should be undertaken. A wider research programme is proposed to be shared between Creative England and the AHRC for strengthening the evidence-base and building on existing scholarship, this scoping research report and the relational geographies of Knowledge Exchange. In particular, three gaps in current research could usefully be filled:

**Recommendation 12:** Conduct a comparative literature review to look more carefully at the available research on creative industries and to make comparison with that available in other sectors. This should assess any available evidence on creative Industries-HEI collaboration (including this research report). Although there does not appear to be any economic and social impact research focused on the sector as a whole, there is likely to be evidence in the form of specific impact studies and evaluation of individual projects. This is a natural starting point for the development of a full brief for the research mentioned in Recommendations 13 and 14. (see page 60)

**Recommendation 13:** Fund quantitative research into the success of different models of engagement and their impact on company development and the wider UK economy. Pending outcomes of a literature review, further research should look at quantitative sources of information that might provide a more objective view of the work, and understanding in greater detail of where successful Knowledge Exchange models are found. (see page 58)

And looking at the nature and scope of high impact partnerships.
Recommendation 14: Commission further research to gain a national view on clustering and its relationship to Knowledge Exchange. Creative England and the AHRC could look more closely at business survey data in order to answer questions around Knowledge Exchange activity, innovation, creative business growth and the contribution these dynamics make to the UK economy. This work is challenging but would provide a broader overview of their relational connections and build on the evidence gathered for this report. Many important questions can be answered using existing data, but specific surveys focused on barriers to interaction are needed. In addition, such research will be a valuable tool in addressing recommendations proposed in Strand 1 Developing Strategic Leadership (see above). (see page 74)
Part 1: Introduction

Overview

Ensuring stronger and more effective engagement between creative businesses and universities lies at the heart of this research report. The United Kingdom is home to 25 of the world’s 150 top ranked research universities and boasts a fast growing, internationally acclaimed creative and digital economy. Recent mapping studies show a UK creative economy that is, relative to GDP, the largest in the world, and growing at 6.2% per annum (Chapain et al., 2010; De Propris et al., 2009). Furthermore, the importance of business-university collaboration to the country’s economic recovery and role of the Research Councils is made clear in Professor Sir Tim Wilson’s review (2012). But Knowledge Exchange activity is still evolving between Arts and Humanities disciplines and those working in the creative sector (Ekos, 2010; Hughes et al., 2011). This raises the question of ‘what more can be done to develop effective connections and ensure the value of Knowledge Exchange activity is understood and acted upon by all parties?’ Some challenges are best addressed at an individual university or local level and others better tackled at a national and strategic level. This report focuses primarily on the latter scenario and makes recommendations for consideration by the lead funding and development bodies, and in particular the project’s commissioning bodies - Arts and Humanities Research Council and Creative England.

Since Richard Lambert’s Review in 2003, significant changes have been made to how universities engage with external organisations, including public investment in Knowledge Transfer Partnerships (KTP), graduate placement schemes and support of research and development (R&D) activity. The Wilson Review (2012) moves the business-university engagement policy agenda forward with the aim of ‘making the UK the best place in the world for industry-university collaboration’ (2012: 14). Mindful of the Wilson Review’s broad approach and landscape of ‘five domains’ and extant scholarship, this research report

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3 According to The Times World Universities Ranking 2011/12: of performance in Arts and Humanities disciplines, the top 50 universities include Cambridge, Oxford, UCL, Manchester, Kings College London, Lancaster, Leeds; of overall reputation ranking, the top 50 universities include Cambridge, Oxford, Imperial College, UCL, LSE.

4 The Wilson Review recommendations cover ‘five domains’:

- From future-oriented research in advanced technologies, to in-house upskilling of employees;
looks specifically at the challenges and opportunities of Knowledge Exchange for small and medium sized creative businesses. The project recognises the mutual interests of the Arts and Humanities Research Council (hereafter known as the AHRC) and Creative England who share:

- a focus on growing the UK’s creative economy;
- a commitment to improving creative business-university Knowledge Exchange;
- access to expertise and resources for new programmes and initiatives;
- adherence to the principles of replicability, scaleability, usability, adaptability, sustainability and green procurement in their various programmes.

Report findings and recommendations are intended to help strengthen these mutual interests in connecting and growing creative businesses with higher education institutions (HEIs) and to inform future Knowledge Exchange activity. It is, of course, important to recognise the differences between Creative England and the AHRC that have influenced the project’s scope. The former operates across England (outside London) and has a focus on Film, Television, Digital Media, Games and Creative Services, whereas the latter operates UK-wide and is involved in a broad spectrum of Arts and Humanities disciplines.

The research project was jointly funded by the AHRC and Creative England\(^5\) with support from an EU-funded initiative entitled Clusters 2020.\(^6\)

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\(^5\) Creative England was established in 2010 to provide joined-up support for the creative industries outside of London (Film, Television, Games, Digital and Creative Services) and a related infrastructure (e.g. museums, galleries, festivals, cinemas, archives). Creative England aims to develop and deliver a coherent and effective business support mechanism across England. Building on the resources and expertise of the old Regional Screen Agencies, and existing local business clusters, the agency visualises a ‘hub and spokes’ approach, and is developing collaborations with relevant strategic bodies including the Research Councils, Creative Industries Council and the Sector Skills Councils.

\(^6\) Clusters 2020 is a 3-year EU funded, transnational project being delivered by Creative England and University of Coventry in the UK and in partnership with the European Creative Alliance. A key aim of Clusters 2020 is to develop an intelligence module and knowledge exchange mechanism that taps into
Aims and objectives

The purpose of the research was to gain a better understanding of different models of Knowledge Exchange activity, gaps and disconnects, and provide an initial scoping of the potential for new strategic and collaborative initiatives. With considerable public investment being made in HE-based research and business support services, there is an imperative to ensure its impact is maximised. Specifically, the research aimed to scope the nature and size of Knowledge Exchange activity across England (outside of London), and undertake gap analysis of engagement between higher education institutions (HEI) specialising in Creative Arts and Media research and creative businesses operating in Film, Television, Games, Digital Media and creative services. It is this academic and industrial landscape that forms the basis of a strategic alliance between the AHRC and Creative England.

The project objectives were:

- to map current geographic areas and concentrations of creative business engagement with universities across England outside of London (a database and visual map), including evidence of connections to local business networks and clusters where appropriate;
- to connect and consult with a range of strategic partners involved in creative industry-university engagement (for example, other Research Councils, Creative Industries Council, Sector Skills Councils, Universities UK, Council for Industry and Higher Education, NESTA, the Design Council, Arts Council England, and other cultural and business development agencies);
- to identify critical gaps and disconnections in current provision, and related challenges and opportunities for future programme activities;
- to inform the AHRC’s and Creative England’s understanding of successful models of Knowledge Exchange activity.

Research was undertaken by Jules Channer, a Creative England Associate and researcher, and Paul Owens and Callum Lee from BOP Consulting between April and July.
2012 and draws on their extensive experience of creative industries research and sector development. The methodology (described more fully below) involved critical review of academic and policy literature, desk-based research, mapping and consultation work with senior personnel from private and public sector organisations.

Definitions

For the purpose of this report, Higher Education (HE) refers to tertiary level institutions that hold degree awarding powers and does not include Further Education colleges that deliver degree programmes. Mapping and consultation work concentrated on Higher Education Institutions (HEI) and creative businesses in England but did not include activity in the Greater London area. First, Creative England’s operational area covers England but not the capital city. And second, the amount of HE and industry activity in London is indisputably high and inclusion would have unhelpfully distorted the findings and recommendations.

Researchers have long recognised that boundary definitions of academic disciplines and industrial categories are imprecise and none more so than in a convergent digital world (Mina and Probert, 2012). A similar problem of categorisation applies to models of Knowledge Exchange. Notwithstanding this caveat, the researchers focused on the disciplines of Creative Art, Digital Media and Design, and the industrial sub-sectors of Film, Television, Games, Digital Media and creative services in order to (loosely) frame the inquiry. While the AHRC’s research interests are much broader (and indeed the mapping ‘seeped’ over into other subjects), the selection was considered compatible with Creative England’s principle sector interests.

In terms of a ‘creative economy’, the report adopts the broad definition used in the AHRC Knowledge Exchange Hubs Call (2010). It incorporates the industrial grouping known as

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7 The project’s research site of England (outside of London) was chosen to align with parts of the UK that are shared by Creative England and the AHRC. The research team fully acknowledge the UK-wide remit of the AHRC and research interests in the Arts and Humanities that extend beyond those covered in this project.
‘the creative industries’ defined by DCMS (2011) as well as the wider value chain of creative content production (Hutton, 2007; DCMS et al, 2008).

**Structure of the report**

The report is structured into four main parts with the additional top and tail of Key Findings and Recommendations at the start and ends with Glossary, Bibliography and Appendices. The substantive sections are:

- Part 1: Introduction that covers an orientation to the research project, a brief review of academic and policy literature, and project methodology;
- Part 2: Mapping of Knowledge Exchange activity that presents findings and data analysis based on a geography of creative business activity in relation to major HE centres of Knowledge Exchange activity;
- Part 3: Understanding Knowledge Exchange activity that covers the findings and conclusions from three roundtable sessions held in London, Birmingham and Manchester and twelve one-to-one informal interviews;
- Part 4: Conclusions and recommendations that draws together the findings and analyses.

**Background**

Over the past decade there has been a steady increase of business-university collaboration, encouraged by several highly influential governmental reviews (Lambert, 2003; Wilson, 2012) and substantial public investment (AHRC, 2009). Regardless of political administration, the relationship between universities, innovation and business growth is viewed as a crucial one for economic and educational policies. Under Labour, for example, the Lambert Review (2003) introduced Knowledge Transfer Partnerships, In 2007, the Sainsbury Review *Race to the Top* identified a ‘national innovation ecosystem’ involving a wide range of actors such as universities, government funders and regulators, businesses and investors. More recently, the Wilson Review (2012) and a ministerial response (BIS, 2012) confirm the Coalition Government’s commitment to working with

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8 DCMS (2011) refers to 13 sub-sector categories that form ‘the creative industries’ – Advertising; Architecture; Arts and Antiques; Crafts; Design; Designer Fashion; Film and Video; Interactive Leisure Software; Music; the Performing Arts; Publishing; Software and Computer Services; Television and Radio.
public and private sector organisations to support business-university collaboration. The Rt Hon David Willetts MP said on 26 June 2012:

Higher education is about much more than economic success, but universities and graduates are vital to economic growth. We must ensure that graduates enter the labour market equipped to succeed, that employers know how to engage with universities and that we make good use of new research discoveries.

Economic and HE policies, including the link between Government’s goal of a creative economy and business-university collaboration, are underpinned by the Plan for Growth (HM Treasury, 2011).

Alongside governmental policy attention, there is significant interest by researchers in the complex dynamics of Knowledge Exchange activity and its impact on the UK economy (Abreu et al, 2009; CIHE, 2010a; Ekos, 2010; Hughes and Mina, 2011; Hughes et al, 2011; Mina and Probert, 2012). Much of this literature is concerned with the supply side and role of academics (Kitson et al, 2009; Powell, 2007) in developing provision. Research Councils such as the AHRC and Technology Strategy Board (TSB) are at the forefront of this debate with their pivotal role as funders, commissioners, champions and problem-solvers in pursuit of ‘pathways to impact’ and more effective engagement (AHRC, 2011; TSB, 2009). Literature review undertaken for this research project identified certain recursive issues and recommended actions that point to potential new activities. Some of this discourse addresses SMEs in general and some tackles creative businesses in particular. A brief overview is given here as background to this study but the reader is directed to the original sources and Bibliography section for more detailed discussion.

DEMAND-SIDE: BUSINESS ENGAGEMENT WITH KNOWLEDGE EXCHANGE

Recent studies show a vast range of business-university activity is available across all disciplines and different types of HEIs (Hughes et al, 2011; PACEC, 2012; PACEC and Centre for Business Research, 2011; Wilson, 2012). Looking at all HE engagement with aspects of the creative economy, 81% of English HEIs identify creative and cultural industries as a target sector in their Knowledge Exchange strategies, the highest of all sectors (PACE and Centre for Business Research, 2008: 27). But do high levels of supply

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translate across to the demand side? Of Knowledge Exchange activity in arts and humanities disciplines, Hughes (2011) notes:

First, there is significant diversity within the Arts and Humanities group – with those in the Creative Arts and Media tending to be the most highly connected to external organisations and involved in private sector commercial transactions. Notwithstanding the Centre for Business Research’s (CBR) positive findings of ‘hidden connections’, the notion of Knowledge Exchange ‘held’ by academics in Arts and Humanities seems at odds with the commercial world they engage with. For example, the study found Arts and Humanities academics: consider their research is of ‘no relevance for external organisations; are less likely to have had their research applied in a commercial context; but are more involved in research with relevance for non-commercial external organisations’ (ibid, page 2). That said, academics researching in Creative Arts and Media disciplines are found to be the most involved in ‘relevant’ research of the Arts and Humanities disciplines. The point to note here is the gap between the value placed on applied research by academics, and the commercial outlook of many creative businesses. In other words, academics engage to benefit their research and teaching (insights and presentation content), whereas businesses engage to improve their commercial performance (practical skills, R&D and innovation).

Less attention has been paid to the value placed on HE research expertise by SMEs. Across all discipline, only 3.5% of investment in university research and development activity (R&D) is made by SMEs, with most coming from large corporates (Wilson, 2012: 53). It is likely that the percentage is even lower in the creative industries where there are few large sized companies (Skillset, 2009). Professor Wilson recommends raising SME demand for R&D as a major challenge and one that requires renewed effort and strategic leadership by public bodies including that by the Research Councils. This raises two key questions for specialist intermediaries: how to stimulate demand for R&D by small and micro sized creative businesses who, by definition, have limited capacity for experimentation and risk?; and how to encourage investment in R&D given their limited resources for risky speculation? (Mina and Probert, 2012).

At a local level, Government views Local Enterprise Partnerships (LEP) as the forum where engagement between SMEs and university can be strengthened and integrated into local economic development priorities and public-private investment plans (BIS, 2012: 31). In the past, the old Regional Development Agency (RDA) regional boundaries and sector
programmes proved somewhat incompatible with SME business models (The Work Foundation et al., 2010) and particularly those in the creative industries (Harvey et al., 2011). Reasons for the disconnection between public intervention and business models included the RDA’s artificial territories, a ‘one size fits all’ approach to business support, excessive bureaucracy and lack of risk-taking by intermediaries. Will the new geographies of LEPs and their discretionary powers provide a better mechanism for growing local creative clusters and creative economy? Of the new LEPs, the Creative Industries Council/ CIC Skills Group Report (Creative Skillset, 2011: Appendix 4 page 24) lists 13 LEPs that mention creative industries as a priority sector including Greater Manchester LEP, Heart of the South West (Devon, Plymouth, Somerset and Torbay area), South East LEP and West of England (Bristol and Bath area). These LEPs build on existent local partnerships of HEIs, businesses, local authorities and voluntary sector organisations, and several LEPs have made successful Regional Growth Fund (RGF) bids and/or hold status as Enterprise Zones (such as Birmingham, Bristol, Manchester, Sheffield and Tees Valley). On the one hand, these geographic areas suggest LEPs are ready and willing to help strengthen Knowledge Exchange activity. However, gaps and disconnects in the LEP landscape indicate there are other opportunities for new activity around sector/discipline specific support and particularly in rural areas where creative businesses are widely dispersed and often isolated from Knowledge Exchange provision.

In terms of future demand for Knowledge Exchange activity, this will be significantly influenced by the current generation of fee-paying under-graduate and post-graduate students whose experience of HE-based R&D will be carried over into their roles as creative practitioners and business owners. The Coalition Government’s policy (BIS, 2012; Wilson, 2012) of shifting funding from HEFCE and HEIs to the student (that is, resources follow the student) has implications to the supply and demand side of Knowledge Exchange. Enhancing a student’s experience of business-university engagement needs to be implemented sooner rather than later to ensure positive experiences are carried over from the world of study to the commercial world. What role for public-funded intermediaries? The Wilson Review and Government’s response confirm a need for specialist organisations to help broker relationships and plan ahead. One important initiative is the new Council for Industry and Higher Education’s centre. With an existent relationship between the AHRC and CIHE (CIHE, 2010b; Mateos-Garcia and Sapsed, 2011), plus an emergent one with Creative England and the Sector Skills Councils (notably Skillset and Creative & Cultural Skills), the various intermediaries in position to take a
strategic lead in jointly addressing issues of present and future demand for Knowledge Exchange *vis-à-vis* the creative industries.

**SMALL SIZED BUSINESSES**

Research consistently shows (NESTA, 2006, 2010a; 2010b) that the creation, development and marketing of successful ideas, products and services in the creative industries depend on access to market intelligence, skills, capital and the collaboration and connection of businesses, universities and the wider financial and professional community. The problematics of effective creative business-university engagement are examined in, for example, Universities UK’s report *Creating Prosperity* (Ekos, 2010) and the AHRC’s commissioned report *Hidden Connections* (Hughes *et al.*, 2011). A challenge repeatedly mentioned in these studies is the co-ordination and funding of programmes for smaller sized businesses that characterise the creative industries.

A recent research study (Mina and Probert, 2012) explored business-university interactions in four sectors including what it called ‘the converged Creative, Digital and IT industry’ (similar to this research project’s industrial scope). Of challenges and ‘missed opportunities’ faced by the sector, the research found SMEs are particularly disadvantaged. Specifically, small creative businesses are likely to: lack access to ‘risk’ finance; have an inadequate supply of talented graduates with STEM backgrounds; and have a less outward looking approach to the digital and global economy than larger companies. The researchers conclude a ‘one size fits all’ policy approach is too simplistic, commenting:

> Efforts to promote, develop, incentivise and support innovation value chains through knowledge collaboration and industrial strategy must reflect their underlying needs and future competitive challenges. (Mina and Probert, 2012: 8)

In other words, a more proactive approach to business-university collaboration is required by all parties including intermediaries, none of whom can be complacent about future competitive challenges.

Undoubtedly, new initiatives are being implemented that address the needs of small-sized creative businesses. For example, the AHRC funded and multi-HEI collaborative Beyond Text project (Welch, 2011), and TSB’s Catapult Centre for the Connect Digital Economy. In June 2012, the AHRC launched four Knowledge Exchange Hubs (see Appendix One). Using an award from the Digital R&D Fund (jointly sponsored by Arts Council England, the
AHRC and NESTA),\textsuperscript{11} Focused on mapping, Brighton Fuse is a collaboration between Wired Sussex and two local universities (see case studies in Appendix Three). And ‘Beyond the Campus’ is an AHRC-funded project focused on a networking between HEIs and creative practitioners led by Kings College London and the University of Manchester.\textsuperscript{12} It is still too early to assess the impact of these projects on the commercial development of participant SMEs and on the wider creative and digital economy. Their sponsors will, however, be acutely aware of the need to monitor outcomes as well as longer term value. University research funding is increasingly influenced by the ‘impact agenda’ and there is an imperative to ensure programmes deliver maximum economic and social impact (Ternouth and Garner, 2011).

CREATIVE CLUSTERS AND NETWORKS

Development of a closer relationship between HEIs and the creative industries is evidently an evolving one, and one that flourishes where there are local clusters of high-growth businesses and research expertise (De Propris \textit{et al}, 2009; Mina and Probert, 2012; NESTA, 2010b). Michael Porter describes clusters as:

Geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries, and associated institutions (for example universities, standards agencies, and trade associations) in particular fields that compete but also co-operate (Porter, 1998:199).

Clustering of cultural and creative industries and ‘the creative class’ is the subject of much debate (Florida, 2002; Porter, 1998) and a popular policy intervention by urban planners and economic development agencies. The growth of ‘creative cities’ from London to Tokyo (BOP Consulting, 2012) is discussed in terms of creative clusters and a relationship with cultural and educational infrastructure. The process of developing the capacity and motivation of creative businesses through clustering is the subject of the Clusters 2020 EU transnational project being delivered in the UK by Creative England and University of Coventry (see Endnote 4).

\textsuperscript{11}http://www.nesta.org.uk/areas_of_work/creative_economy/digital_rnd/ One of the goals of this fund is to improve the learning outcomes from digital innovation in arts and cultural organisations by partnering them with research teams often composed of academics who have the skillsets required to evaluate the impacts of such innovations, thus generating knowledge which is relevant to the wider sector.

\textsuperscript{12}‘Beyond the Campus: connecting knowledge and creative practice communities’ see http://www.creative-campus.org.uk
Writers argue creative clusters (and indeed individual businesses) are distinct because of how creative content is produced and consumed in a creative economy (NESTA, 2006). Unlike other industrial sectors, the creative industries generate expressive or symbolic values (films, television programmes, stories, games, one-off designs *et cetera*) compared to utilitarian or mass produced instrumental values. Also, there are distinct industrial dynamics that prevail such as short term production projects, freelance specialist labour and the need for a relevant and local knowledge base. Clustering and co-location with universities are ways of militating against the otherwise disruptive effects of such dynamics and provide, for example, access to new talent, skilled and flexible labour, R&D investors, researchers, potential collaborators, knowledge ‘spillovers’, consumers, audiences and a supportive infrastructure. Furthermore, creative networks extend and enhance those effects and widen the spatial and sectoral ‘reach’ of creative businesses beyond the local to global markets and more distanced R&D expertise (Murmann, 2006).

During NESTA’s major two-year project, attempts were made to map concentrations of creative activity across the UK to show ‘where’ they are located, their creative sector specialism and role in the eco-system of innovation in that locality. Given HEIs acknowledged role in the innovation eco-system (BOP Consulting and Experian, 2011; Ekos, 2010); it is intriguing to consider a ‘geography of creative Knowledge Exchange’ and its relationship to NESTA’s ‘geography of creativity’. What would such mapping tell us about business-university engagement? Geographic maps of Knowledge Exchange activity equivalent to those produced by NESTA’s project would, of course, require significant research time. Nonetheless, a preliminary mapping was considered useful for flagging up interesting patterns, concentrations, relationships, gaps and disconnects for further investigation (see Part 2: Mapping).

In terms of business-to-business clustering, there have been a number of regional and local initiatives over the past decade as part of economic growth, urban regeneration and ‘place-shaping’ governmental policies. For example, the Regional Screen Agencies and RDAs funded cluster development in the South West and North West regions. ‘Creative quarters’ are being nurtured in, for example, Liverpool’s Baltic Triangle, Bristol’s Temple Quay and MediaCity in Salford. This is not to imply governmental policy is the only incentive to cluster development, and certainly universities are active partners in clustering, urban regeneration and science and business parks. Whilst not abandoning notions of the ‘creative city’ and ‘creative quarter’ (Landry, 1998), policy is shifting towards...
support of the creative business *per se* and building a more sustainable innovation ecosystem based on greater private sector investment. Rather than a ‘one size fits all’ policy approach, attention is turning to solutions that respond to different business models and parts of the value chain, and to local conditions (De Propris *et al.*, 2009; Termouth and Garner, 2011) as well as the heterogeneity of HEIs. Like the many types of creative business in the creative economy value chain, different types of university play different roles in the complex system of innovation and Knowledge Exchange. Creative England has commenced a major transnational EU-funded project in partnership with University of Coventry and others, entitled Clusters 2020 that exemplifies EU and Coalition Government thinking on growing the creative economy through business-focused and diagnostic solutions (see Endnote 4).

Clustering raises the importance of place. Regardless of the framework applied to the geographical distribution of creative industrial and HE activity, it is clear that creative businesses tend to cluster strongly in specific places. This is illustrated by ‘creative metropolises’ that dominate the creative and cultural landscape of a country as well as at a global scale (Pratt, 2010). For example, there are the creative ‘hot spots’ identified in NESTA’s mapping (Chapain *et al.*, 2010) and the cities of London, Paris, New York, Los Angeles and Tokyo known for the quality and quantity of their creative and cultural life (BOP Consulting, 2012). However, other studies show creative clusters are not always urban-centric and nor are business-university collaborations always a neat co-location of university with creative cluster. For example, Cornwall’s creative cluster is rurally dispersed and engaged with three universities along a 100 mile stretch of the A30 from Falmouth to Exeter (Harvey *et al.*, 2011). Sheffield Hallam University is sited on an out-of-town campus that is far from the city’s cultural quarter (Roodhouse, 2008). The point to note is clustering and networking are not necessarily parochial processes.

Conceptualisation of clustering and knowledge ‘spillovers’ (Chapain *et al.*, 2010) recognises a two-way process of Knowledge Exchange, and a feedback loop between industry and university. Rather than knowledge generated and disseminated out of the academy, a more systematised and two-way collaborative approach to R&D is evolving that aims to stimulate economic impact as a complex chain of added values (Dodgson *et al.*, 2005; Mateo-Garcia and Sapsed, 2011). The implication of this shift in perspective is to look at the nature of those values and how knowledge and skills flow between academic staff and industry practitioners. Major barriers to effective engagement are consistently
identified in the various studies already mentioned (notably those by NESTA, Ekos and PACEC/ Centre for Business Research at University of Cambridge). They relate to SMEs’ capability, capacity and motivation to engage with HE research centres – or ‘absorptive capacity’ - and, more specifically, are identified as: a mismatch between business and university timescales; SME’s lack of resources (staff and R&D budget), HE bureaucracy, unfamiliarity with HE language; lack of awareness of HE services and facilities. To overcome barriers, new solutions are being implemented based on a collaborative approach (see Appendix Three) but their economic impact has yet to be evaluated.

Writers (Hughes et al, 2011) talk of an organisation’s capacity to engage in terms of ‘boundary spanning’ between the academics and external organisations and the importance of social networks. Clusters and networks are viewed as ‘boundary spanning’ mechanisms that help to forge and manage connections between people and organisations, and to overcome problems with information exchange and flows of communication. While clusters are often understood as localised, the notion of networks introduces engagement at different scales (regional, national and international).

An interesting differentiation is made (Hughes et al, 2011: 2) between modes of business-university engagement. These are identified as: people-based, problem-solving or community-based activities. Overall, Arts and Humanities engagements are highest in the community-based type but Creative Arts and Media academics are most likely to engage across all three types. This finding points to a more nuanced approach to Knowledge Exchange programmes and confirms the widely held view that ‘one size does not fit all’.

GEOGRAPHIES OF KNOWLEDGE EXCHANGE

‘Does Geography Matter for Business Connections?’ asks the Centre for Business Research. Clustering studies conclude that creative businesses tend to locate close to each other more than in most other sectors. Bearing in mind NESTA’s mapping of creative activity focuses on the business dimension and sub-sector concentrations, there is no evidence yet of the geographies of HE Knowledge Exchange activity and patterns of co-location with creative clusters. As mentioned above, it is reasonable to conjecture that there is a relationship between the location of creative industry activity and major centres of Knowledge Exchange activity and will be explored in Part 2.
Methodology

The research project was a short 4-month scoping study, conducted between April and July 2012 and executed by Jules Channer (Creative England Associate) and Paul Owens and Callum Lee of BOP Consulting. To reiterate, its purpose was to explore Knowledge Exchange activity between HEIs and small and medium sized creative businesses in order to better understand successful models of engagement. Research was broadly concerned with the disciplines of Creative Arts, Digital Media and Design, and the industrial sub-sectors of Film, Television, Digital Media and Games but with some seepage into other closely related fields. The commissioning partners (the AHRC and Creative England) required an orientation to this territory and signposts to the basis of a strategic relationship that would help strengthen connections between their two constituencies. To this end, a quantitative and qualitative mixed methods approach was taken to data gathering. The research site was England but excluding the Greater London area. First and foremost, London is the UK’s undisputed ‘creative hub’ with the greatest concentration of creative businesses (Chapain et al, 2010; NESTA, 2010b; Pratt, 2010) and a large number of HEIs. Given a short project timescale, London’s data would have dominated the findings and potentially skewed the recommendations. Roundtable sessions included representatives from national bodies, many of whom are based in London, and therefore, a macro perspective was captured. There is no intention to ignore the importance of London or indeed its ‘good practice’ models, and particularly the city’s influence on business-university engagement taking place around the Greater London periphery. The research site aligns with Creative England’s operational area of England (outside-of-London) but not with that of the AHRC whose coverage is UK-wide.

METHODS

The work was undertaken as follows:

- **Desk-based research:**
  A range of textual and internet-based material was compiled and reviewed to provide researchers and reader with background information (see Bibliography) and ‘good practice’ case studies (see Appendix One and Two) and to populate a database (see Appendix Six) and visual maps (see Mapping methods below and Appendix Seven and Eight). Using a systematic procedure, data on Knowledge Exchange activity informed all stages of the project.
The landscape of creative business-university engagement covers a diverse range of Knowledge Exchange activity. Using internet searches, activity was examined including: skills training and Continuous Professional Development (CPD) for academic and industry practitioners, post-graduate placement and internship schemes, mentoring schemes, conferences, seminars, workshops, R&D projects and reports, industry panels/ advisory groups, business incubation, work space, science park facilities, technical facilities and consultancy services.

Database fields include data on: HEI research expertise according to the Research Assessment Exercise (RAE) (2008), centres of excellence, contact details, sub-sector(s) focus, cross-discipline collaboration, size/types of businesses engaged, named partners, ‘visible’ programmes and projects promoted on HE websites and their duration, geographic ‘reach’, and hyperlinks and case studies. HEIs without a RAE submission for Creative Arts and Media, or visible online evidence of creative industry engagement, or mention in any documented case studies, were not included. An Excel spreadsheet forms the database of 69 HEIs and their different centres/institutes (making a total of 116 entries). All data are in the public domain and, therefore, the Excel file provides a resource for future update, reference and dissemination (see Appendix Four).

• **Mapping:**

At an England-wide scale, 12 visual maps were prepared in Photoshop and produced in JPEG format. They show different geographies of creative business-HE engagement across England (see Map 1 and Map 2 in Part 2 and further maps in Appendix Seven and Eight). Together, they build up a picture of major HE hubs by geographic location, overlap with concentrations of creative businesses, sub-sector focus, and relationship to HE Business Schools engaged with the creative industries. During desk-based research, Business Schools were identified as complementary to the project’s target Knowledge Exchange activity and their growing engagement in the creative economy. Also, 20 local level detailed maps were produced to show the inter-relationship between physical location, size and type of creative business activity in an area vis-à-vis the location and sectoral focus of each major HE centre.

Data were collected in two parts to:
(1) populate and interrogate a database of HEIs located in the research site that demonstrate research expertise in Creative Art, Media and Design and ‘visible’ engagement in Knowledge Exchange programmes and initiatives in the relevant disciplines;

(2) and using Photoshop and NESTA’s online interactive data maps (and reported in Chapain et al, 2010),¹³ to produce maps that locate creative business activity across England (all creative industries and target industry sub-sectors) and to super-impose the location of HEIs with high levels of ‘visible’ creative business engagement.

Mapping methods blended textual and statistical analysis of: academic and independent research studies; the latest RAE (2008) rankings for Art and Design disciplines,¹⁴ extensive internet search of university web sites; and discourse analysis of policy documents, independent reports and case studies (see Bibliography section). This mixed methods approach was used to incrementally build up maps of industry-education engagement, by geographic location, sub-sector cross-over, and inter-disciplinary collaboration around creative industries. Interpretation of the data was later supplemented and revised to take account of roundtable transcripts, telephone interviews and the researchers’ professional experience and knowledge of activity across England.

Analysis of the data sources revealed 16 major HE hubs located in 15 separate HEIs across England (outside London) that demonstrate a high level of ‘visible’ engagement in Knowledge Exchange activity (see Appendix Two). Evidence of engagement covers: research centres focused on one or more of the target disciplines and sub-sectors, industry groups and sector clusters, enterprise centres with a strong or main focus on creative industries. The database behind this report also lists workspaces/incubator spaces that are specifically designed for the

¹³NESTA online interactive maps enable the user to examine concentrations of creative business activity at a high resolution and are accessible at http://www.nesta.org.uk/areas_of_work/creative_economy/geography_of_innovation. NESTA plans to annually update these maps.

¹⁴‘Art and Design’ is a broad category and covers disciplines such as: Creative Arts, Design, Digital Media, Film, Television, Video Games, Games, Computer Graphics, Animation.
creative industries as well as business support services for creative companies and creative services offered by universities to businesses in the non-creative sector.

The maps provide a 'snapshot' of the geography of Knowledge Exchange activity and, as such, are indications rather than prescriptions of 'where' successful models of collaboration are located. The advantages of the project’s approach are that it gives a fair assessment of the public face of HEI engagement and avoids a reliance on anecdotal findings. Consequently, the approach provides a foil for the consultation findings which are largely based on personal experience. It also provides a quantitative and systematic study of activity that is 'visible' to those not already engaged in its networks and circles. However, the researchers are fully aware of the rich diversity of Knowledge Exchange activity that takes place below the public radar at an individual and ad hoc level (Hughes et al, 2011). Moreover, programmes and initiatives are not always reported on HEI websites and, therefore, remain ‘invisible’ to a web search. Given the study’s short timescale, the maps are presented as provocations and to stimulate conversation about the relationship between geographies of Knowledge Exchange and those of creative enterprise.

• **Roundtable sessions and interviews:**

A series of three roundtable sessions were held in London, Birmingham and Manchester in late May 2012 to discuss the main themes and issues identified during literature review and mapping (see Appendix Five for the roundtable structure and prompts). A list of key national organisations, HEIs, creative businesses and other relevant organisations was compiled in consultation with the AHRC and Creative England. Those selected and invited to participate were representative of the spectrum of players in Knowledge Exchange. In total, 26 people attended the roundtables and 12 people were interviewed by telephone or in person (see Appendix Four).

Each roundtable was designed to elicit a specific perspective and so had a corresponding type of attendee. The London roundtable mainly consisted of representatives of strategic stakeholders or research institutions. Birmingham and Manchester roundtables had an approximately equal split between those representing HEIs and those representing or from the business sector, almost all of whom had some involvement in Knowledge Exchange activity. Of the 12
interviewees, the majority were from HEIs. Roundtable discussions were recorded and later transcribed for analysis purposes.

- **Critical analysis:**
  Data generated during the above tasks were critically analysed and interpreted, drawing out the key meanings and implications for future attention. First, an interpretation was made of the geographies of creative industry-HE engagement across England and second, analysis undertaken of the consultation phase.

- **Conclusions and recommendations:**
  Through an iterative process, the final task was to identify key gaps and opportunities for future development of creative business-university engagement and recommend ways of building on successful and effective models.

**RISKS**
The main risks anticipated in relation to the methodology were not encountered. Of those invited to participate, most were keen to share their views, and when unable to attend a roundtable session, most were willing to be interviewed by telephone. Participants will be sent a copy of the report when available for publication and stated their interest in future collaboration with the AHRC and Creative England. Findings suggest a number of ways in which the AHRC and Creative England can work together, and separately, to strengthen creative business-university collaboration. Some recommendations are low cost and/or fit easily alongside existing programmes and activities; others are more substantial and require development at a senior and strategic level.
Part 2: Mapping Knowledge Exchange activity and the creative economy

Introduction

A mapping and visualisation exercise was undertaken in order to scope the geographies of creative business activity in relation to Higher Education (HE) centres of research excellence and Knowledge Exchange activity focused on the sub-sectors of Film and Television, Design, Digital Media and Games. The key research questions were:

- Are major centres of HE activity co-located with creative industry clusters?
- Is there a relationship between the type of creative industry activity in a local area and a HE centre’s sub-sector focus?
- What gaps, disconnects and lessons can be learned from a cursory geographic mapping of industry-education engagement?

Such an exercise complements the ‘geography of creativity’ work undertaken by NESTA (Chapain et al, 2010; De Propris et al, 2009) that maps creative businesses down to a local and sub-sectoral level. NESTA’s online interactive maps of creative business activity form the backdrop to the project’s preliminary mapping work.¹⁵

Both researchers and policy-makers recognise the problematics of industrial definition of the creative industries (DCMS, 2011) and increasingly blurry sub-sector boundaries that hinder precise disaggregation of economic data (Chapain et al., 2010). That said, the mapping condensed data into three sub-sector groups: Film/Television, Digital Media (with overlaps into Design) and Games and occasional extensions as far as, but not exclusively, Performing Arts, Publishing and Music.

For the sake of argument, a distinction is made here between a ‘hotspot’ of creative industry-HE engagement and a ‘major HE hub’. A ‘hotspot’ refers to a place where one or more HEIs demonstrate a significantly high level of Knowledge Exchange activity vis-à-vis

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¹⁵ NESTA’s interactive maps are available online and give a detailed view of the spread of industry sector and sub-sector activity for each English region and local area. Using a computer mouse, these maps can be interrogated down to Middle Layer Super Output Areas (MSOA) level – that is, micro or local areas based on population counts (NESTA, 2010). These online maps were used to examine the location of creative industry activity according to NESTA research, and the location of HE centres and major HE hubs.
the relevant creative sub-sectors (including centres of research excellence, programmes and projects, high profile awards/accreditation, cross-disciplinary collaboration), and where there is an equally high concentration of creative business activity. The notion of a ‘hotspot’ corresponds to that used by NESTA. By contrast, a ‘major HE hub’ refers to a centre within a university where a high level of engagement with one or more of the project’s target creative sub-sectors is identified (again, in terms of its research expertise, co-location with other centres, and its ‘visible’ Knowledge Exchange activity with creative businesses). The two concepts are different but related.

Given the priority assigned by policy-makers, sector development agencies and Research Councils to business-university collaboration in England and across to Europe and beyond (Wilson, 2012), there is little or no research on the geographies of such activity. Bearing in mind 81% of English HEIs identify creative and cultural industries as a target sector in their Knowledge Exchange strategies (PACEC and Centre for Business Research, 2009), mapping data should help identify ‘where’ strong connections already exist, gaps in the Knowledge Exchange landscape, and opportunities for connecting and growing university-creative business engagement in the future. The sections that follow describe the key findings, results, analysis and preliminary interpretations.

Summary of key findings

Findings are based on a database of 69 HEIs and their various specialist centres and institutes (that is, a database of multiple entries) located in England (outside of London). Data analysis shows:

- **16 major HE hubs** demonstrate a high level of Knowledge Exchange activity with the creative economy, three of which are co-located in one HEI and two in another HEI (see Map 1 below and Appendix Seven)

- **a geographic overlap exists** between NESTA’s top four creative industry clusters in Bath, Bristol, Brighton and Manchester/Salford and **four major HE hubs**, albeit not between their main industry foci - these four places are identified as **Knowledge Exchange ‘hotspots’** (see Map 2 below);

- **higher than average creative business activity** takes place near most of the universities identified as major HE hubs;
• **no direct or consistent relationship** exists between the main sub-sector focus of a major HE hub and the sub-sector focus of the co-located creative cluster (for example, Brighton’s main business cluster is Arts and Antiques whereas the major HE hub’s sectoral focus is Digital/Media) and may reflect other influences and relationships (such as disparities between degree programmes and alumnae’s employment destination, attraction to creative businesses of major urban regeneration projects, inter-disciplinary collaboration unconnected to local business community);

• **a trend towards multi-HEI partnerships and multiple centres** within a single university involved in Knowledge Exchange activity reinforces the Research Councils’ strategy for collaborative industry-HE engagement;

• **50%** of major HE hubs are part of universities that also offer workspace for creative businesses, two being co-located with Business Schools with creative industry expertise - Lancaster is the only major HE hub that combines workspace for creative businesses, a Business School with creative industry expertise, and an overlap with a major creative industry cluster in its main sub-sector focus (Design).

• **R&D collaboration** is the primary driver for a HE centre’s engagement with creative businesses;

• **international companies are rarely mentioned in Knowledge Exchange activity** (either on HE websites or cited in case studies);

• **online navigation** of HEI websites and Knowledge Exchange resources relies on a visitor’s familiarity with academic language and knowing what s/he is looking for.

**Results**

To an extent, the project’s mapping was a quantification of Knowledge Exchange activity, examining number of HE research centres, densities of creative businesses, quantity of industry partnerships and calculating levels of Knowledge Exchange activity. But the purpose was to ultimately help build a better understanding of where businesses and universities are noticeably connecting, and where lessons can be learned about successful models of engagement. Of course, quantity does not equate to quality and there is no intention here to disparage HEIs not named in the report.
Map 1: To show major HE hubs by main industry sub-sector focus

Creative Industry-Higher Education Engagement in England (outside London)
To show major HE hubs by main industry focus (Digital/Media, Design, Film/TV, Games)
Map 2: To show overlaps between the location of major HE hubs and creative business clusters

Creative Industry-Higher Education Engagement Hotspots in England (outside London)
To show overlaps between the location of major HE hubs and creative business clusters

Creative Industry Engagement by Industry Main Focus

Main Focus: Digital/Media
1. Bournemouth Skilled Media Academy, Bournemouth University & Arts University
   College Bournemouth
   Digital/Media, Design, Film/TV, Games
2. Brighton Fuse, University of Sussex & University of Brighton
   Digital/Media, Games
3. Centre for Digital Entertainment, Bournemouth University & University of Bath
   Digital/Media, Design
4. Digital City Innovation, University of Teeside
   Digital/Media, Design, Film/TV, Games
5. Digital Media Working Academy, University of Bradford
   Digital/Media, Film/TV, Games
6. MediaCityUK, University of Salford
   Digital/Media, Film/TV
7. National Centre for Computer Animation, Bournemouth University
   Digital/Media, Games
8. REACT Hub, University of the West of England
   Digital/Media, Design
9. School of Media, Birmingham City University
   Digital/Media, Film/TV, Games, Design
10. Warwick Digital Laboratory, University of Warwick
    Digital/Media

Main focus: Design
11. Centre for Fine Print Research, University of the West of England
    Design, Digital/Media
12. Imaginaction Lancaster, University of Lancaster
    Design, Digital/Media

Main focus: Film/TV
13. Creative Industries Research and Consultancy Unit, University of Hertfordshire
    Film/TV, Digital/Media, Games
14. Institute for Screen Industries Research, University of Nottingham
    Film/TV, Games
15. National Film and Television School
    Film/TV, Digital/Media

Main focus: Games
16. Serious Games Institute, University of Coventry
    Games, Digital/Media

Creative Industry Clusters in England

- A: Bath
  - Arts and Antiques
- B: Brighton
  - Arts and Antiques
- C: Bristol
  - Architecture
- D: Cambridge
  - Arts and Antiques
- E: Guernsey
  - Publishing
- F: Manchester
  - Advertising
- G: Oxford
  - Arts and Antiques
- H: Slough
  - Architecture
The UK-wide and detailed maps (see Map 1 and 2; Appendix Seven and Eight) provide a visual means of exploring indicative patterns of industry-education engagement, overlaps between creative clusters and university-based activity, and a provisional look at local geographic relationships.

Whilst the majority of creative industry engagement initiatives identified are project-based, mapping analysis found considerable overlaps between their sub-sector focus. Thus, delineation of the major HE hubs into Film/TV, Digital Media, Games and Design is a rough guide to where Knowledge Exchange activity is ‘visibly’ high in a particular sub-sector. Indeed, two (2) major HE hubs contain more than one Knowledge Exchange centre (Bournemouth University and University of the West of England) and, therefore, 16 centres are named on the UK-wide maps (see Map 1 and Map 2). Listing of the HEIs and centres are given in Appendix Two.

Four (4) of the eight (8) major creative business clusters identified by NESTA (Chapain et al., 2010) overlap with this project's major HE hubs. These overlaps are referred to as Knowledge Exchange ‘hotspots and are located around: Bath, Brighton, Bristol and Manchester/ Salford (see Map 2). An analysis of the concentrations of sub-sector activity mentioned by Chapain et al. (2010: 13) reveals an overlap between major HE hubs with high industry activity in the same sub-sector focus in Lancaster, Manchester (Salford) and Brighton.

Mapping work also identified the main Business Schools with significant levels of creative industry engagement and/or research expertise. Of overlaps between the major HE hubs, main Business Schools and creative business clusters, five (5) of the ten (10) Business School hubs overlap with major HE hubs as follows: Aston and Birmingham Business School both overlap with the Birmingham major HE hub; Warwick Business School overlaps with the Warwick Digital Laboratory; Lancaster University Management School overlaps with ImaginationLancaster; and Bath School of Management overlaps with the Centre for Digital Entertainment.

Three (3) of the eight (8) creative business clusters overlap with Business School hubs (Bath, Cambridge and Oxford). The other creative clusters (of Slough and Guildford) are likely to engage with not only their local HEI but also London-based universities that were
not reviewed for this project. These results highlight the need for further investigation of industry-HE engagement dynamics beyond a quantitative mapping exercise.

Looking at NESTA’s interactive maps at a local level (see Appendix Eight), geographic relationships are revealed between a local concentration of creative business activity and the location of a major HE hub and its sub-sector focus. In-depth findings for each of the 16 major HE hubs are given in Appendix Eight and Appendix Nine, presented under the target sub-sectors of: Film/TV (3 centres); Digital Media (10 centres); Games (1 centre); Design (2 centres) and the additional Business Schools (10 centres). Most HE centres are located near creative businesses but the level and type of activity vary considerably. Local mapping found an overlap between cluster activity and HE sector focus in only three (3) of the Digital Media hubs and Film/TV hubs (in Bournemouth and Bristol).

SUMMARY OF RESULTS

<table>
<thead>
<tr>
<th>In summary, the mapping:</th>
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<tbody>
<tr>
<td>Examined</td>
</tr>
<tr>
<td>69 HE centres of excellence involved with creative industries;</td>
</tr>
<tr>
<td>24 Business Schools</td>
</tr>
<tr>
<td>Identified</td>
</tr>
<tr>
<td>16 major HE hubs; 8 creative business clusters;</td>
</tr>
<tr>
<td>10 Business Schools</td>
</tr>
</tbody>
</table>

Of the HE centres, a main industry focus was:

<table>
<thead>
<tr>
<th>Identified for Film/ TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>31 HE centres</td>
</tr>
<tr>
<td>3 hub specialists</td>
</tr>
<tr>
<td>Identified for Digital Media</td>
</tr>
<tr>
<td>53 HE centres</td>
</tr>
<tr>
<td>10 hub specialists</td>
</tr>
<tr>
<td>Identified for Games</td>
</tr>
<tr>
<td>21 HE centres</td>
</tr>
<tr>
<td>1 hub specialist</td>
</tr>
<tr>
<td>Identified for Design</td>
</tr>
<tr>
<td>40 HE centres</td>
</tr>
<tr>
<td>2 hub specialists</td>
</tr>
<tr>
<td>Identified for Business School</td>
</tr>
<tr>
<td>24 HE centres</td>
</tr>
<tr>
<td>10 specialists</td>
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</tbody>
</table>

Interpretations

Based on analysis of the visual maps of England and database (see Map 1 and 2 above, Appendix Six and Seven):

There is evident geographic overlap between NESTA’s top four creative industry clusters in Bath, Bristol, Brighton and Manchester/ Salford and major creative industry-HE
engagement hubs, albeit not with matching main industry foci. It is these places that are arguably Knowledge Exchange ‘hotspots’.

However, there is no direct causal relationship between a major HE hub’s sub-sector focus and the main sub-sector focus of a nearby creative industry cluster. For example, major HE hubs specializing in Digital/Media are identified in Bristol, Bath, Brighton and Manchester/ Salford; whereas the main sub-sector focus of industry activity in Bristol is Architecture, in Bath and Brighton is Arts and Antiques, and in Manchester/Salford is Advertising. That is not to say there is no Digital/Media activity in these cities but on average, its level appears to be lower than other sub-sector activity. The reader is reminded that data on creative businesses are contentious because of problems with statistical accuracy and particularly at a local level.16

Several points are pertinent here. Desk-based research shows universities engage with creative businesses far beyond their immediate local environs. In addition, the more detailed maps capture only a small geographic area and do not tell the whole story of a HE centre’s situation. For example, REACT and Pervasive Media centres led by University of the West of England appear to be located in an area of relatively low creative industry activity (see Appendix Eight). This is unsurprising because the university’s main campus is located on an out-of-town site but the HE hub’s Knowledge Exchange programmes are based at Watershed in central Bristol. Similarly, Lancaster University is an out-of-town campus site (see Appendix Eight) but the ImaginationLancaster hub engages with a widely dispersed Design sub-sector (local, national and international).

According to mapping analysis, there are only two (2) regional overlaps between a main concentration of creative industry activity (based on location quotients) and major HE hubs in the same creative sub-sector.17 An overlap was found between high Design activity (‘Designer Fashion’) in the North West (Chapain et al., 2010: 13), and that region’s major HE hub ImaginationLancaster at Lancaster University (see also point above and Map 2).

16 NESTA data for the detailed maps may distort measures of creative business activity at a MSOA level because of statistical unreliability at such a local level. Furthermore, some sub-sectors with high numbers of micro sized businesses and/ or owner-manager businesses will not be fully captured in the NESTA data. These problems may, therefore, distort an area’s level of creative activity but the data are sufficiently robust for the purposes of this research project.

17 A brief explanation of location quotients is given in the Glossary and Appendix Eight. The reader is sign-posted to NESTA’s website for further details (see Footnote 12).
Another overlap was found between high industry activity for Software and Computer Games in the South East (*ibid*, page 14) and the major HE hub in Brighton. **A third regional overlap** was found between Software and Computer Games industrial activity around Manchester and Blackpool, and the Digital/Media HE hub in Salford.

Maps of creative industry activity highlight locational discrepancies between a HE hub’s main sub-sector focus and clusters of creative business activity in a relevant sector in the surrounding area. Whilst five (5) Digital Media HE centres are based in the South West area, activity in the Software sector is actually higher in the South East where only one major HE hub (Brighton Fuse) was identified. Several interpretations are suggested here. First, the South West region covers the largest geographic area and creative industry activity is widely dispersed outside the urban cities of Bournemouth, Bristol and Bath. This dispersal will, therefore, distort the regional average for business activity in software and computer services. Second, creative businesses located in the South East are likely to interact with HEIs in the Greater London area as well as Brighton and, therefore, the area’s business-university engagement is higher than the mapping shows.

A number of major HE hubs demonstrate a trend towards multi-partnership and multiple centres within a single HEI that reflects the Research Council’s support of such collaborative practice. Two (2) universities in the ‘hotspots’ hold more than one main engagement hub - namely, University of the West of England (2 hubs) and Bournemouth University (3 hubs) (see Map 1 above). Noteworthy is the multi-institutional approach taken by the AHRC Knowledge Exchange Hubs including REACT that is led by the University of the West of England in partnership with three other universities (Bristol, Exeter, Bath and Cardiff). Another example of multi-HEI collaboration is the EPSRC-funded Centre for Digital Entertainment which is a partnership between the universities of Bath and Bournemouth. The Horizon Digital Economy Hub is a partnership between the universities of Nottingham with Cambridge, Reading, Exeter and Central St Martins (London).

Major HE hubs are not evenly spread across England (see Map 1 and Map 2 above). With the exception of the Film/TV hubs, there is strong representation of business-university engagement in the South West rather than South East and East (London was not included in the mapping). However, several of NESTA’s creative industry clusters are located towards the South East and East, including Slough, Guildford and Cambridge.
Business Schools with ‘visible’ engagement with the creative industries are located along an almost straight line from Exeter to Cambridge, including Bath, Oxford and Cranfield. Three (3) of the ten (10) identified Business Schools are located around Birmingham. Only two (2) Business Schools are located further north. Co-location with major HE hubs was found in Birmingham, Lancaster and Bath. Overlaps with creative business clusters were found in Cambridge, Oxford, and Bath.

Eight of the 16 major HE hubs are part of universities which also offer workspace for creative businesses. Two (2) of these are also co-located with Business Schools with creative industry expertise, namely the universities of Bath and Lancaster. Lancaster University and Salford University also overlap with major industry concentrations in Design and Software respectively. The AHRC Knowledge Exchange Hub at Lancaster is, therefore, the only major HE hub that demonstrates a combination of workspace for creative businesses, a Business School with creative industry expertise and an overlap with a major industry cluster in its main sub-sector focus (Design).

Based on analysis of the detailed local maps (see Appendix Eight and Appendix Nine):
Twelve (12) out of the 16 major HE hubs are located directly in areas with higher than average industry activity in one or more of the project’s target sub-sectors. Bearing in mind some HEIs host more than one hub, the 12 HE hubs and sub-sector activity are located at:

1. Universities of Bath (Software)
2. University of Bournemouth (Software)
3. Arts University College Bournemouth (Software, Designer Fashion)
4. University of Bradford (Software)
5. University of Brighton (Software)
6. University of Sussex (Software)
7. University of Hertfordshire (Software, Radio and TV)
8. University of Teesside (Designer Fashion)
9. University of the West of England (Software)
10. University of Warwick (Software)
11. University of Salford (Video, Film and Photography)
12. National Film and Television School (Video, Film and Photography, and Radio and TV)

The four (4) major HE hubs not located directly in an area with above average creative industry activity are the universities of: Nottingham (Film/TV), Lancaster (Design), Coventry (Games) and Birmingham City University (Digital/Media). With the exception of
Birmingham City University, all of these HE hubs are part of universities offering business parks for creative businesses (Nottingham’s workspace launched in June 2012). Birmingham City University, whilst not offering a business park, is expanding its city campus to support creative industries and offer media and TV facilities, which will open in September 2013 and aims to increase industry activity in relevant sub-sectors. Of these four universities, Lancaster University is located in an area with average activity, Birmingham City and Coventry in areas with lower than average activity and Nottingham partly overlaps an area with average activity. While there is no direct causal relationship between these major HE hubs and their nearby creative clusters in terms of an overlap in sub-sector focus, geographic proximity per se would appear to be an influencing factor.

The strongest overlap between a concentration of creative industry activity and a HE centre of excellence can be found in Digital Media HE centres and concentrations of creative businesses operating in Software. This overlap may be explained by the decision of many HE hubs, despite also working in the fields of Video, Games and/or Design, to list Digital Media as their main industry focus. Arguably, Digital Media has a more popular appeal to students and industry partners and allows greater scope for convergent R&D.

Other findings
In addition to the interpretations presented above, other findings show:

- The majority of HE centres of excellence offer a range of business-focused services such as business incubation/start ups space, consultancy services, hot desk facilities and professional training for company staff and freelancers, or are part of a HEI facility offering workspace for the creative industries. Over the last decade, HE-owned science and technology parks have developed in order to attract businesses, including creative ones, with the goal of building networks and creative clusters and encouraging collaboration in doctoral programmes and innovation. MediaCity UK (Salford University) exemplifies this co-location strategy for industry-education engagement with over 50 creative businesses based in the Media Village as well as many more non-creative businesses on site.

There appears to be an emphasis placed on the ‘softer’ end of Knowledge Exchange such as business skills development, staff training, product development events, panels and networks. Whereas there is less ‘visible’ evidence of ‘hard’ Knowledge Exchange through access to technical facilities, and few examples of major R&D
innovation projects with creative businesses that result in intellectual property (IP). This does not mean that success stories do not exist but they are not obviously promoted in the public domain.

- R&D collaboration with businesses is most often mentioned as the primary driver of a HE centre’s engagement. While HE centres make reference to ‘industry partnerships’, the majority either name a few high profile companies or do not name them at all. Investigation of named companies found that most are local to the HEI and are micro or SME sized (and reflects the profile of businesses generally in the creative industries). Of major HE hubs, most mention collaboration with larger and/or high profile industry partners including Aardman, BBC, BT, Channel 4, Frontier Developments, Hewlett Packard, Nokia and Sky. HE centres with an industry focus on Digital Media (including Software and Design) are more likely to name their industry partners than those with other sub-sector focuses. However, it is difficult to understand the nature of the ‘partnership’ and the outcome of the collaboration.

It is understandable that large corporations (such as BBC, Channel 4, Hewlett Packard, Disneyworld) have the capacity to engage with different HE centres because of their staff and R&D resources. Their names are acknowledged on different HEI websites and as members of industry panels. Whereas, those named smaller businesses are more likely to be located close to the HEI.

The intricate infrastructure of creative clusters and networks across England acts as an effective mechanism for bringing together local creative businesses, public agency support personnel and HE academics and support staff and often extend to social enterprise and community groups working in the creative industries. Ranging from the generic to the specific sub-sector and discipline, these groupings are evidently valued by many of the HE centres as a means of forging and managing external relationships at a local, regional, national and European level. In addition, the AHRC Knowledge Exchange Hubs and other Research Council initiatives encourage more extended networks.

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18 University connections are maintained through, for example, membership of regional university associations (such as Universities South West), Clusters 2020 project and engagement with Research Councils and their programmes.
Of 69 HE centres of excellence examined, only 19 centres explicitly mention international companies on their websites. Most notable are: ImaginationLancaster (Lancaster University) and Bristol-based REACT hub who both mention Microsoft; Centre for Fine Print Research (University of the West of England) mentions Hewlett Packard and Canon Europe; Centre for Digital Entertainment (universities of Bath and Bournemouth) mentions Disney Research and Sony Entertainment.

Discursive literature (academic and independent reports) on industry-HE engagement is generally written from a HE perspective, emphasising how the HE sector can and does support growth of the UK’s creative economy. Indeed, testimonials on the major HE hub websites and case studies in public policy documents and independent reports reinforce this positive message. Notwithstanding the good and effective practice, less attention is given to the nature of industry’s contribution to Knowledge Exchange and engagement. For example, online promotional information places the emphasis on a HE centre’s offer of business services, R&D expertise, student placements and innovation spaces. Recent Research Council funded initiatives raise the profile of industry’s role in R&D and innovation, such as the TSB-funded Creative Industries Knowledge Transfer Network (CI-KTN) and competitions, as do the AHRC Knowledge Exchange Hubs. However, the two-way flow is not generally reflected in the promotional text on HE centre websites.

Navigation of online resources relies on a visitor’s familiarity with academic language and knowing what s/he is looking for on the website. Few HEIs provide easy signposts to non-academic visitors and few HE centres provide links to local business clusters or trade associations, public-funded agencies or give practical examples of engagement outcomes. Large companies are likely to be more familiar with IP and R&D collaboration protocols but websites give limited explanation to the more cautious SME business. Entry routes into Knowledge Exchange opportunities vary considerably, including dedicated web pages, links to event calendars, seminar notices and conference programmes but are not always straightforward for a non-academic visitor. Issues of navigation and transparency are critical to attracting smaller businesses and new entrepreneurs and especially to their first impressions.

Of non-creative industry sectors cited in HEI’s collaborative projects and activities, most frequently mentioned are Technology, Computing/IT and Medicine, with other
sectors including Engineering, Environment, Transport, Health, Sport and Leisure. Mapping revealed insufficient evidence on inter-disciplinary engagement with creative businesses to justify a robust statement.

- Because the project’s database was compiled from mostly information gathered from HEI websites and industry-education reports and policy literature, this report’s findings and interpretations are dependent on how HE centres present themselves on the internet and in the public domain. Some HEI websites provide no or little evidence of creative industry engagement. Although major HE hubs were expected to have a high online and visible public presence, it is highly likely that not all websites were accurate representations of the hubs’ actual industry engagement.

Findings from the mapping exercise raise questions for further investigation such as: is the proximity of a HE hub to creative business activity per se the critical factor?; what other dynamics are involved in connecting creative businesses to HE expertise?; what lessons can be learned from current Knowledge Exchange models in HE ‘hotspots’ and ‘hubs’? The project’s second stage briefly explored issues of geographic proximity as part of the scoping consultation with experts from strategic development organisations, HE and the private sector.
**Part 3: Understanding Knowledge Exchange activity and creative businesses**

**Introduction**

The work outlined in Part 3 of this report comprises findings from a series of roundtables and interviews with people working in the area of Knowledge Exchange and the creative economy. The consultation stage was undertaken by Paul Owens and Callum Lee of BOP Consulting with support from Creative England. The critical discourse is intended to complement the mapping exercise described in Part 2, providing additional depth, richness and further examples to contextualise findings. In particular, the consultation stage aimed to assess:

- success factors and challenges around engagement;
- types of Knowledge Exchange (models) and their applicability;
- the role of geography in Knowledge Exchange activity (and so relates to the mapping).

Findings from the following pieces of work were analysed:

- three (3) roundtable sessions of approximately two hours duration held in London (25 May 2012), Birmingham (29 May 2012) and Manchester (31 May 2012) – a cross-section of participants were invited from strategic organisations, HEIs, creative businesses and other relevant organisations.
- twelve (12) scoping and or follow-up interviews were conducted with those involved in aspects of Knowledge Exchange activity.

Each roundtable was designed to elicit a specific perspective and so had a corresponding type of attendee. The London roundtable mainly consisted of representatives of strategic stakeholder or research institutions. Birmingham and Manchester roundtables had an approximately equal split between those representing HEIs and those representing or from businesses in the creative industries, almost all of whom had some involvement in Knowledge Exchange activities. Of the ten interviewees, the majority were from HEIs. For a full list of participants, see Appendix Four. Throughout, HEIs were found to be far more engaged than businesses with the Knowledge Exchange agenda.
Summary of key findings
The main findings from the research can be summarised against the key themes as:

1. Models of Knowledge Exchange
- Understanding and managing value is central to any discussion of successful models of Knowledge Exchange.
- Rather than talking about individual models of successful Knowledge Exchange (for example, what combination of activities works well together), roundtable discussion identified specific characteristics that reinforce findings from the Hidden Connections report (Hughes et al, 2011).
- Specifically, successful Knowledge Exchange activity is Informal, individual and network-led; appropriate for a business’ stage of maturity; highly collaborative; highly networked; cross disciplinary; accessible and brokered; including a systematised approach to innovation; providing access to finance; providing access to new markets; led by evidence and with a recognition of success.

2. Barriers to Knowledge Exchange activity
- Barriers around articulating the value of Knowledge Exchange that were mentioned include: matching outcomes with company ambitions; incentives and funding; articulating knowledge; providing appropriate propositions for businesses; problem of definition and establishing outcomes (which appears to have inhibited demand by small creative businesses).
- Barriers around awareness and accessibility include: making appropriate connections between HEIs and businesses; accessing information; establishing mutual trust.
- Barriers around professional and organisation cultures include: conflicting styles of innovation; tolerance of failure; adequate ambition; agreed outputs; tolerance of bureaucracy; timing.

3. Knowledge Exchange activity and geography
- Co-location of a university specialising in Creative Arts and Media research with creative businesses was viewed as having a positive effect on clustering, because of the perceived value of proximity including access to and retention of highly-skilled and talented graduates in that local area.
• Arguments against the importance of geographic proximity included the small size of the UK (especially in comparison to other larger countries) and the greater value of networks (social, disciplinary, and sectoral).

Models of Knowledge Exchange activity

All focus group attendees were prompted with a diagram that illustrated different types of Knowledge Exchange activity (see Figure 1 below). Interviewees were asked about success factors.

Figure 1: Types of Knowledge Exchange activity

<table>
<thead>
<tr>
<th>Activity</th>
<th>Typical outputs</th>
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</thead>
<tbody>
<tr>
<td>1. KNOWLEDGE</td>
<td>Create, share or organise new ideas and knowledge</td>
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<tr>
<td></td>
<td>Papers, books, articles, websites, workshops, conferences, presentations</td>
</tr>
<tr>
<td>2. CONTENT</td>
<td>Create, share or organise new content</td>
</tr>
<tr>
<td></td>
<td>Websites, archives, museums and content repositories</td>
</tr>
<tr>
<td>3. TOOLS</td>
<td>Create new instruments, tools and approaches</td>
</tr>
<tr>
<td></td>
<td>Patents and other IPs; Informal IP advantages</td>
</tr>
<tr>
<td>4. ENTERPRISE SUPPORT</td>
<td>Support entrepreneurship</td>
</tr>
<tr>
<td></td>
<td>Spins offs, start up incubators</td>
</tr>
<tr>
<td>5. TRAINING</td>
<td>Talent and skills</td>
</tr>
<tr>
<td></td>
<td>CPD</td>
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<tr>
<td>6. FACILITIES</td>
<td>Access to technical equipment and facilities</td>
</tr>
<tr>
<td></td>
<td>Access to specialist equipment and staff expertise around operation</td>
</tr>
<tr>
<td>7. NETWORKS</td>
<td>Build and convene networks</td>
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<tr>
<td></td>
<td>Networking and introductory events, conferences and workshops, festivals, exhibitions</td>
</tr>
<tr>
<td>8. CONSULTANCY</td>
<td>Consulting and bespoke research</td>
</tr>
<tr>
<td></td>
<td>Research and consultancy</td>
</tr>
</tbody>
</table>
UNDERSTANDING AND MANAGING VALUE

Central to the discussion around models of Knowledge Exchange was the value that can be developed for all parties in a transaction. Generally it was felt that the offer to businesses needs to be strengthened. At a basic level, this was around reinforcing the recent argument around the distinction between Knowledge Transfer (where knowledge is passed from HEI to business), and Knowledge Exchange (where there is a flow of knowledge in both directions). Comments included:

“We’re operating in this kind of scenario in a model of Knowledge Exchange that HE gives the knowledge. But what we find is that to get research funding it’s very difficult. The relationship is not necessarily one way now. It’s emboldening another culture and it’s about what we can get from the industry. “

“It needs to be a more two-way process.”

“When I’m thinking about engaging with HEIs it’s on a practical level, it is an exchange and it’s a two way thing.”

Participants also emphasised the term “knowledge” was problematic, arguing that the idea of neat, parcels of knowledge being passed backwards and forwards was missing the true nature of a highly collaborative and iterative process. The term “knowledge” prioritises the perceived benefit of the HEI in the encounter, as they are most concerned with its generation. Businesses have a different conception of value, commenting:

“It has to come down on what the impact is on businesses? Where is the value that you are getting?”

For businesses, the value to be gained from collaboration appeared to be more straightforward and focused on commercial profit. One representative from a film production business put it succinctly as:

“I’m looking to HEIs to give me new ideas, fresh ideas, and to keep me in touch with technology changes.”

Broadly, the view was that Knowledge Exchange activity was HEI led rather than industry-led and that steps should be taken to repackage Knowledge Exchange as a truly two-way process by emphasising the role of, and benefits to, businesses.

Creative England is in a strong position to work with the AHRC to help address this issue.

Recommendation 2: Creative England and the AHRC to work together on existing Knowledge Exchange programmes. Creative England and the AHRC
could maximise their shared interests in existing programmes. For example: the AHRC could include Creative England in the selection process for any future AHRC Knowledge Exchange Hubs; Creative England could include the AHRC in programme development; Creative England could help disseminate findings from the current Knowledge Exchange Hubs and other research findings to creative businesses. In addition, Creative England could be invited to the future AHRC Knowledge Exchange Hubs’ networking events.

University remit

Participants mentioned that there was some conflict between the extension of Knowledge Exchange activity and the fundamental role of universities (that is, to research and teach). For instance:

“The danger is that universities become bound up with the labour market and driving the economy. Some sectors of science research are focused on supporting BAE. We should ask what is the role of universities, and it’s not propping up creative businesses, it’s bringing something no one else can bring.”

SPECIFIC CHARACTERISTICS OF SUCCESSFUL MODELS

Participants did not single out successful models in great detail but they did discuss some crucial characteristics that lie behind existing successful Knowledge Exchange models. Much of the activity described or cited by participants was at an Informal level, based on individuals or their networks. One person commented:

“For us, those are some of the key issues it’s about signposting excellent practice, language, and innovating new approaches and new ways of adding value to cluster development and knowledge exchange and to me that’s at the heart of the problem. Where it works well its fantastic and all that informal side of it. But the formal approaches aren’t really aligned to the needs of small businesses and the timetables. That’s going to become really important as we look more to SMEs to get us out of this sector.”

Others described the importance of the individual in Knowledge Exchange activity:

“I think we have a dysfunction about the things that we call KTPs and Knowledge Exchange - I think it doesn’t make sense. [It is more about] how we construct a relationship on an individual basis.”

“For most businesses it’s all about networking. Lots won’t know who to go to and who is worth talking to.”
“Certainly for us we try to do it through our networks and personal contents.”

An emphasis on personal contacts and one-to-one engagements was the primary reason that mapping was viewed as missing much of the ‘real’ Knowledge Exchange activity. This was considered to be “invisible” or “granular”. Referring to the map shown to participants (see Map 3 below), comments included:

“Do we take into account the role of individuals within this?”

“We’ve been looking at the clustering point. One explanation is it’s a granularity point, it’s not about the total numbers of people, it is about the granularity of each development. It’s about the individuals and networks.”

HEIs were considered to have an important role in creating networks (and especially in introducing smaller companies to larger ones). For instance:

“Another step here is around [providing access to] large corporates through the universities getting access to [smaller businesses]”

In summary, much successful activity was considered to focus on casual introductions and informal contacts through networks and network events.

To help stimulate this type of personalised interaction, the following additions to Creative England’s activity are proposed in order to encourage business-university engagement:

**Recommendation 5: Focus a future round of Creative England’s Film Networks Fund on developing specific; niche HE-business networks, working with the AHRC to provide match-funding and promotion.** While the first round of the Film Networks Fund was used to support specific networks, another round should focus on specific niche sub-sectors where networks are emerging. For example, digital creative industries (as in Birmingham), animation and modelling (as in Bath/Bournemouth).

**Recommendation 6: Extend networking events to encourage greater involvement by local HEIs and specialist HE centres and forge closer cooperation with them.** Creative business networking events bring together a range of industry practitioners and could be extended to include local academics and postgraduate researchers to explain the value they bring to creative sector development (for example, as guest speakers, panel members, event participants). Creative England, the AHRC and local Knowledge Exchange Hubs could join forces to help facilitate this cross-fertilisation.
HIGHLY COLLABORATIVE

Successful models are said to rely on highly collaborative approaches, at both a cluster level and level of individual activity. Participants were “embedded” rather than meeting occasionally and there was often a lot of face-to-face interaction. For example, at a cluster level:

“In the Birmingham area there’s lots of different activity but they’re all fighting each other for funding. If there was a clearer [central focus] they could work together better.”

Or at an individual project level:

“It’s about having a much greater degree of collaboration at an earlier point, so neither side is coming in from the outside.”

APPROPRIATE FOR BUSINESS STAGE: “THE LADDER OF OPPORTUNITY”

Formal and structured programmes of Knowledge Exchange activity need to be appropriate for the type and maturity of business and retain some flexibility. In particular, participants discussed a gap of provision for the “missing middle” – the gap between informal Knowledge Exchange activities for very small or start up businesses and the larger programmes that cater for large corporate businesses; and early stage activity that would allow businesses to be introduced to the process with very low commitment.

“It’s really about finding out what is relevant to each age of business.”

“One thing that I’m conscious of is creating a ladder of engagement to that. Small things like vouchers are about opening people’s eyes, then that can kick off the engagement and develop the relationships, which need to be mutually beneficial.”

To address this ‘missing middle’ gap, the AHRC could work with the strategic bodies to progress work on a new and shorter programme through:

Recommendation 8: Develop the Creative Knowledge Transfer Partnership: A shorter programme on the KTP model to help bridge the “missing middle” for creative businesses. The AHRC could work with the strategic group (see Recommendation 1) to progress development of a shorter KTP programme that takes account of the requirements of smaller creative businesses, filling the “missing

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19 Voucher schemes were successfully piloted in the West Midlands and Scotland, and are recommended by the Wilson Review (2012: 2). In October 2012, Universities South West launched an Innovation Vouchers scheme for SME and start-up companies operating in creative industries – see http://www.universitessouthwest.ac.uk
middle” between informal, project-based activity and larger more structured KTP programmes (such as the TSB’s KTP programme). This type of programme should offer: intense collaboration or partnerships over 10-26 weeks; cost around £10,000 to the business; minimum bureaucratic requirements; a rolling programme with rounds of activity that connect with innovation; ‘hack’ days/ (see Recommendation 7). The AHRC could work with Creative England on promotion of this programme to ensure creative businesses understand the value of participation.

CROSS DISCIPLINARY

Approaches that focus on different disciplines were also seen as important in the development of successful models. For instance, cross-overs between the creative industries and Information and Communication Technology sectors were seen as particularly effective:

“Broadly speaking, that idea of mixing creativity with entrepreneurship with technology is the focus on doing that…. we’re trying to get these teams talking together and there are some great examples, for example Ravensbourne. It’s not just a creative industries thing; pretty much every sector in the economy needs that.”

“Some of the most effective partnerships are between management schools working with Film businesses, Tech businesses working with Design…”

“It’s important that companies don’t just do R&D with people in their discipline.”

Participants noted the way in which the Technology Transfer model has evolved into Knowledge Exchange and that this contributes to a feeling of marginalisation amongst the creative industries Knowledge Exchange community. As an aside, it is noticeable that the creative industries (and certainly bodies representing them) were given scant mention in the Wilson Review (2012).

To help encourage cross-over between disciplines and creative industries, Creative England and the AHRC could:

**Recommendation 3: Promote the value of Knowledge Exchange in the creative industries to outside stakeholders as well as within the sector.** The AHRC and Creative England are well placed to work together to advocate the value of Knowledge Exchange to their respective constituencies. To help target their efforts, they could look at hosting shared events, workshops or programmes with organisations like the Technology Strategy Board, Universities UK, Council for
Industry and Higher Education, NESTA and The Work Foundation who are at the centre of current debates on Knowledge Exchange. By promoting the value of creative businesses in Knowledge Exchange activity, they would be helping to promote cross-disciplinary collaborations (see also Recommendation 7 on innovation and ‘hack’ days).

ACCESSIBLE AND BROKERED KNOWLEDGE EXCHANGE
Consultation revealed a role for an intermediary to translate, encourage and broker relationships and ideas, and get a business on the right rung of “the ladder of opportunity”. This sector specialist role is perceived as helping to make appropriate introductions and routes into creative clusters, in a similar way to the remit of Knowledge Transfer departments that now exist in HEIs but with a business focus. Some participants described this as the role of a “boundary spanner” (although this also includes an element of cross-disciplinary introductions). One participant summarised the conundrum as:

“How do you access the cluster?”

A way of encouraging cross-disciplinary collaboration and greater networking was suggested as the introduction of “spanners” into Knowledge Exchange activity that are able to bridge the gap between the different parties, make the right introductions, articulate the value dimensions and broker the connection between programme and business practitioner. A participant remarked:

“There’s an important role for “spanning” - that is reaching across disciplines.”
“Spanning bit in the way that HEIs probably work is in offering something that is potentially integrated across. We all tend to exist in disciplines silos because that is how universities tend to be funded. Cross disciplinary working isn't encouraged. You have to have a span that is by definition integrated.”

CASE STUDY: CROSS-SECTORAL APPROACH
Mixed Reality Lab, University of Nottingham
An exemplar of ‘spanning’ activity is suggested by the Mixed Reality Lab at the University of Nottingham that explore ‘ubiquitous, mobile and mixed reality technologies to shape everyday life’. Established in 1999, this is a dedicated facility where computer scientists, psychologists, sociologists,

20 For the Mixed Reality Lab research projects see http://www.mrl.nott.ac.uk/mrl-research.html
engineers, architects and creative artists collaborate on inter-disciplinary projects. An informal, multi-partnership, innovative approach has helped to develop a strong reputation and critically successful projects.

INCORPORATING SYSTEMATISED AND STRUCTURED APPROACHES TO INNOVATION

Some interesting – but not fully explored – comments were made about systematised approaches to innovation within businesses and fitting Knowledge Exchange within this. For instance:

“There’s enthusiasm at the technology end of the game but some tech businesses have also thought much harder about how you systemise innovation; it’s a two way street in internal innovation.”

This comment resonates with the Wilson Review emphasis on the need for Knowledge Exchange activity, and particularly R&D projects, to adapt to the innovation eco-systems of contemporary modes of content production.

ACCESS TO FINANCE

The researchers acknowledge that access to finance should have been included in the diagram (see Figure 1) and prioritised in overall thinking around Knowledge Exchange. This omission was particularly relevant to businesses. One participant emphasised:

“Where does finance come into this? I thought maybe in networks, until you then said that was more about art. But some of the more traditional hubs are made from networks etc. Often with the hubs, what draws businesses there is the presence of money. And what you have to think when you look at clusters is how to get the serious money there. That’s what really takes something from being two people in a room to it being a viable business.”

For creative businesses, participants emphasised the importance of finding the funding to participate in HE-based R&D activity. With economic constraints on budgets, businesses need cost-effective solutions and/or a strong case for investment in Knowledge Exchange.

Importantly, there is a role for Creative England to begin to find additional funding sources to help smaller creative businesses and HEIs engage in collaborative research activity in particular:
Recommendation 4: Broker and promote access to European Commission research funds for SMEs, particularly the Framework Programme 7.\textsuperscript{21} Based on a strong and growing reputation within the European Commission and European Creative Industries Alliance, Creative England has an opportunity to broker and promote industry-education partnership applications to EU funds with the support of the AHRC. In particular, the Framework Programme 7 offers two strands of relevance - Support for SMEs, and Research for SME Associations – which may provide funds for further activity and research with HEIs. These funding strands are on a rolling programme and so the criteria for selection changes, but they often require European partnerships to access. The Clusters 2020 project may help provide introductions and a further framework to fit this activity within.

ACCESS TO NEW MARKETS
Making introductions to key and new markets was also considered an important requirement for effective business-university engagement. For instance:

“We ought to be connecting businesses to where the money is i.e. healthcare and things like that.”

EVIDENCE-BASED AND WITH A RECOGNITION OF SUCCESS
Finally, there is a clear need to evaluate and constantly feedback on the effectiveness of different approaches to Knowledge Exchange. As one participant observed:

“It’s important not to just keep the public sector in there supporting bad ideas.”

Other participants mentioned the importance of approaches that help recognise success. For example, recognition through prizes and awards or other forms of validation and accreditation. Such endorsements would help in articulating the value of engagement to creative businesses.

To help find approaches that work, further research is needed that looks in greater detail at successful models of business-university engagement and – crucially – the project outcomes and longer term impact of major public investments in Knowledge Exchange activity.

Recommendation 13: Fund quantitative research into the success of different models of business-university engagement and their economic and social benefits.

\textsuperscript{21} Framework Programme 7 (FP7) is a major European Commission funded research programme aimed at supporting SMEs. For details see http://ec.europa.eu/research/fp7/index_en.cfm
impacts. Pending the outcomes of a literature review, further research could look at quantitative sources of information that might be able to provide a more objective view of the work needed, and more detailed understanding of where successful Knowledge Exchange models are found. This could also go some way towards quantifying the impact of HEIs on the creative economy and by sub-sector groupings. Research undertaken at Massachusetts Institute of Technology (MIT) across different Industrial sectors indicates the sort of level of business engagement that is needed for this programme (see Pertuzé et al., 2010). Furthermore, research on high impact partnerships is needed to inform future modelling, and key characteristics for replication.

DISTINCTION WITH OTHER INDUSTRIAL SECTORS

There were mixed opinions as to the distinction between approaches applied to the creative industries and those for other industrial sectors. For some, businesses in the creative industries are said to demonstrate a distinct style:

“My own finding is that the creative industries are more open minded to innovation and easier to work with then other sectors.”

However, participants from outside the creative industries and who have studied cross-sectoral approaches to Knowledge Exchange emphasised that the creative industries were not as distinct and singular as is often claimed. In particular, the style of collaboration in the creative sector was not viewed as either different or conflicting with the style of collaboration in other sectors – and so was not an obstacle to engagement. One participant stated this clearly:

“A unique thing for CI knowledge exchange [is perceived to be] around co-creation. You get the space to innovation because of the two knowledge bases... but I don't think that’s specific to the creative industry, that’s at the heart of it all in any industries. If you talk to UCL [University College London] that’s half what they see their mission as.”

This observation opens up strong possibilities around borrowing ideas from other sectors. In particular, participants mentioned some technology-related models that are transferable. For instance, ‘hack’ days which are used extensively in the ICT sector and which could be further applied (they are already in use in part) across the sectors within Creative England’s and the AHRC’s remits. They are also excellent ways of developing networks and ideas, and promoting cross-disciplinary working.

Recommendation 7: Set up a new programme of business-university innovation or ‘hack’ days. These low cost and creative introductory sessions help to
build face-to-face contacts and individual engagement and are at the cutting edge of new ways of thinking and creating (particularly cross-sectoral ones). Successful Knowledge Exchange partnerships have been built on and particularly looking across disciplines. They might be modelled on:

- **GAME5HACK**: a collaboration between Goldsmiths College and M&C Saatchi, which brings together for a 48-hour event with six teams of staff and students in competition to produce new interactive media.
- **PICNIC Innovation Day (Amsterdam)** which brings together cross-disciplinary groups of Creative businesses, HEIs and other industry to share co-creation workshops.

Creative England and the AHRC could support a new programme and broker partnerships between strategic businesses and academics from outside the sector (such as Health, Technology, Construction) and focus on specific industry-led challenges.

**FUTURE FOR KNOWLEDGE EXCHANGE ACTIVITY**
There were surprisingly few comments about the future of Knowledge Exchange activity, even when prompted. The main theme to emerge was HEIs’ need to differentiate themselves in the market and to better understand their role. Given a growing impetus for HEIs to take part in Knowledge Exchange activity, and the changing supply-demand dynamics of UK universities *vis-à-vis* students and users, it is imperative that they position themselves effectively and competitively:

"Compared to others, for universities 2012 and 2013 are going to be good years. These shouldn’t be seen as additional. Management schools do three things, teaching, research, practice and for the rest of universities we should think about how they will be better than others."

"Whether you’re an SME or larger business lots of our collaborations are about how to be concerned with it.... I think it’s about increasingly putting the student at the heart of all these interactions and then you have the chance to look at different models."

**EVIDENCE OF SUCCESS AND INFLUENCE**
During literature review and consultation work (particularly with strategic organisations), a lack of evidence currently available on the impact and effectiveness of Knowledge Exchange on sector development is a major issue. This was not, however, part of the
consultation brief but is worth noting here. Evidence cited during consultation was overwhelmingly qualitative (rather than based on quantitative evidence of impact). There is a clear need for strong quantitative evidence of the impact and effectiveness of Knowledge Exchange activity either in or outside of the creative industries. With such significant figures being invested by the public sector, quantitative study of impact and effectiveness across the sector are justified:

**Recommendation 12: Conduct a comparative literature review to look more carefully at the available research on the creative industries and to make comparison with that available in other sectors.** This should assess any available evidence on creative industries-HEI collaboration (including this document). Although there does not appear to be any impact research focused on the sector as a whole, there is likely to be evidence in the form of impact studies and evaluation for individual projects. This is a natural starting point for the development of a full brief for the research mentioned in Recommendations 12 and 13.

**Barriers to Knowledge activity**

Barriers to Knowledge Exchange between universities and businesses are the subject of recent research (Ekos, 2010; Hughes *et al.*, 2011; Mina and Probert, 2012) and governmental reviews (Wilson, 2012). Issues identified include: a business’ understanding of value; awareness of Knowledge Exchange activity; both industry and university staff’s issue with time and resources to engage; pace of technological change; and relevance of the HE ‘offer’ to small businesses. This section explores several barriers that are of strategic importance to growing a creative economy.

Roundtable attendees were prompted with a diagram of ‘barriers’ extrapolated from extant survey findings and literature review (see Figure 2 below). The diagram attempts to structure barriers as either for businesses, HEIs, or shared barriers. Interviewees were asked outright about barriers and challenges to engagement.

Overall, participants considered the diagram broadly accurate. However, further analysis of comments show that many of the ‘barriers’ attributed to one party are in fact shared by all parties. For instance, bureaucracy was inserted on the HEI side but there is a strong case that businesses just need to be more tolerant of it. HE personnel were equally frustrated at the constraining effects of internal bureaucracy.
In order to reflect on the above issues and challenges, the remainder of this section is structured according to the broad themes emphasised in the Models of Knowledge Exchange activity section (see above).

UNDERSTANDING AND MANAGING VALUE
Understanding, articulating and managing the value of a Knowledge Exchange proposition was seen as crucial in allowing HEIs and businesses to meet their core aims. It was also important from the HEI side, where funding, incentives for individual academics, or a perception of the value in the frame of an HEI’s core mission were important. If anything, this was seen to be the primary barrier towards Knowledge Exchange taking place – and applied to both creative businesses and HEIs. Participants emphasised:

“The secret is the “importance of getting the value proposition right for both the business and the individual”

“You should also understand what the drivers are for Universities.”
There were also some key barriers identified around understanding what value other partners could bring, especially in terms of skills, and how these could help businesses. In discussing business awareness of value, issues, participants commented:

“Businesses are often not aware of what they need for their businesses”
“It’s about demonstrating where the impact is on the bottom line. The value thing is crucial for that and it’s about knowing that the business coach is there.”
“You have to understand the business aspirations and work out how to get there and make the offer much clearer than it is now.”

Matching outcomes with ambitions
Participants emphasised the fundamental distinction between the work of an HEI and the work of a business in terms of:

- **Fundamental aims:** “There’s an asymmetry between what the university is interested in and what the SME is interested in.”
- **Risk and speed:** “If you think about it an academic’s whole mindset is around researched papers, peer review etc. Whereas a business just needs to get 80% of business right and quickly corrects the other 20% right – then you’ve got a business. If an academic does the same than their career is over. It makes them cautious, they triple check and cogitate and mull. If you did that in business where action is all important you’d die a death.”
- **Quality and commerce:** “You cannot distinguish the quality from the ability to sell it. Even art and design education it’s about doing the art and then tagging on the ability to sell it at the end.”

Incentives and funding
For HEIs, issues around value were often expressed in terms of organisational incentives and attracting the funding in order to undertake activity:

“The other thing from a university point of view is incentivisation. Why are the reasons that a particular academic might do it? We’re a massive organisation and the VC will say and do one thing and that gets mitigated down to individual academics. Even if all these things were true there’s still a fundamental value which is what the benefit is for the academic. There would be no mechanism for an academic to have got any reward whatsoever. I’ve changed that internally now there’s a monetary value, but there also needs to be a mutual benefit.”
“Supply side alignment is a massive issue. If you can’t localise and incentivise and align then it’s very difficult.”

HEIs also considered access to funding was sometimes a difficult process. One academic commented:

“When you get back to our institutions, it’s a huge entity; the red tape [from the AHRC and the EPSRC] is ridiculous, even for academics. It puts you off wanting to do these network bids. I’m in the middle of putting together a bid for a new research centre but in many ways it’s not worth it.”

Articulating knowledge

Part of the value argument was around the meaning of ‘knowledge’ and how it should be articulated and explained to businesses. An imprecise or misunderstanding will inevitably be challenging for a business to understand the value of Knowledge Exchange. For instance:

“We should articulate the different forms of knowledge because everyone talks about it as though it’s the same thing and it isn’t.”

“The problem with the concept of Knowledge Transfer and I think there’s pretty much everything wrong with it. First is that you can define what knowledge is and, second that you can define it as a parcel to be passed between two people... I think if you don’t understand these things you won’t be able to bring two sides together.”

CASE STUDY: INDUSTRY-LED APPROACH

HP Labs Innovation Research Program

The HP Labs Innovation Research Program (IRP) is part of this large international corporation’s Open Innovation initiative that aims to collaborate with universities and research institutes around the world. With a focus on technologies, HP makes an open call for proposals that address major scientific problems defined by and then assessed by industry rather than the academy. This competitive and business-led approach helps to ensure value is there for HP from the outset and its partners, allowing them to diagnose

22 HP Labs Innovation Research Program see
their own challenges and to anticipate the outcomes. From HP Labs’ perspective, they bring a global reputation and in-house expertise to this type of Knowledge Exchange and have resulted in a number of significant patents and technological breakthroughs.

Appropriate propositions for businesses
The challenge of articulating ‘knowledge’ links to the other challenge of appropriately articulating the proposition, especially for businesses. It was strongly emphasised that different businesses (of varying sizes, at different stages in business lifecycle, and operating in different sub-sectors) need different structured and/or flexible programmes to help them engage with HEIs. One participant emphasised:

“It will be very hard to get a Knowledge Transfer Partnership (KTP), the financial needs to be quite high because you need to be a larger business. Mini KTPs have been done away with. The AHRC has the KTP catalyst programme which was a mini KTP for a mini KTP. It’s like the gap of death in funding for a business, there’s that also in ways of doing KE. There needs to be different levels”

Problem definition and establishing outcomes
An interesting cultural challenge is the difficulty of finding and framing a problem (or issue) that needs to be addressed. For some participants, the problem changes throughout the Knowledge Exchange process and this presents challenges:

“We set a programme up between our Knowledge Transfer board in our business school and an economic development consultancy, and they came up with a proposal that looked at how you can more effectively mix paint... [and yet we’re trying to put together] a model based on mapping. That KTP fell apart because it wasn’t fit for purpose.”

“… I don’t see that as knowledge exchange I’m seeing that as a situation where both parties may not know what’s going to come from working together. And you should support that and provide that sort of environment for that to happen. It’s about saying we think there’s a benefit from working together over a period of time on problems that we’re not quite clear what they are yet although we may have some ideas. And we’re saying put it on the table and work interactively, that’s a creative process.”
Priority and capacity are value arguments

Another challenge around value is ‘priority’. As participants emphasised, issues around time and capacity are really issues around priority and recognising the value that participation in Knowledge Exchange activities can bring:

“Capacity is a critical issue.”

“Timing is never a huge challenge... is it another word for priority?”

AWARENESS AND ACCESSIBILITY

HEIs were acknowledged to be highly complex, often impermeable institutions. But equally baffling is the vast array of different creative businesses many of whom do not advertise what they do. Clearly, a significant challenge exists in finding appropriate partners, managing introductions, and brokering Knowledge Exchange activity.

Access to HEIs and businesses

Getting into institutions was considered a major barrier for small businesses, with one person arguing:

“Businesses… know that a lot of money goes to universities but we don’t know how it’s spent on issues that we can get involved in. The only real access to universities we have is through undergraduates.”

Silos within institutions were also considered a barrier, in part because they prevent officers with responsibility for Knowledge Exchange within HEIs from doing their job effectively. In part, this was a reflection of scale. One participant said:

“The HEI should be connecting with business support more clearly. I’ve tried to understand the offer and it’s hard to find. It took me two months to realise that there was a £200k mentoring scheme to help the sector two minutes walk from my office. It’s quite easy for these little silos to happen.”

Because of silos and scale, there remains a role in matching businesses to HEIs. In most institutions this appeared to be happening already, with Knowledge Exchange officers or managers employed to network and make these connections. But participants emphasised the need for new, smarter ways of brokering this sort of activity. This should continue to be at an individual, network level:

“One of the tricky things is trying to find the skills that we require... And trying to find the right people within that to draw into our ecosystem. Coming from the outside and trying
to find your way into [the HEI] is about finding the right mix of people that we should be looking for”

An opportunity for the AHRC and Creative England collaboration is in providing a matching service, to create a project placement scheme for academics:

**Recommendation 9: Fund and broker a project placement scheme to align with the Wilson Review recommendation.** The Wilson Review states ‘All full time postdoctoral research staff should have the opportunity to benefit from 8 to 12 weeks’ of work experience outside the academy every three years during their contract.” (Wilson Review, 2012, Recommendation 16, paragraph 5.6). The AHRC and Creative England could work together on funding and brokering a project placement scheme. The AHRC is able to provide access and promotion amongst academics, whilst Creative England is well-positioned to find sponsorship and broker these placements with creative businesses.

**Trust**

Finally, there is the challenge of trust and reputation. This was viewed as an important consideration that needs to be addressed through third party verification and validation or through making connections through networks and personal contacts. Solutions need to be appropriately incorporated into Knowledge Exchange structures and funding. No comments were made about trust being important because of IP issues, as might be expected. However, interviewees mentioned the issue of contracts that were not used or given only cursory attention. Participants commented:

“To create a relationship you have to have appropriate boundaries and to be trusting but sometimes the rigidity of the funding arrangements fights against that.”

“There’s a trust issue. I think that there doesn’t tend to generally be the case that people need to get verification and third party validation of the use of these programmes.”

“It’s about reputation and the development of these relationships.”

**PROFESSIONAL AND ORGANISATIONAL CULTURES**

Another group of challenges is around professional and organisational cultures and the difficulty for businesses and HEIs to address and find structures and approaches to work together. Creative England is unlikely to be able to make a significant difference in these
areas. ‘Culture’ in general was considered a barrier by some participants. Further themes around culture include:

**Style of innovation**
One participant emphasised the different styles of innovation and how these relate to timings:

“Academics as individuals overvalue invention over innovation. There are also challenges around timings – from a business it’s better to evolve and be quick than come up with entirely new things slowly.”

**Allowing failure**
There were conflicting views around business and HEI tolerance of failure and how this is portrayed. One person remarked:

“It’s about allowance of failure. There should be some way of failing within this. Learning within this; the challenge for HEIs that there should be an allowance of failure. You’ve always got to show good news, even though bad news is often good news.”

**Ambition**
Another role is around ambition and what companies want to achieve with their businesses - for instance, high growth vs. lifestyle. This was a particularly strong theme at the Birmingham focus group, where participants felt it was particularly relevant to businesses in that city. Participants phrased this as:

“There is an issue around ambition; how ambitious the companies are.”

“Horizons. Some need it shaken up.”

“Many businesses are “Happy with their lot” [tall poppy syndrome] or you will continually go around with freelancers who are happy with what they are doing.”

**Outputs**
A further conflict is around the required outputs from each side of the collaborative partnership.

“It’s that mix between an ecosystem and culture that creates a value system which are not typically driven by publication. It’s a different type of publication.”
Tolerance of bureaucracy

Bureaucracy and paperwork, as well as institutional limitations, were viewed as a significant challenge. This was particularly in terms of accessing funding and from the HEI perspective. For instance:

“There’s a fundamental thing that you need to look at the strategic needs in a wider context. Universities are complex organisations with significant bureaucracies that limit what you are trying to do.”

Timing

Timing was considered a challenge in terms of keeping up to date with current developments (although of course this is also one of the aims of much Knowledge Exchange activity) and managing the academic year. Most importantly, it was the timescales for project completions that were problematic (businesses being used to shorter deadlines than HEIs). Comments included:

“The academics are a year or two years behind the policy that’s coming out.”

“The project I work on has already said that we will investigate HEIs because we’re aware that there’s the value of the project. But the problem is that the pace and cycle of Universities is not the same as ours. We’ve got a briefing network with C4 in July and I’ll be interested to see how many academics are there. The creative businesses will be there in force.”

CASE STUDY: BUSINESS-FOCUSED ENGAGEMENT APPROACH
The Centre for Digital Entertainment, University of Bath, Bournemouth University

This EPSRC-funded research centre offers a unique programme that has been re-structured to meet the needs of businesses in Computer Games, Animation, VFX, Visualisation and Graphics and notably their shorter timeframes. The award of an Engineering or Professional Doctorate in Digital Media (PhD) is built up through short project work rather than the longer and single project frame of a standard PhD. A number of projects combine to form a ‘portfolio thesis and progress reports show promising results for both businesses and students.

23 Centre for Digital Entertainment (CDE) see http://digital-entertainment.org/info-applicants.html
Other cultural issues

Other cultural issues mentioned during discussion included:

- Academic tendency to not like “to lose control of a project”
- Challenges of gaining institutional support: “It’s also about encouraging SMEs to change as well, not just about the HEI, you have to show people that they have to make room and time for a project, it’s not going to function in the same way that other parts of the business do, you need to have buy in from the entire company.”

These cultural issues are significant challenges and there are a number of approaches that might help in tackling them. In particular:

**Recommendation 10: Sponsor an OpenIDEO competition on how to design better programmes.** IDEO is a design and innovation firm that developed OpenIDEO as an online crowd sourcing tool to find new ideas for major high profile problems or “challenges” (such as that of the European Commission on the Digital Agenda or Intellectual Property and Film Archives). Creative England and the AHRC could sponsor an OpenIDEO challenge on improving creative business engagement with HEIs to source new ideas and approaches to problems of Knowledge Exchange.

**Recommendation 11: Use a service design agency to rethink engagement with creative businesses.** Service design is typically used to help plan or organise a process or structure to improve its quality and effectiveness, especially in processes where the culture of one side (for example, customers) does not match with the requirements of the other (for example, providers). The AHRC and Creative England and/or a consortium of HEIs could commission a service design company (such as ThinkPublic) to look more closely at the process by which Knowledge Exchange activity currently happens and to restructure and redesign the process. The findings should inform future programme design.

**Knowledge Exchange activity and geography**

All roundtable attendees were prompted with a map to show preliminary identification of major HE hubs across England (outside of London) and in relation to NESTA’s creative clusters (see Map 3 below).
Map 3: To show overlaps between the location of major HE hubs and creative business clusters (preliminary visualisation)
This map was a first attempt at locating Knowledge Exchange activity in relation to ‘where’ creative businesses were concentrated. In many ways the map was presented as a deliberate provocation to stimulate discussion and test the idea of visualising Knowledge Exchange activity in a geographic sense. The map was later amended (see Part 2: Map 2). Interviewees were asked outright about the role of geography and clustering in Knowledge Exchange activity.

HE ROLE IN CREATIVE CLUSTERS
Participants were asked about the role of HEIs in helping to develop local clusters of creative businesses. There was strong agreement that HEIs were important players in clustering. However, evidence was more anecdotal than robust about the causal relationship. Participants asserted:

“If we were to show you our map about the links to other dominant higher education functions you would see a synergy. For example, you’d see BCU [Birmingham City University] doing fine work with a unique cluster of businesses. You’d see Bournemouth propelling a massive cluster of VFX, creating Soho on Sea with Framestore. I could give you loads more examples.”

“Firstly we’ve been trying to create those clusters and more importantly they have been creating themselves over a longish period of time though on those areas that aren’t on this map. It’s dangerous to say that there’s no relationship between subject matter and cluster type when all our research says precisely the opposite. I fully agree with the findings in the Universities UK report which says that in lots of cases HE has driven that clustering.”

“I’d argue that Tech City is a result of the University of the Arts, actually.”

Proximity and geography
Proximity and geography were considered crucial aspects of HEI’s Knowledge Exchange development, with HE facilities acting as an important function for creative businesses to cluster around. Participants observed:

“Infrastructure is potentially driven by geography. For instance, digital infrastructure is driven by investment and that is a geographical issue. Like it or lump it, London and the South East is where the markets are.”

“Geography does matter in our appallingly fragmented landscape that we are currently in.”

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“The University can host and be the house for those events. In the West Midlands, we still talk about it being fragmented, whether there is enough of that ecosystem to build these things together.”

**Strategic cluster development**

Geography has clear political and bureaucratic implications. Participants mentioned the end of Regional Development Agencies (RDA) and Regional Screen Agencies as leaving gaps in strategic leaderships at a regional and local level:

“We’ve moved from a period where we did have to do things regionally and equally and we’ve moved into an area where everything should go to the wall. Now we’ve got to identify together where the maximum impact should be, whether they’re HEIs etc and be sure how we’re can maximise investment in UK Plc. It’s about how we regroup in a deregulated world.”

“You have this formal layer of government but you don’t know what’s actually going on the ground. It’s important to know what is happening at a formal level. The ecology that’s challenging because it doesn’t fit into the way that administrations work and think, especially when it’s a hybrid offer, that’s where lots of the activity is happening.”

The majority of participants did not think any sectoral strategic organisation had taken a leadership role in the development of these approaches at a regional or national level from the industry perspective. They noted the role that the AHRC has played at a UK-wide level in stimulating this activity with HEIs and the role of Creative Skillset’s accreditation system.

Creative England and the AHRC have an opportunity to help direct industry-education engagement around Knowledge Exchange activity with Creative and Digital Media and Games. To do so, they must work closely with others to ensure activity is complementary, distinct and co-ordinated.

**Recommendation 1: Establish a strategic and distinct group on HEI-Creative Business Engagement:** Creative England and the AHRC could bring together a bi-annual strategic group including the main sector development bodies (including those represented at the roundtables) to discuss existing activity, ideas and solutions suggested in this report, and plan shared work programmes. This group should complement and enhance the work of groups such as the DCMS-led Creative Industries Council. Participants might include amongst others: Arts Council England, the Design Council, Creative Skillset and C&CSkills, other Research Councils and,
from a local perspective, Local Enterprise Partnerships with a focus on a creative economy.

**Importance of a supply chain**

One weakness of the offer outside London is the lack of a clear supply chain that businesses can cluster around. With the exception of the BBC at Salford, participants believed there were no major buyers of creative services that would allow projects to develop around that commissioner. A participant commented:

“Needs to have an obvious supply chain that encourages growth and that gets intra-business networks going but also into HE as well“.

In Birmingham, lack of local supply chains was viewed to be a major factor in the current fragmentation of the sector. There was no major supplier to act as a central node to the networks in the local area.

**Facilities**

There were perhaps surprisingly few mentions of technical facilities (for instance, render farms, studios, IT equipment) acting as key assets for attracting businesses.

“It does also depend on the other facilities that the University has got on offer. If they have an approach that’s user friendly, technology that’s accessible. It’s quite a complicated set of interrelationships.”

Participants were prompted by a description of access to facilities which they described as “relatively low value” and which was clearly not considered an important factor for them.

**Creative talent retention in HEI clusters**

HEIs were recognised to be a source of new creative talent that was considered an important factor in clustering. Access to a local skilled workforce was associated with a supply of talented and qualified graduates, with appropriate STEM backgrounds who remain in a locality. However, it was not clear whether skilled and talented labour was considered genuine ‘knowledge exchange’ or not. Comments included:

“We were involved with a project with Salford last year and it came a bit too late, because the course and context was absolutely fantastic but none of the industry knew about it. I’ve had two graduates come to work with us and it’s amazing because it gives them the opportunity to think creatively about business problems. And it gives us the chance to talk to undergrads and graduates and course leaders about the skills we need from it.”
“Clusters are very connected to leaving University. You need a community to make film. And your network is really important in helping you develop that. Maybe if you’re doing something where you spend more time on your own, like art, then it’s less important to have those relationships.”

“There’s interesting findings around the population of students after they graduate and the extent to which universities support Knowledge Exchange and how well they do that.”

Clusters and the Knowledge Exchange offer outside London

A significant offer of Knowledge Exchange activity is available outside of London that is unique and potentially stronger than London. Reasons were suggested of:

- **Lower costs:** “Anecdotally a couple of investors I’ve spoken to are suggesting that they are encouraging people to locate out of London because it increases their chances of surviving the first two years because you’re not spending money like water on property.”

- **Clearer, more accessible offer:** “You have other opportunities where you come somewhere like Birmingham because you have a clear offer, obvious places to go, less competition to get to those places. In non-London context it’s easier to create the ladder of opportunity.”

Further evidence is needed to inform and build relationships at the local scale and to provide some additional quantitative statistics on the current ‘offer’:

**Recommendation 14: Commission further research to gain a national view on clustering and its relationship to Knowledge Exchange.** Creative England and the AHRC could look more closely at business survey data in order to answer questions around Knowledge Exchange activity, innovation, creative business growth and the contribution this dynamic makes to the local and national economies. This work is challenging but would provide a broader overview of their relational connections and build on the evidence gathered for this report. Many important questions can be answered using existing data, but specific surveys focused on barriers to interaction are needed. In addition, such research will be a valuable tool in addressing recommendations proposed in Strand 1 Developing Strategic Leadership (see above).
ARGUMENTS AGAINST THE IMPORTANCE OF PROXIMITY

There were two main arguments posited against the importance of geography and proximity to effective Knowledge Exchange. First, the comparatively small size of the UK in general that mitigates against the isolating effects of location outside London or urban centres. Second, the higher value placed by businesses on networks rather than on proximity to driving HE interaction.

Small size of UK

Some participants mentioned that the size of the UK and function of creative businesses are often over-estimated. Many creative businesses are located in a number of different premises or in places that are easily accessible from other locations within and without the UK:

“A friend of mine runs a business in tech city and his business is split between London and tech city and his tech team is based in Cambridge and his marketing team is based in London.”

“The joy of the UK is that [getting from any part to any other is comparatively easy] - even if you’re in Dundee that is totally doable.”

Value of networks

Although there is value in the clustering approach, participants felt that it would be a mistake to study them in isolation and without considering the networks that are crucial to Knowledge Exchange and how they work across disciplinary and social networks (as well as geographical ones).

“I think geography does play a part but we’re not clear. The reason we have 450 individuals as part of Northern Soho as a collaborative institution is in part that we’re passionate about defending our own area but really the most important thing is about a shared attitude and a shared drive. You can bring people together from all over the world. I’d like to see less of a North - South thing. You can have a cluster of people together who are at the leading edge of design or social media but they are networked across the sector.”

COMMENTS ON THE MAPPING

Participants made a number of points on the map (see Map 3 above) that was shown without a full description of the methodology or contextualisation. To an extent, the map was intended as a provocation to explore a geographical dimension to Knowledge
Exchange. Participants were keen to emphasise that much effective Knowledge Exchange activity takes place at an individual or “invisible level”. Thus, using a web search to identify activity will only ever reveal that which is in the public domain and openly publicised and so likely to be of a larger scale.

Participants felt that a mapping exercise should include London because it is the UK’s centre of Knowledge Exchange and creative industry activity and key to supply chains.
Part 4: Conclusions and recommendations

This short research study confirms the importance of Knowledge Exchange activity to connecting and growing creative businesses but also points to the gaps and disconnects in current provision. Research into business-university collaboration per se (PACE/ CBR, 2011; Hughes et al, 2011) shows the majority of Knowledge Exchange interactions occur as a result of direct contact between an academic and an industry practitioner rather than mediated through generalist Knowledge Exchange offices. Furthermore, survey data (Abreu et al, 2009) shows over 40% of academics from all disciplines interact with external private sector organisations and particularly large corporations. The Wilson Review (2012: 23) acknowledges a ‘hugely diverse’ landscape of business-university collaboration. Findings from this research project’s mapping and consultation work reinforces these challenges and trends. With such positive progress being made on the HE side of engagement, the next challenge is to ensure small creative businesses are equally aware of and engaged in Knowledge Exchange opportunities.

Based on analysis of the project’s literature review, mapping and consultation work, there appear to be HEIs that demonstrate noticeably high profile, or certainly well-publicised Knowledge Exchange activity that is targeted at creative businesses operating in Film/TV, Design, Digital Media and Games. When these major HE hubs are mapped against creative business clusters across England, an overlap is found in four locations outside of London. The ‘hotspots’ of Bath, Brighton, Bristol and Manchester/ Salford demonstrate a combination of: research expertise in Creative Arts and Media disciplines; cross-disciplinary collaboration including Arts and Humanities, Engineering, Computer Sciences and Business and Management School; some hold status as AHRC Knowledge Exchange Hubs and/or Skillset Film, TV and Media Academies; evident industry-education partnerships in post-graduate research programmes, mentoring, placements schemes, R&D projects and advisory panels; offer business services and facilities; and have a

24 Public and Corporate and Economic Consultants (PACEC) and the Centre for Business Research (CBR) were commissioned by the Higher Education Funding Council for England (HEFCE) to examine the landscape and value of Knowledge Exchange in universities during the 2000s in relation to Higher Education Innovation Fund (HEIF) rounds of investment (see download at http://www.pacec.co.uk/publications/Understanding_the_Knowledge_Exchange_Infrastructure_in_the_English_Higher_Education_Sector.pdf ).
geographic proximity to concentrations of creative businesses. While quantity and visibility do not necessarily equate to quality or efficient connectivity, and there is little evidence of the economic impact of Knowledge Exchange activity on the UK’s creative economy, these major HE hubs exemplify the diversity of models of engagement. They are also a starting point for further exploration of the geographies of Knowledge Exchange activity.

Clustering and a networked way of engaging businesses and HEIs demonstrate the fundamental role that a connected infrastructure plays in communication and collaboration across short and long distances. These ‘pipelines’ should be optimised in order to enhance and extend an innovation eco-system for the creative industries. Although the project’s focus is on specific parts of the creative value chain, observations about clustering and networking most likely apply to other parts of the creative economy. However, making the connections is also critical. Mechanisms are needed to be developed that forge and manage complex relationships between individual and multiple HEIs and small businesses over time and space. Wilson (2012: 9) suggests businesses should reflect on: ‘matching their needs to those universities that best meet their requirements within the appropriate domain.’ But if creative businesses are not fully aware of what HEIs ‘offer’ nor understand its commercial value, then Knowledge Exchange will remain an inefficient case of serendipity.

Tapping into Creative England’s and the AHRC’s networks and resources, there is an opportunity for a strategic partnership. Leadership is needed to broker connections – between universities and businesses, strategic organisations and stakeholders, local and national programmes. Connectivity and sustainable models are needed where there is already capacity but also where there are gaps and isolation. Such brokerage would complement and add value to public investment, including the Knowledge Exchange centre being developed by CIHE (recommended in Wilson, 2012).

Thinking about strategic planning and intervention, past and present experience points to a role for specialist intermediaries at the local level. Enterprise zones provide locations where there are financial incentives for investment and job creation. Several zones are located close to universities identified in the mapping and could benefit from stronger links. Furthermore, local authorities are acquiring powers to create enterprise zone conditions within existing and prospective university science parks. This is an opportunity that has the potential to help generate significant economic growth for prioritised sectors (Wilson, 2012: 77).
3). Given the role assigned to Local Economic Partnerships (LEP), they too have the potential to significantly influence economic growth of creative businesses in their localities. Universities are key players in the supply chain for research, innovation and skills but may need help to understand and engage with a sector that is dominated by small companies.

Consultation on models of Knowledge Exchange activity revealed no single formula to effective engagement between universities and creative businesses. Specific characteristics and barriers to engagement were identified and mostly confirmed findings from other studies. Nonetheless, discussion of critical problems by experienced participants suggests a number of practical solutions for strategic bodies to consider (see Recommendations).

Looking more closely at case studies of major HE hubs (see Appendix One and Two), and input from the AHRC Knowledge Exchange Hub leaders, it is clear that a successful model depends on a complex and situated blend of factors that may not easily transfer to other situations (or sub-sectors). Factors of success include, for example: individual actors; mix of disciplines; funding opportunity; access and proximity to creative businesses and appropriate supply chains; relevance to academics, students and businesses; marketing materials and application procedures. Indeed, a highly successful interaction may occur at an individual level, between a single academic and business and evolve over a short or longer period. Furthermore, participants’ responses to the map of major HE hubs (see Part 3) suggest there is considerably more ‘invisible’ activity that needs to be investigated. With so much activity taking place, there is remarkably little robust evaluation available in the public domain to explain what is actually happening in a Knowledge Exchange encounter and with what impact on a business’s commercial development and on the UK’s creative economy.

The guiding principles of Knowledge Exchange between university and business are laid down, but there remain gaps in provision and take-up in the creative sector. Of the supply side, the study identified a ‘missing middle’ between formal large scale knowledge transfer provision and the more informal shorter timescale modus needed by smaller creative businesses. Of the demand side, businesses (and some academics) have yet to be fully cognisant of the value and outcomes of Knowledge Exchange. Lessons need to be learned and actions taken. First, providers of Knowledge Exchange need to act on the
findings and ‘good practice’ presented in extant studies including this one. Second, the AHRC and Creative England, working with other strategic bodies, need to address the ‘missing middle’ between HEIs and businesses in order to stimulate greater demand. Specifically, the lessons learned and recommended actions form what we call a ‘Big Idea’ to be taken forward by the proposed strategic HEI-Creative Business Group (see Recommendation 1).

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Strategic Action</th>
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<tbody>
<tr>
<td>Greater focus to public funded Knowledge Exchange activity</td>
<td>Strategic planning and leadership</td>
</tr>
<tr>
<td>Better understanding of the value and outcomes of Knowledge Exchange by academics and creative businesses</td>
<td>Collaborative programmes, workshops and seminar events; integrated into mainstream programmes</td>
</tr>
<tr>
<td>Stronger connected networks (inter-disciplinary, sector specific, inter-clusters/hubs) to increase capacity, share information, encourage take-up by SMEs</td>
<td>Collaborative and organisational initiatives</td>
</tr>
<tr>
<td>Greater ‘boundary spanning’ cross-over between disciplines and resources</td>
<td>Co-development - Arts and Humanities, Computer Science, Engineering, Business Management</td>
</tr>
<tr>
<td>Better evidence base and evaluation methodologies for assessing performance</td>
<td>Research projects, dissemination of reports/studies</td>
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The fourteen recommendations in this report follow Wilson’s principle that change must be ‘motivated by leadership and good management: the pursuit of a mission or an objective’ (Wilson, 2012: 4). Where public-funded initiatives are mentioned, the aim is not to increase public funds but to use resources to better effect and in a more targeted manner.
Glossary and abbreviations

AHRC: the Arts and Humanities Research Council
BIS: Department for Business, Innovation and Skills
CIHE: Council for Industry and Higher Education
CIKTN: Creative Industries Knowledge Transfer Network
Cluster: according to NESTA researchers (Chapain et al, 2010), industrial clusters are geographical concentrations of firms from the same sector – or related sectors along the value chain – that collaborate and compete with one another, and have links with other local actors including universities. De Propris et al (2009: 11) defines a creative cluster as: a place that brings together a) a community of ‘creative people’ who share an interest in novelty but not necessarily in the same subject; b) a catalysing place where people, relationships, ideas and talents can spark each other; c) an environment that offers diversity, stimuli and freedom of expression; and finally d) a thick, open and ever changing network of inter-personal exchanges that nurture individuals’ uniqueness and identity.
DCLG: Department for Communities and Local Government
DCMS: Department for Culture, Media and Sport
HE: Higher Education
HEFCE: Higher Education Funding Council for England
HEI: Higher Education Institution
HEIF: Higher Education Innovation Fund
High-growth firms: according to NESTA (2010), a high growth firm is defined as one that: survives longer than three years; employs more than 10 people at the start; average annual employment growth of more than 20% over a three year period.
Hub: a hub can be described as the core or focal point of an activity and may be physical or virtual.
Location quotient: a location quotient is a standard metric of agglomeration in economic geography that measures a given area’s degree of specialisation in a sector, compared with the national average. A location quotient larger than 1 indicates that a particular sector is more important to the local economy than it is to the UK economy.
MSOA: Middle Layer Super Output Area. The NESTA maps of creative clusters, used for this study’s detailed analysis, are divided into local areas known as MSOAs. MSOAs
are micro areas based on population counts. For more details visit:

NESTA: National Endowment for Science, Technology and the Arts

Network: this word has many different meanings but refers in this report to a formal or informal communication channel that spatially connects people at a local level and/or more widely. By connecting, people in the network are able to share information, knowledge, viewpoints, expertise *et cetera* and make connections to other networks.

PACEC: Public and Corporate Economic Consultants

RAE: Research Assessment Exercise. Research in British universities is assessed every five years by HEFCE and equivalent funding bodies in Northern Ireland, Scotland and Wales and the results published (see http://www.rae.ac.uk/results/). Submissions will next be assessed in November 2013 and completed in 2014 according to the new Research Excellence Framework/ REF (for further details see http://www.ref.ac.uk/panels/assessmentcriteriaandleveldefinitions/).

RDA: Regional Development Agency (now closed)

SME: small and medium sized enterprise

TSB: Technology Strategy Board

UK: United Kingdom
Bibliography


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NESTA (2010b) *Creative Clusters and Innovation*, NESTA, London.


Appendices

To view the appendix documents for this report, please click on the link below:

https://www.dropbox.com/l/mQGAiCC58BxBNVoQoEKMwe