



**Final report**

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## **EVALUATING THE BUSINESS IMPACT OF SOCIAL SCIENCE**

**Report to Economic and Social Research Council (ESRC)**

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September 2013

**UNIVERSITY OF HULL: Business School and Department of Social Sciences,  
with Cloud Chamber**

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Final report

**EVALUATING THE  
BUSINESS IMPACT OF  
SOCIAL SCIENCE**

**Economic and Social  
Research Council (ESRC)**

July 2013

Professor Steve Johnson  
Professor Kevin Orr  
Professor Shona Bettany  
Louise Sturgeon-Adams  
Matthew Terry  
Rose-Marie Smith



The University of Hull  
Cottingham Road  
Hull  
HU6 7RX

<http://www2.hull.ac.uk/hubs/>

[s.g.johnson@hull.ac.uk](mailto:s.g.johnson@hull.ac.uk)

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## **Executive summary**

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### **Aims and objectives**

This report presents the main findings from a project entitled '*Evaluating the Business Impact of Social Science*', commissioned by the Economic and Social Research Council (ESRC) and undertaken by a team of researchers from the University of Hull. In brief, the project involved an examination of the processes through which social science research and related activities impact upon business (defined broadly to incorporate large and small private sector businesses as well as social enterprises, but excluding public sector organisations) in relation to three of the UK's leading business/management schools that have received significant amounts of ESRC funding in recent years: Cardiff Business School, Lancaster University Management School, and Warwick Business School.

The key objectives of the study were as follows:

- To identify the range and nature of business impacts resulting from the work of the business schools
- To evaluate the processes through which business impacts may be or have been generated, through research and related activities
- To develop an understanding of the contributions of social science within local, regional and national contexts, and the factors that promote or inhibit impact within these contexts
- To identify and analyse the determinants of the impacts identified
- To identify good practice and lessons learned, to support the development of impact generation within the business sector
- To inform the development of methodology for future impact evaluation studies in this area

The project also looked specifically at the impact on business of social science PhD graduates of the participating Schools, with the following objectives:

- Identify the employment destinations of social science doctoral graduates from the three Schools
- Identify the range and nature of impacts that social scientists with PhDs working in business have contributed to
- Identify and analyse the determinants of the impacts (i.e. why and how impact has been generated)

- Explore impact processes and potential impacts, and identify any barriers to impact generation
- Develop an understanding of businesses' appreciation and need for the higher level skills associated with PhD training
- Identify good practice and lessons for enhancing the contribution that social science doctoral graduates can make to business
- Inform the ESRC's investment in PhD training with a view to maximising future impacts

### **Research methodology**

The research entailed:

- A desk review of relevant literature on research impact, in so far as it relates to the relationship between social research and business
- Analysis of documentary information on research and business engagement activity by the three participating institutions
- Visits to the three participating institutions to interview researchers, managers, administrators and others concerned with the business impact of social research
- Interviews with business partner organisations of the three participating institutions
- Questionnaire survey of PhD graduates from the three participating institutions
- Ten case studies demonstrating the business impact of social science, including five case studies of impact occurring through PhD graduates

### **Key findings: business impact of social science**

- The study identified examples of a wide range of business impacts arising from social science activities within the three participating Schools. These include tangible improvements in the performance of small enterprises engaged in learning and networking programmes; significant developments in sustainable production of motor vehicles as a result of long-term collaboration between academics and entrepreneurs; supply chain improvements through research – linked to a doctoral thesis - into service networks and productive business engagement by one of the participating Schools through a not-for-profit subsidiary. These examples illustrate the various ways in which businesses can benefit from interaction with business/management schools, with no dominant pattern of impact emerging.
- The public statements of all three Schools, in strategy documents and through the interview responses of senior leaders within the Schools, suggest a high level of commitment to business impact – it 'comes with the territory' of being a top-ranked institution and plays a significant role in their mission, practice and

reputation. Connections and interactions with business are an important element in the brand and identity of these Schools.

- Impacts are achieved through dialogue between academics and business partners, accomplished in a range of formal and informal settings, in contrast to 'linear' models which assume that impact occurs through businesses making use of pre-existing research. Involving practitioners at multiple stages of the research processes (including models of research co-production) was felt by many to increase the prospects of generating impact.
- Business actors play important roles which go beyond being the recipients or beneficiaries of social science research: they also act as advisors, co-producers, advocates, champions, 'probers' and 'cultural irritants'.
- Our own observations and responses from a range of informants confirm that there is a welcoming ethos in each of the Schools, a respect for business perspectives and a strategy of 'pulling in' business actors to the work and governance of the Schools. Schools are active in organising business-oriented events to share research findings or to generate new ideas.
- We found different traditions of scholarship co-existing in the Schools and within and across their different disciplines. The Schools support applied and operational research, action research, as well as more critical work which is less grounded in 'solving' or addressing business concerns.
- Some business actors questioned the value of academic work that achieves only a small audience or little impact in commercial settings. Some academics interviewed for this study, however, felt that it is important to 'go where the ideas take them' rather than service 'narrow' business agendas. The qualitative nature of the research means that it is not possible to estimate the proportion of all academics holding these views, but it demonstrates that not all are committed to achieving business impact through their work.
- Some academics were critical of business cultures which they felt can be 'anti-intellectual', or closed to difficult concepts or ideas.
- Academics and business respondents often referred to a 'language gap' and emphasised the importance of academics being able to 'speak the language' of practitioners. There was a widespread sense that the skills to do so are not universal in Schools.
- Some academics pursue two-pronged writing strategies and work to repackage their research for different audiences.
- The Schools' position as part of a university confers benefits in terms of trust and standing. It is a useful point of difference which sets them apart from the concerns and profit motives of, for example, consultancy firms, or commercial rivals and generates confidence that academics will act as 'honest brokers' in their interactions with businesses.
- Many of the academics are skilled in working with businesses to generate a shared understanding of the role that Schools can play in addressing knowledge or practice-based problems.

- Developing and sustaining relationships with business actors is a time-consuming and intensive process which is set within a context of competing demands and performance expectations on academics.
- The Research Excellence Framework (REF) is a major driver in the research environment. We found different accounts of how the REF has influenced the choices and strategies of researchers within the Schools, with no clear consensus apparent.
- On the one hand the REF may have increased the legitimacy of business-focused or applied research and, more widely, the spectrum of business engagement activities; however for some, the REF has been counterproductive as a result of the primacy of academic publications and its somewhat linear notion of impact.
- Some respondents were sceptical about consultancy relationships, seeing this activity as less legitimate in a university than scholarly research. Others emphasised the value of these engagements for producing knowledge and for generating further research possibilities.
- Funding bodies, such as the ESRC, have played an influential role in encouraging academics within business and management schools to develop impact strategies and to articulate the purpose and practitioner-relevance of particular projects.

### **Key findings: business impact of PhD programmes**

PhD graduates working in the private sector or who were self-employed reported a wide range of impacts that the skills and knowledge developed through their PhD have had, including:

- **Bringing new ideas to the organisation** – using the skills developed through the PhD to offer new and innovative ideas to a company e.g. *'thought leadership'*, *'testing and developing new research ideas'*
- **Strong sense of credibility, expertise and employability** – employing an individual with a PhD acts as a 'selling point' for both the individual and their organisation to external commercial organisations or potential clients.
- **Translating between the world of industry and academia** – some graduates felt they were able to keep up to date with the latest research findings and more importantly translate and use these findings to grow the organisation.
- **Using subject specific knowledge to grow the business** – using the findings from their own PhD or the subject specific knowledge they developed to enhance the work done within their role.
- **High quality work skills** – some graduates felt the work skills they had developed through their PhD such as project management, report writing, communication and time management were very beneficial to their employers



- **Thinking ‘outside the box’** – using their highly developed analytical skills to unravel the real issues behind the challenges they face and using their knowledge of theory to provide solutions

Other key findings from and implications of this element of the study include:

- Our research corroborates findings from qualitative interviews, that PhD programmes are seen by academics and students alike as being primarily concerned with training future academics, with ‘impact’ having a generally low profile. However, some impact stories have emerged from former PhD students who have moved into industry, highlighting the potential importance of PhD funding and training as a driver of business impact
- Our work suggests that a significant minority of PhD graduates of the three participating Schools go on to enter employment in the business sector, or to run their own businesses. Our evidence indicates that such individuals and their employers appreciate the value of the training they have received, with a wide range of skills developed by graduates through their qualification viewed as being very useful in business, from work skills such as report writing to more qualitative skills like analytical thinking.
- The examples of business impact through PhD graduates suggest that, while employers appreciate the high levels of analytical and intellectual skills provided by PhD graduates, there is scope for business and management schools to place greater emphasis on more practical skills such as project management and the communication of research findings to non-specialists, as part of PhD training and supervision processes. This might be reflected in ESRC guidance in relation to PhD training programmes, financial support for training programmes involving employers, encouragement for academics engaged in ‘impactful’ activities to become more involved in PhD supervision and continued promotion of and financial support for doctoral programmes which involve the active collaboration of businesses.

## 1. Background to the evaluation

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### 1.1 Overview of the research

This report presents the main findings from a project entitled '*Evaluating the Business Impact of Social Science*', commissioned by the Economic and Social Research Council (ESRC) and undertaken by a team of researchers from the University of Hull. In brief, the project involved an examination of the processes through which social science research and related activities impact upon business (defined broadly to incorporate large and small private sector businesses as well as social enterprises, but excluding public sector organisations) in relation to three of the UK's leading business/management schools that have received significant amounts of ESRC funding in recent years. Cardiff Business School, Lancaster University Management School and Warwick Business School all agreed in advance to participate in this study, to ensure that relevant staff members were available for interview, to share information pertinent to the study and to facilitate links with external organisations and individuals.

The key objectives of the study were as follows:

- To identify the range and nature of business impacts resulting from the work of the business schools
- To evaluate the processes through which business impacts may be or have been generated, through research and related activities
- To develop an understanding of the contributions of social science within local, regional and national contexts, and the factors that promote or inhibit impact within these contexts
- To identify and analyse the determinants of the impacts identified
- To identify good practice and lessons learned, to support the development of impact generation within the business sector
- To inform the development of methodology for future impact evaluation studies in this area

One component of the study was to investigate the extent to which PhD graduates from these institutions go on to work in business (as opposed to academic or public policy) environments, and to examine the impact of such graduates on business. This required the identification of such individuals through alumni records and other sources, including contact with research supervisors and surveys of recent PhD graduates. Again, the participating institutions provided assistance to the research team with this process, and the specific objectives of this component of the study were:

- To identify the employment destinations of social science doctoral graduates from the three schools
- To identify the range and nature of impacts that social scientists with PhDs working in business have contributed to
- To identify and analyse the determinants of the impacts
- To explore impact processes and potential impacts, and identify any barriers to impact generation
- To develop an understanding of businesses' appreciation and need for the higher level skills associated with PhD training
- To identify good practice and lessons for enhancing the contribution that social science doctoral graduates can make to business
- To inform the ESRC's investment in PhD training with a view to maximising future impacts

The research methodology is set out in section 4 of this report. In brief, the research entailed:

- A desk review of relevant literature on research impact, in so far as it relates to the relationship between social research and business
- Analysis of documentary information on research and business engagement activity by the three participating institutions
- Visits to the three participating institutions to interview researchers, managers, administrators and others concerned with the business impact of social research
- Interviews with business partner organisations of the three participating institutions
- Questionnaire survey of PhD graduates from the three participating institutions
- Ten case studies demonstrating the business impact of social science, including five case studies of impact occurring through PhD graduates

## **1.2 Key points from relevant literature**

How to generate research impact is increasingly presented as one of the major questions confronting the academy, challenging researchers to translate their ideas into benefits for other organizational (non academic) actors (Van de Ven et al., 2006; British Academy, 2008; ESRC 2009). The impact agenda is embedded within a longstanding global debate about the role of research and the purpose of business and management scholarship.

In the UK, particularly in the last decade, many rallying calls for greater connectedness between academics and practitioners have been made by

members of management research communities and by government bodies with a stake in research policy (for example, British Academy 2008, Worry 2006, ESRC 2009, HEFCE 2009, 2010). Often these have been wrapped up with a wider concern for the role of business schools. Notable interventions include the work of Starkey and Madan (2001) who warned that Business Schools face a 'relevance gap', and later Starkey and Tempest (2005) who argued that a fragmented and pluralistic environment for knowledge production meant that the Academy no longer holds a monopoly position and therefore needs to reconfigure its activities and work with different actors and organisations, and operate at the interface of theory and practice. Similarly, in a special edition of the *British Journal of Management*, Pettigrew (2001) argued for 'a more porous boundary between science and society and a greater range of participants in the knowledge development process' (p.567).

Many interventions in this debate valorise the importance of dialogue between academics and practitioners, with communication presented as a key process. Such dialogue has been presented as a means of generating impact (HEFCE 2010; Armstrong and Alsop 2010); or relatedly, of increasing levels of 'knowledge utilization' (Caplan, 1979; Oh and Rich, 1996); of showing 'relevance' as well as 'rigor' (Starkey and Madan, 2001; Starkey and Tempest, 2005); of achieving 'connectedness' or 'inclusion' (Bartunek and Trullen, 2007; Evered and Louis, 1981; Yanow, 2004); and as means of uniting around a 'common language' (Dunn, 1980; Walker, 2010). Recent work has suggested that relations between academics and practitioners can be understood as dialogical (Beech, MacIntosh and Maclean 2010) and suggest the need to appreciate that the dynamic relationships between theorists and practitioners are fluid and generative rather than instrumental and transactional (Orr and Bennett 2012a). As this study explores, the debates about the role and purpose of research and of business and management Schools involve not just strategic choices for institutions, but are also imbued with intellectual, practical and ethical dilemmas for individuals and their research communities (Orr and Bennett 2012b).

A considerable and growing literature base exists in relation to the impact of social science on public policy, including a number of studies commissioned by ESRC (for example Johnson, 2012; Johnson and Williams, 2011; Policy Impact, 2012) and the work of scholars such as Sandra Nutley, William Solesbury, Ray Pawson and others in the UK (Davies, Nutley and Smith, 2000; Pawson, 2006; Solesbury, 2001) and researchers in countries such as the United States (Weiss, 1979), Australia (Head, 2008; Marston and Watts, 2003) and South Africa (Strydom et al, 2010).

While a number of conceptual and methodological debates are ongoing, and there is scope for more research (for example to investigate in more detail the processes through which research evidence gets translated into policy and practice), a number of common findings are beginning to emerge. These

include the observation that linear models of knowledge exchange do not adequately characterise the complexities of research-policy interaction; the importance of informal relations between researchers and policy-makers; the need to establish common ‘languages’ for communication; the importance of mutual understanding of different incentive structures facing academics and policy-makers and the potentially key role of highly-qualified social scientists working within the policy environment.

In contrast, much less appears to be known about the processes through which social science research impacts on strategy and practice within the business sector. A project led by the Public Policy Group at the London School of Economics is currently investigating the issue through a business survey and interviews with leading business figures and a number of early observations are beginning to emerge through their ‘Impact of Social Science’ blog (<http://blogs.lse.ac.uk/impactofsocialsciences/>). To date, however, there has been no formal publication of the findings. Relevant contributions to the field in the UK have come from Robin Wensley and colleagues (Wensley, 2002; Caswill and Wensley, 2007; Wensley, 2009). Key findings of relevance to the current study include:

- There is an ongoing issue regarding the appropriate balance between ‘rigour’ (typically measured in terms of publication in highly-rated journals) and ‘relevance’ in business-related social research.
- It is important to recognise the heterogeneity of both the academic world and the business world, and the fact that – particularly in relation to business and management studies – the academic and business domains overlap and interact.
- Academic and business practitioners operate within differing institutional structures and incentive systems that are legitimate in their own right but may have a significant influence on the relationship between actors in the two domains.
- Intermediary organisations (for example professional institutes) play a key role in facilitating relationships between academic and business communities in the context of business disciplines. Management consultants are also an important element of the transmission mechanism between research findings and practice.
- As with the research-policy relationship, it is clear that linear (or Mode 1) models of knowledge transfer are inadequate to describe or analyse the interaction between social science and business policy or practice. More complex (Mode 2) models incorporating two-way flows of information and ongoing interaction appear to be equally applicable to the relationship between social science and business.
- Initiatives to stimulate greater engagement of business in the social research process, for example the SSRC ‘Open Door’ programme in the 1970s, have met with a number of difficulties, for example in relation

to the transaction costs associated with establishing new procedures and channels of communication. Later programmes such as the Advanced Institute of Management Research (AIM) have attempted to address these issues.<sup>1</sup>

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<sup>1</sup> [www.aimresearch.org](http://www.aimresearch.org)

## **2. Visits to business/management schools**

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### **2.1 Data collection**

Between September and December 2012, members of the research team undertook visits to the three participating institutions and met a range of relevant individuals including:

- Senior staff including Deans and Associate Deans
- Leading researchers
- Research and Knowledge Exchange staff
- AIM Fellows
- Members of the Schools' Advisory Boards
- Stakeholders from businesses engaging/collaborating with the schools
- Other key stakeholders as appropriate

A topic guide was utilised, reflecting the aims and objectives of the study, and taking into account the varying nature of the respondents. The full topic guide is presented in Appendix I; in brief the intention was to cover the following broad topics (where relevant to the respondent) within the limits of interviews lasting approximately one hour:

- Definition, nature, significance, measurement and tracking of business impact
- Processes of business impact, knowledge exchange, engagement with business
- Facilitators of and obstacles to business impact; academic and business perspectives on business impact
- Local, regional, national and international context of business impact
- Role of PhD students and PhD training in relation to business impact
- Links between business impact and funding
- Examples of business impact, good practice and lessons learnt

In addition to these interviews, research team members collected and reviewed a range of documentary information about each business/management school, including details of relevant research projects and programmes, notably those supported by ESRC. This section of the report summarises the key features of each of the three Schools, in the context of this study.

## **2.2 Background to participating institutions**

### **2.2.1 Lancaster University Management School**

We made four field visits to Lancaster. During the first visit, our researchers met with the Dean and the management team, as well as a range of senior research academics, and relevant administrators. In that visit, 10 thematic interviews were undertaken, involving a total of 16 people, as well as two more general meetings. A second visit was made during which we conducted a further 7 interviews with senior academics and one advisory board member. A third visit was made to speak to participants in the Entrepreneurs in Residence scheme, and a fourth field visit was made to meet with members of the Work Foundation and the School's advisory board. Details of those interviewed are provided in Appendix IV.

Lancaster University Management School (LUMS) is recognised as a top UK School, regularly featuring in the top 5 of league tables. In December 2012 it won the Times Higher Education Business School of the Year Award, and was commended for *'demonstrable, consistent and considerable impact locally, regionally, nationally and internationally'*. LUMS is a full service provider of business and management education and describes itself as 'research-led but student focused.' The Management School has an Advisory Board comprising university members and senior executives from national and international business.

Lancaster has a longstanding record of research excellence. LUMS achieved the maximum rating in each RAE (1992, 1996 and 2001) within the Business and Management Studies panel, and received a special 6-star designation in 2003 from the Higher Education Funding Council, one of only two UK Business Schools to receive this accolade. In the 2008 RAE Lancaster was ranked equal 5th in the UK for Business and Management, with 75% of LUMS' research activity assessed as world leading or internationally excellent in terms of originality, significance and rigour, and 95% of all its research is at least of international standing.

The School is organised around 8 academic departments and 11 research centres. The departments cover the full range of business and management subjects: Accounting and Finance; Economics; Institute for Entrepreneurship and Enterprise Development; Management Development Division; Management Learning and Leadership; Management Science; Marketing; Organisation, Work and Technology. It also hosts 11 research centres which represent key areas of research focus: Centre for Family Business, Centre for Performance-Led HR; Centre for Personal Development; Centre for the Study of Technology and Organisation; Gulf One Centre for Economic Research; International Centre for Research in Accounting; Lancaster Centre for Forecasting; Lancaster Centre for Strategic Management; Lancaster China



Management Centre; Lancaster India Centre; and Lancaster Leadership Centre. Each of these research centres produces work which is rooted in or oriented towards business and their members interact with practitioners through applied research, business development advice, research events, and research consortia. LUMS has been very successful in attracting support from a range of external sources, including ESRC grants totalling approximately £3.6 million between 2002 and 2012, across the School's core research areas such as work on entrepreneurship, organisational learning and strategic renewal. LUMS has also been host to four AIM fellows.

An important part of LUMS commitment to impact has been the acquisition of an independent, London based think tank, The Work Foundation, a leading independent, international authority on work and its future, influencing policy and business practice. Its research programmes target organisations, cities, regions and economies, and offer research-based analysis, knowledge exchange and policy advice. The aim of this acquisition was to develop research synergies between Lancaster and business and policy makers.

LUMS provides an active research environment in which doctoral students play a valued role. It has a significant PhD student community of over 100 students drawn from a range of international settings. It offers PhDs in different departments as well as a cross-disciplinary PhD in Management. LUMS offers a number of possible routes to students, including entry via an MRes and a part-time PhD programme. Between 2002 and 2012, 37 LUMS doctoral students were funded by ESRC. LUMS also runs a suite of very successful MBA programmes, including full-time, part-time and Global Executive versions.

### **2.2.2 Cardiff Business School**

Two members of the research team visited Cardiff in September 2012 and details of interviews undertaken are provided in Appendix IV.

Cardiff Business School (CBS) is widely regarded as one of the leading business and management schools in the UK, ranking 4<sup>th</sup> in the UK for research excellence in the most recent Research Assessment Exercise. Research is at the heart of the Business School's activities, with academics mainly working under five academic sections: Accounting and Finance, Economics, Human Resource Management, Logistics and Operations Management, and Marketing and Strategy. The School is also host to a number of multi-disciplinary research centres. Each section publishes a number of articles in world leading journals each year, as well as attending and hosting seminars, workshops and conferences on a variety of subject areas. A core part of the research community at CBS is the number of doctoral students within the school; in 2012 around 150 students were engaged in the PhD programme. Between 2002 and 2012, 53 CBS doctoral

students were funded by ESRC. At Cardiff PhD students are expected to not only advance their own knowledge of a chosen subject area but to also contribute to the environment of their chosen academic field and the school's own aims and objectives, for example by publishing in the school's Working Paper series. The aim of the PhD programme at Cardiff is to prepare doctoral students either for a career in academia, as a business practitioner or in senior public policy decision making. Masters programmes include an MSc in Logistics and Operations Management, and Cardiff also provides an MBA programme for around 350 students each year, a programme that includes the completion of an integrated business plan and input from external business practitioners.

The School's interaction with industry takes many forms, including one-to-one business-academic research projects, the hosting of industry focused seminars and conferences and collaborative partnerships such as the Cardiff Business Partnership, whereby local businesses and the business school work together to conduct in-depth research into the issues facing the local economy.

The Business School is also home to a number of research centres that specialise in delivering business solutions, research, training and expert advice to industry and business partners. This includes the ESRC-funded Centre for Business Relationships, Accountability, Sustainability and Society (BRASS), which aims to generate knowledge, skills and learning and also to facilitate practical changes within businesses and policy arenas. CBS is well-supported by the ESRC, having received over £2.5 million of funding since 2001 (in addition to the funding for BRASS); the majority of this funding had been in the form of research grants, however the ESRC has also funded some fellowships at Cardiff. The subject areas of the research funded by the ESRC have ranged from Strategy and Performance in Local Government to Financial Reporting in Small Firms and Sustainability of Lean in Public Services. A proportion of this funding from the ESRC was awarded through the Advanced Institute of Management Research (AIM) programme, the aim of which was to increase the contribution of and future capacity for world class research to have an impact on industry, in particular management. Since 2001, four AIM Fellowships have been based at Cardiff.

### **2.2.3 Warwick Business School**

Two researchers visited Warwick Business School in October 2012. Details of interviews undertaken are provided in Appendix IV.

Warwick Business School (WBS) is widely regarded as one of the best in the UK. The Financial Times, for example, ranked the school as 3<sup>rd</sup> in the UK and 13<sup>th</sup> in Europe in their 2012 rankings. In the 2008 RAE WBS was placed fifth of 90 business schools in terms of research quality. From the perspective of this

research project, the key part of the Business School's mission is *"to produce and disseminate world-class, cutting edge research that shapes the way organisations operate and businesses are led and managed"*. The Business School's strategic direction is assisted by a Board comprising university representatives and senior executives from national and international business.

Of its 12 Teaching Groups, 3 have a solid base in the social sciences: Behavioural Science; Entrepreneurship, Innovation and Management; and Organisational Behaviour and Industrial Relations. Three of the Business School's Research Centres and one of its five Special Interest Groups also have a strong social science focus:

- **Centre for Small & Medium-Sized Enterprises:** the Centre's research arm was created with the help of an ESRC grant in 1987. Its formal objectives focus on research for publication in academic journals, while ESRC grants in recent years have supported the Centre's regular surveys on SME finances
- **Industrial Relations Research Unit:** the unit promotes the understanding of industrial relations. It is primarily policy-focused, working predominantly with government, business and trade union bodies rather than directly with businesses themselves
- **Innovation, Knowledge & Organisational Networks Research Unit (IKON):** the unit's aim is to advance understanding of the interactions between innovation, knowledge and networks, primarily from an organisational theory perspective. It works directly with businesses, for example via the Knowledge and Innovation Network
- **Strategy, Organisational Learning and Resilience Research Unit (Special Interest Group):** the Group has had ESRC funding

Engagement with business is an important objective at WBS, both at an individual level (recruitment to the MBA programme, for example, or career opportunities for WBS graduates) and at an organisational level. The Business School encourages collaboration on research with businesses, although it stresses that this excludes 'purely commercial' research. Engagement through information includes seminars and other events to promote new research findings. Other activities include the Knowledge and Innovation Network, a membership organisation that seeks to explore and share information in the fields of knowledge transfer, innovation and business networks.

The WBS Doctoral Programme includes over 150 doctoral researchers and formally promotes the programme as a route into academia, public service and business. 2012 saw the programme secure 17 externally-funded doctoral posts – the highest ever for WBS. Recognised by the ESRC as a Doctoral

Training Centre, WBS secured nine ESRC studentships in 2012 (66 in total between 2002 and 2012), another high for the Business School.

Of 29 identified ESRC grants to WBS since 2001, the largest number (6) have been provided to support research into knowledge management, transfer and sharing. Four focused on public services or public policy; three each on industrial relations, innovation, and SMEs; and two were AIM fellowships. The value of ESRC grants since 2001 has totalled in excess of £6.42m (data are available for 23 of the 29 grants).

### **2.3 Business/management school visits: general observations**

The visits to the business/management schools focused primarily on academic and related perspectives. Section 3 illustrates the range of business contacts and partners – including Advisory Board members – that contributed to this research. A number of general issues emerged from the School visits, which had some bearing upon subsequent phases of the project.

- All of the business/management schools were at a crucial stage of drafting and seeking approval for impact case studies to be submitted for the Research Excellence Framework (REF) and several of our respondents alluded to the potential sensitivities of contacting partner organisations on more than one occasion to seek their input. This limited the range of case studies that we were able to undertake.
- More generally, our respondents pointed out that many of their business partners are very busy, are often not based nearby and can be difficult to ‘pin down’ for interviews or visits, despite being generally willing to help. This again is reflected in our experience of attempting to engage with business partners, with confidentiality concerns also affecting our ability to collect in-depth information about business/management schools’ interactions with business organisations. Despite these constraints, the research team succeeded in undertaking six business impact case studies, details of which are presented in section 5 of this report.
- The role of teaching activities, from undergraduate through to executive education was seen as a significant and direct route to impact, and the associated notion of developing individuals, specifically during academic/business organisation collaborations was viewed similarly, as a key impact process
- Finally, it became apparent from our discussions with academics that the notion of ‘business impact’ is not a straightforward one. We discuss this a little more fully below, but in brief there is potential ambiguity about the types of organisations that fall under the umbrella of ‘business’, about the nature of the impact process and about the extent to which it is appropriate or possible to link ‘impact’ to a specific

project or activity as opposed to a broader programme of research. All of these issues had an influence on our choice of 'case study', the activities, individuals and organisations to be included, for example.

In relation to the potential impact of PhD graduates, some key issues emerged from our visits:

- Almost unanimously, academic respondents felt that PhD programmes are primarily (or indeed exclusively) concerned with training future academics, rather than preparing postgraduate students to enter roles in business.
- Most academic respondents found it difficult to identify PhD graduates who had gone on to work in private sector businesses, suggesting that the number of such people is relatively low compared for example with those who enter academic posts. Some could bring to mind graduates who had gone on to work in government agencies and/or international agencies, but found it more difficult to come up with examples of individuals falling into our primary target group.
- In addition, there was a general feeling that the existing alumni databases are not sufficiently up-to-date for our purposes, especially in relation to any graduates that have moved outside of academia. Nonetheless, the research team was able to make good use of existing databases to generate a survey sample of 80 and 5 case studies involving PhD graduates working in business and/or their employers (see section 6).

### **3. Business context**

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#### **3.1 Introduction**

Given the focus of the research on the impact on business of social science research and related activity undertaken within business and management schools<sup>2</sup>, it was important to engage with a range of business organisations in addition to the university-based respondents described in section 2 above. This brief section provides an overview of the business and other partner organisations interviewed during the course of this research project.

Gaining access to business respondents has proved challenging for a number of reasons noted in section 2 above. This has affected to some extent the number and range of business views that we have been able to draw on. Nonetheless, we emphasise as far as possible throughout the report the views and experiences of business respondents and we are confident that this provides a good basis on which to draw informed conclusions about the nature of business impact generated by social science activities within business and management schools.

#### **3.2 Overview of business participants**

Business respondents were identified in a number of ways, notably through consultation with business/management school respondents who are engaged in some way with business organisations, and also through respondents to the PhD graduate survey. We were keen to ensure representation from a range of business organisations engaged with the participating business/management schools, in terms of factors such as size and sector. It was also important for us to speak with individuals within these organisations who have been actively engaged with research or other projects and who have a strategic overview of their business.

Interviews were conducted under conditions of confidentiality and anonymity, so it is not appropriate to name some of the individuals or organisations quoted within this report. We have engaged with a range of individuals and organisations including:

- Members of the advisory boards (and/or other relevant bodies) of the three participating business/management schools. These include senior managers of large organisations as well as smaller businesses and business representative bodies
- Businesses engaged in research projects in collaboration with one or more of the participating Schools

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<sup>2</sup> It is important to recognise that business and management schools are only one of a wide range of settings within which social science research and related activities take place. To that extent this study addresses only one, albeit potentially significant, aspect of the wider impact on business of social science.

- Businesses being supported by an innovation and knowledge exchange programme run by one of the participating School's partner organisations
- Several entrepreneurial small businesses participating in networking and business growth programmes run by one of the Schools, as well as undertaking other roles such as judging student business planning exercises
- The employers of our case study PhD graduates, including a large international financial organisation and a large charity working within employment law, rights and public policy. Two of our case study graduates were self-employed and running their own businesses.

The experiences and views of these individuals and organisations have been incorporated into the analysis presented in this report.

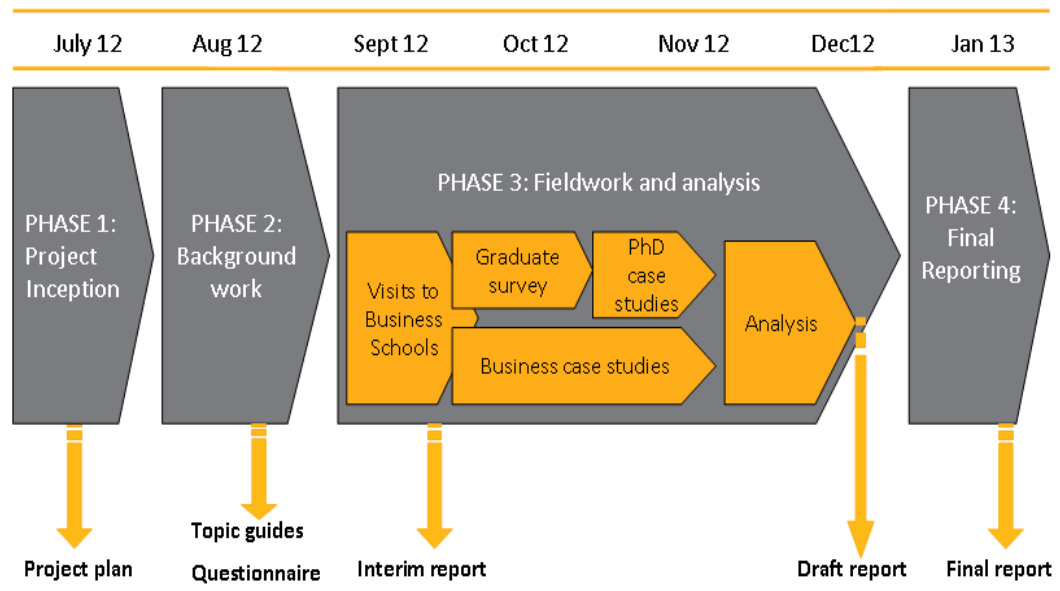
## 4. Evaluation methodology

### 4.1 Overview

The research adopted a primarily qualitative methodology, reflecting the primary aim of uncovering the key processes underlying the impact of social science on business within the context of three leading research-intensive UK business/management schools. Utilising the conceptual models developed through a series of ESRC-commissioned studies, this project adopted a ‘tracking forward’ approach to identifying research impact, starting from research or related activities (including PhD studies) and tracing their impacts through to business organisations.

Figure 4.1 summarises the main elements of the methodology. Each element is described briefly below.

**Figure 4.1: Overview of research methodology**



### 4.2 Initial scoping and evidence review

Following an initial scoping discussion with ESRC, the first phase of the study brought together the (limited) available documentary evidence to develop an understanding of the role played by social science within business organisations and the interaction between business/management research and business strategy and practice. We also reviewed a number of internal ESRC and related documents.



### **4.3 Visits to business/management schools**

Using an approach which ‘tracks forward’ from research and related activities at the focal Schools, we sought to identify the range and nature of business impacts resulting from the work of the three participating Schools in relation to practice, performance, culture, reputation, knowledge, organisational learning, capacity building, strategy and so on.

At each of the three research sites, we undertook semi-structured interviews with key actors and stakeholders in the Schools, including senior managers and research leaders, AIM Fellows and staff engaged in research and knowledge exchange activities. Exploring the insights of wider stakeholders, we also interviewed members of the Schools’ Advisory Boards and other business stakeholders who are involved in collaborations with the Schools. These visits, and the data collection instruments utilised, are described in more detail in section 2 of this report and associated appendices.

During these visits we sought to identify potential case studies of businesses that have (i) worked closely with the business school and achieved some impact as a result of that collaboration and/or (ii) employed social science PhD graduates.

### **4.4 Survey of PhD graduates**

One objective of the visits to the Schools was to explore the role played by social science PhD graduates in business. We spoke with the PhD programme leader in each School, together with the relevant support staff in order to obtain information on the number of PhD graduates in the past 10 years (approximately), and their employment destinations, where known.

The core data collection exercise was an e-survey of all of the PhD students who had graduated from the three selected business/management schools within the previous 10 years, approximately. In the light of data protection regulations, we asked the Schools to forward the link to the survey to their PhD graduates for whom they had email addresses, with a request for them to participate. The three participating Schools were happy to assist with this and this resulted in contact being made with 605 PhD graduates, 152 graduates from CBS, 275 from LUMS and 178 from WBS.

The questionnaire (see Appendix II) was developed in discussion with ESRC, guided by the key objectives for this element of the study, and piloted on a sample of Hull University Business School PhD graduates. Section 5.2 provides further details of response rates and summary findings, based on 80 completed replies.

## **4.5 Business and PhD impact case studies**

### **4.5.1 Selection of case studies**

On the basis of the survey evidence, and guided by the initial scoping review and business school visits, our initial aim was to select 12 case studies for further investigation. Ideally, these would comprise two examples for each School, of research or related activities (e.g. knowledge exchange) where social science appears to have had an impact on the strategy and/or operations of business organisations. In addition, for each School we aimed to identify two examples of social science PhD graduates working in business organisations.

We adopted a purposive sampling process, guided by both conceptual and pragmatic considerations, to identify case studies that were likely to demonstrate different aspects of research-business interaction.

- **Business impact case studies** were drawn from the examples provided during the business school visits, with the intention of ensuring a spread of examples (at least one per business school) relating to different aspects of social science research and also different types of business organisation by size, sector, ownership, location etc. For the reasons identified in section 2.3 above, in practice it proved more problematic than anticipated to identify and progress these case studies within the original project timescale. In total six case studies were completed.
- **PhD impact case studies** were drawn from the survey respondents, focusing on those who were working in business and expressed a willingness to participate in further research. Eight such individuals were identified from the survey data and five case studies were undertaken.

### **4.5.2 Business impact case studies**

In-depth interviews were held with one or more representative of the business organisation(s) who had interacted with the relevant School, and the most relevant academic representative(s). These discussions explored a range of key issues, guided by the Terms of Reference for the study, including:

- The nature of the interaction(s) under discussion; how initial contact arose; who was involved; how the relationship developed over time
- The impact of the activities under discussion; how these impacts arose; specific examples of how social science research affected the organisation

- Critical success factors; what factors facilitated engagement and impact?
- Issues or problems; what did not go quite so well and what lessons have been learnt?
- Other key questions or issues identified during earlier phases of the research

The completed case studies are:

- The **'Entrepreneurs in Residence'** initiative based at Lancaster University Management School, which involves a number of small business owner-managers in a wide range of activities linked to research, teaching, knowledge exchange and capacity building.
- The **Micro Factory Retailing** project, a collaborative venture between academics at Cardiff Business School and several businesses involved in developing and implementing sustainable approaches to car manufacture.
- The **Service Networks Project** at Warwick Business School, which looks at how service networks could be improved for manufacturing companies and their supply chains, by working with a large transport company and their service partners.
- The **Knowledge Innovation Network (KIN)** at Warwick Business School, an exclusive membership network that aims to promote and support collaboration between academics and practitioners to create mutually beneficial new knowledge.
- **KwikScreen**, an innovation based start-up business serving mainly the NHS, housed by the Work Foundation and the centre of collaborations between LUMS academics and innovation specialists

#### **4.5.3 PhD impact case studies**

Each case study involved an in-depth qualitative interview with PhD-qualified social scientists identified through the e-survey as being employed in a business organisation, using a structured topic guide covering:

- The respondent's career path since completing their PhD
- Extent to which the respondent feels that their PhD has helped them to obtain their job and undertake it effectively
- Reflective discussion regarding the respondent's role in and impact on the business, focusing on the importance of their PhD training
- What does the respondent think are the key factors that would help to ensure that social science postgraduates make a contribution to businesses?

In two of the five cases it was possible to interview a representative of the employing organisation<sup>3</sup>, guided by an agreed topic guide along similar lines to that outlined above for PhD-qualified social scientists.

#### **4.5.4 Analysis and reporting**

The final stage of the study entailed bringing together the desk-based evidence and material collected through the interviews and case studies to produce a focused report summarising the evidence regarding the extent to which and the processes through which social science research within business schools and PhD-qualified social scientists impact upon business organisations.

Our analysis has been guided by recent thinking about research impact, including recent research commissioned by ESRC and that summarised by Wood and Holmes.<sup>4</sup> This literature sets out a number of different models to describe and explain the influence of research, including simple linear models and more complex models that emphasise the importance of pluralistic approaches to decision-making that are influenced by cultural and other norms within organisations.

Sections 5 and 6 of this report set out our findings and conclusions.

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<sup>3</sup> Two respondents were self-employed, so it was not relevant to interview employer representatives. In one case it was not possible to interview the graduate's employer.

<sup>4</sup> In Cozzens, S and Snoek, M. *Knowledge to policy: contributing to the measurement of social, health and environmental benefits*, Workshop on the Science of Science Measurement, Washington DC, December 2010

## **5. Key findings: business impact of social science**

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### **5.1 Introduction**

This section is based on analysis of the interview notes from the visits to the three participating institutions, interviews with business partners and case study interviews conducted with academics and business partners. It presents some key findings from these evidence sources regarding the business impact of social science in general, while Section 6 focuses specifically on the impact of PhD graduates working in business.

### **5.2 Perspectives on business impact**

We identified a number of broad themes that are relevant to more fully understanding the impact of social science on business, which are summarised in this section.

#### **5.2.1 Institutional commitment to engagement and impact**

In each School we found that business engagement is a core element of the corporate strategy, and one that is intended to play a significant role in shaping the identity, culture and practices of each institution. Senior respondents from all three Schools emphasised that engagement with business makes good sense for a number of reasons, and not just in relation to the Research Excellence Framework (REF), for example:

- Recruitment of students from business
- Potential employers of business school graduates (including PhDs)
- Sources of work experience and research ideas
- Sustaining relevance to 'real world' commerce

In the three Schools, this is reinforced at a strategic level through advisory boards which are heavily populated by senior executives from a range of businesses. The primarily qualitative nature of our research means that it is not possible to provide a definitive picture of the extent to which this strategic commitment to research is shared across academics within the participating schools. The findings presented in this section present a mixed and complex picture, with a range of views being expressed and a range of practices identified.

### **Strategic commitment as stated in formal documents**

#### ***Lancaster University Management School***

One of the School's strategic goals is to *'continue to be a recognised leader in research that is academically excellent and of practical value... continue to make a significant impacts on our stakeholders through knowledge transfer, achieving real impact on business and community development'* (Strategic Plan 2010-2015). The School's statement of Vision reflects a commitment to enterprise and knowledge exchange and a priority is given to maximising the impact of LUMS activity *'...by ensuring that it influences the actions, behaviours and thinking of our academic peers, corporate colleagues and society more broadly.'* Within this Vision the School has developed partnerships with a range of regional, national and international stakeholders including a 'corporate associate club' bringing together the wide variety of activities conducted by LUMS.

#### ***Warwick Business School***

A key element of the Business School's mission is *'to produce and disseminate world-class, cutting edge research that shapes the way organisations operate and businesses are led and managed'*. In 2011 the University as a whole responded to the growing requirement for a coordinated, strategic commitment to business relationships by appointing its first Pro-Vice Chancellor for Knowledge Transfer and Business Engagement.

#### ***Cardiff Business School***

*'Cardiff Business School is keen to ensure that, whilst its research output remains world-class, it also remains relevant to the business and industrial community and informs every-day business practices.'*

*Business relationships are important to us: both in terms of consultancy projects, applied research and in business experts' involvement in our undergraduate and postgraduate programmes.'*

<http://business.cardiff.ac.uk/about/industry>

## 5.2.2 Differing conceptions of ‘business impact’

### *RCUK and ESRC definitions of impact*

Research Councils UK (RCUK) has placed increasing emphasis on ensuring that their investments result in high quality work that has academic impact, and demonstrates wider impacts wherever possible. In a joint statement with HEFCE and Universities UK, RCUK acknowledges that:

*‘... the range of benefits that can flow from excellent research, and the variety of means by which those benefits are achieved and felt in different contexts, are broad and diverse ... They may be apparent in an industrial or business context, in the fields of healthcare and social wellbeing, public policy or as a contribution to cultural life, public debate or improved understanding of the world that we live in.’*  
<http://www.rcuk.ac.uk/kei/maximising/Pages/Impactstatement.aspx>

Along similar lines, ESRC defines impact as including:

- *‘fostering global economic performance, and specifically the economic competitiveness of the United Kingdom*
- *increasing the effectiveness of public services and policy*
- *enhancing quality of life, health and creative output.’*

<http://www.esrc.ac.uk/funding-and-guidance/tools-and-resources/impact-toolkit/what-how-and-why/what-is-research-impact.aspx>

Furthermore, work by ESRC on the impact of research on public policy and practice has identified three broad categories of research impact:

- **Instrumental:** influencing the development of policy, practice or service provision, shaping legislation, altering behaviour
- **Conceptual:** contributing to the understanding of policy issues, reframing debates
- **Capacity building:** through technical and personal skill development.

### *Business School academics’ views of impact*

Two key questions emerged in discussion with academic respondents. Firstly, how do we define ‘business’ in the context of our study? While it was clear that impact on public policy was excluded from our remit, some respondents referred to research that is concerned with improving the performance of public sector organisations such as local authorities. Others were engaged in work with or for not-for-profit organisations, social enterprises, ‘social partnership’ bodies such as trade unions or international organisations such as the United Nations.

Secondly, and related to the above, many respondents felt that it was important to conceptualise 'impact' in a broad sense, and not just in relation to improving the 'performance' of individual private sector profit-making businesses ('instrumental impact'). While this may occur in some cases as a result of research activity, many researchers are more concerned with better understanding how businesses operate, in the process potentially achieving wider conceptual or 'enlightenment' impact on business in general, as opposed to improving the performance of individual businesses. .

We found academics and research leaders working to a broad range of definitions of impact, with most academic respondents noting the REF definition of impact:

*'... an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia...'* (HEFCE, 2011, 26)

Many academics emphasised the value of making impacts on processes or 'on ways of thinking' – for example on how a problem is framed or on how well it is understood. As one professor commented *'The impact [of research] is an outcome – the residual of addressing a problem. Addressing a problem is the thing for us.'* Another described business impact as *'research that enters into the consciousness of people in business and influences their practical decisions.'*

Some respondents expressed scepticism about the notion of business school impact through social science, although the qualitative nature of our student precludes drawing definitive conclusions about the proportion of academics holding such views. As one interviewee put it:

*'I think we need to take a deep breath on the role of management schools and business schools ... We need to do provocative research which is frightening and which makes you feel uncomfortable. We need to say things that no one else is saying.'*

In summary, we found a number of perspectives among academics on the question of research impact ranging from a HEFCE-informed conception of impact; a broader sense that impact is accomplished through a myriad of 'external' encounters in ways which can be difficult to quantify; and some views – the extent of which cannot be estimated from our qualitative research data - which are more critical of an overly-close or instrumental relationship between researchers and individual businesses.



### **Business perspectives on impact**

In the business interviews and case studies it became apparent that businesses in general have a very pragmatic view, in the main, of what business impact is, that contrasts somewhat with the more generalist and wide ranging views of academics and as laid out in impact policy.

One business leader described the experience of explaining to business colleagues that university researchers do not see themselves as servants of the bottom line:

*'I've discussed with the network of businesses that we work with, the whole story of what the REF means, they wanted to understand what it is and what's it all about, so explaining what the REF is and that twenty percent of that REF is likely to be on impact. They were astounded that it was only twenty percent, why is it not everything? But then they're entrepreneurs, so... they're interested only in why we're funding a university and what is the impact of all of that? Where is the benefit accrued to all of that?'*

In another organisation, involved in an AIM fellowship, it was reported that the notion of impact (broadly defined) lay not with measurable business improvements or developments but with academics working with and hence developing key staff and improving their competencies, suggesting 'capacity-building' impact. This demonstrates (and was borne out in other discussions) that organisations often view academic engagement as embedded within a teacher/student relation, and that academics can achieve important impacts through their role as educators as well as through direct engagement with business through research, consultancy or knowledge exchange activities..

In terms of how organisations view academics and universities, another key theme was viewing the university as predominantly being in relationships with business to study those businesses rather than as active in the actual development of that business. Several business respondents seemed fixed upon the notion of this relation as one of being studied in return for tangible benefits such as use of offices or administrative staff.

#### **5.2.3 The Research Excellence Framework (REF)**

The REF is a major driver in the research environment and our interviews revealed no clear consensus on whether the REF has been a positive or negative stimulus for impact-oriented research activities. For some academic respondents, the rise in significance of research impact, as expressed by the REF, has enabled even greater recognition in Schools of those researchers who are working to make impacts on business practices.

However, we also heard some critical voices in relation to the role of the REF in relation to business impact. One professor felt that the REF metric had led him to produce fewer practitioner-oriented pieces of writing. Another agreed that *'the REF has affected my dissemination practice; it is detrimental to my work in engaging with practitioners.'*

Another respondent outlined the difficulty of operating within both academic and practitioner environments:

*'I think one of the biggest barriers to engagement has been the RAE and REF... If you spend time engaging with businesses to get their knowledge that reduces the time you spend engaging with academics gaining theory knowledge, thereby reducing the chances to publish ...'*

On the other hand, business respondents had little to say about the REF *per se*, although many recognise the importance to academics of publishing in high-quality journals and achieving high rankings in relation to their research. Indeed it is often these rankings – based on peer review and/or methodologies that are perceived to be robust - that attract business towards working with Schools such as the three participating institutions.

One such example was given by a business respondent who stated that the 'brand' of the business School, being a top ranking international organisation in its field, conferred status to organisations wishing to work with them. He recounted how, in one case, this had been the primary driver for an organisation seeking to work with one university. In this case, the respondent said when launching a new software product, being able to quote the involvement of the university, almost *ensured* its success in the market.

An International Advisory Board member – a board-level director of a large multinational organisation – also emphasised the importance of working with academics with reputations for high-quality, robust work. She noted however that impact tends to occur when such work is published in the press or in professional journals; moreover the timing of such publications needs to coincide with issues that are predominant in the business world.

### **5.3 Range and nature of business impact**

The most effective way of illustrating the range and nature of impacts arising from interaction between business schools and businesses in relation to social science is to summarise the key features of the case studies that we have undertaken. In addition we draw on interviews and other material to present further evidence of the wide range and diverse nature of interactions and impacts that we have observed during the course of this study.

### 5.3.1 Case study 1: Entrepreneurs in Residence

#### ***Nature of business/academic interaction***

A key focal point for business engagement by Lancaster University Management School (LUMS) is its Institute for Entrepreneurship and Enterprise Development (IEED).<sup>5</sup> IEED aims to ‘integrate teaching, research and knowledge exchange with the business community.’ The approach involves building capacity (ability to contribute to the strategic direction of the organisation); speaking truth to power (broadened world view); and reflection (networking with peers) (Gordon, Hamilton and Jack 2011). This last element seems particularly important. As one engagement manager explained, ‘*we build in lots of exposure to other people/s experience more quickly and cheaply – on a scale that would otherwise take you the rest of your life to achieve!*’

IEED has been responsible for three interlinked programmes. Established in 2004 using funding from the North West Development Agency, the Leading Enterprise and Development (LEAD)<sup>6</sup> programme focuses on the leadership development of participating owner-managers and has involved over 250 companies. The programme involves a series of workshops, master classes, lectures and networking events, concentrating on two areas of the business: the business itself and the personal development of the owner-manager. It provides ‘a framework to increase profitability, innovate and grow the business.’ The Graduate of Lead Development (GOLD)<sup>7</sup> programme helps owner/managers become better strategic leaders with assistance from LUMS and peer-to-peer support from fellow owner/managers.

#### ***Business impact***

Wren and Jones (2012) undertook a quantitative evaluation of the LEAD programme (2004-2011). 110 participants were surveyed and around half of the respondents indicated an increase in sales turnover since joining LEAD – a growth rate of 3.5% a year in real terms. The authors reported that ‘*the mean sales increase is about £360,000 a year, of which £135,000 (37.5%) is attributable to LEAD.*’ They report that ‘*between 80% and 90% of respondents say that these changes to sales, employment and productivity depended on LEAD to some extent, with over a quarter saying that it was to a great extent.*’

A related flagship programme of LUMS is the Entrepreneurs in Residence<sup>8</sup> (EIR) scheme. The EIR scheme began in 2008, assisted by a grant from the ESRC, and the School now plays host to over twenty EIRs, many of whom are longstanding associates of LUMS who have come through the LEAD or GOLD programmes. EIRs are described as providing a voice in the School to help

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<sup>5</sup> [www.lums.lancs.ac.uk/departments/Entrep/](http://www.lums.lancs.ac.uk/departments/Entrep/)

<sup>6</sup> [www.lums.lancs.ac.uk/departments/Entrep/Projects/lead/](http://www.lums.lancs.ac.uk/departments/Entrep/Projects/lead/)

<sup>7</sup> [www.lums.lancs.ac.uk/departments/Entrep/Projects/gold/](http://www.lums.lancs.ac.uk/departments/Entrep/Projects/gold/)

<sup>8</sup> [www.lums.lancs.ac.uk/departments/Entrep/Projects/EIR/](http://www.lums.lancs.ac.uk/departments/Entrep/Projects/EIR/)

better understand the world view of business owner-managers. As a business engagement manager described, one of the roles of an EIR is to act as a 'cultural irritant' and 'to question our ways of working and to challenge our assumptions'. The LUMS website describes the main roles of EIRs as being to work with academic colleagues to:

- Refine current programmes to best fit the needs of other owner-managers
- Enhance the experience of our students through activities and career guidance
- Help foster business ideas and contribute to a variety of classroom activities
- Act as ambassadors to help promote the department's business support activity
- Support the department in its undergraduate recruitment

One of the first EIRs explained to us that:

*'Being a mixture of somebody who's got some modest academic qualifications, some experiences of teaching and reasonable range of experience in being an entrepreneur of running small businesses was quite attractive to the University and to the ESRC which funded that, which allowed me, instead of just coming in to be a guest lecturer or a guest speaker... it was to immerse myself or to be immersed in the academic world, so sitting in on teaching, teaching committee meetings and all of the academic world, so not just seeing what we end up delivering but all of the processes of how that is, is produced in the first place, with a view to saying well I wonder if, just from that world you have come from - the small business world - are there things we can do better?'*

### **Factors facilitating impact**

One EIR approached LUMS prompted by the need to develop particular skills in certain areas of his business. Having bought over a second company he identified he needed to improve his understanding of marketing, strategy and staff development and he feels he has done so, partly through the opportunities to listen to 'inspirational speakers' and partly because of the structured conversations, feedback, advice and scrutiny that he has received from mentors and participants in the programme. Part of the approach rests upon the importance of creating trust in sociable settings:

*'building informality and a social element into the design of our programme is key because it gives the owner/managers the opportunity to develop relationships, build trust or social capital, increasing their capacity to learn.'* As one participant told us, *'I have just had my business/ myself pulled apart this morning by my peers. It's a high trust environment. It reveals everything – we discuss people, figures, struggles, everything.'*

As one of the leaders of the programme describes:

*'We've built that into the programme ... we review it every three months. The loneliness of being owner manager is, I think it's helped by the fact that we created that network, it's quite high in social capital. We remind people about them, we prod them with a stick fairly regularly and say you said you were going to do that, you still haven't done that...'*

Another EIR agreed that the attraction and merit of the programmes is that they offer experienced entrepreneurs the chance to acquire particular management skills which they may never have had the chance to learn, so focused have they been on setting up or sustaining their businesses. He describes the typical participant as saying:

*'We like what we do. And we're very committed. We need to manage people. But we've had little management training, or how to achieve things through other people... So they need help on the journey from technical competence to managerial ability.'*

Yet another EIR described his feeling that *'I was missing something. I knew I was successful but felt there were things I didn't know.'* He suggests that he has benefited from the regular attendance requirements, the assistance of the group peers and of accountability through participation.

*'I now feel that if I don't know something I have the confidence to pick up the phone and ask an expert. I didn't used to trust experts; now it's quite the opposite. I trust them to help me. That's a big turnaround in attitude for me.'*

A further participant described to us how she has taken 'huge confidence' about her own capacity and intellect and her effectiveness as a business leader. She has enjoyed the peer networking and the inspirational speakers. She has loved being involved in the mentoring system and gives up a lot of time to mentor people, often face to face over and above the basic expectations on her. She had long felt regret about not having studied for a degree but her participation in the EIR scheme has boosted her confidence and self image and she identifies being part of a learning environment as a critical factor in that journey.

### **Conclusions and lessons learnt**

The approach and aspirations of the work is vividly summed up by an engagement manager who told us:

*'We want the situation where on any given day, a casual visitor to the School would not be able to distinguish an academic from support staff, PhD students, visiting academics, business owners on campus to mentor students, or student interns working on our knowledge exchange programmes. I think we have a very permeable membrane.'*

### **5.3.2 Case study 2: Micro Factory Retailing**

#### ***Nature of business/academic interaction***

The Micro Factory Retailing (MFR) project is a long-term piece of work that has been led by Dr Peter Wells and Dr Paul Nieuwenhuis from the Centre for Automotive Industry Research (CAIR) at Cardiff Business School. The aim of the MFR project was to create a comprehensive new business model for vehicle manufacturers that puts sustainability at the heart of production. The idea behind MFR is the placing of small factories in local markets that deal with all aspects of the automotive industry, from design, manufacturing, sales and maintenance, where the ethos would be around low volume production and the use of more durable, sustainable materials, while still being a profitable business. This is in contrast to the high volume, low unit cost approach of traditional manufacturing that has led to the endemic over-supply of new cars. Although this project was launched in 2000, the idea was developed through the two academics visiting car factories during the 1990's and gaining ideas from them on how the automotive industry could be made more sustainable. Since the launch of the project, both of the academics have continued to work with car manufacturers around the world, including some companies with business models that contain some aspects of the MFR model.

The two academics have developed relationships with car manufacturers through a variety of ways. Some have come about due to personal relationships, e.g. their work with Axon Automotive, a specialist vehicle manufacturer that produces ultra-light energy efficient vehicles. The founder and managing director of Axon was working as a professor at Cranfield University when he first came across the work being done on MFR by the two academics at Cardiff and invited them to work on a project. Once he spun out the company Axon he maintained this contact with them as he felt 'they are rare people who understand the industry'. In some cases the academics have been directly approached by companies who have seen their work, for example US firm Local Motors and UK firm Gordon Murray Designs (GMD). A representative from GMD told us how he became aware of the two academics through a piece of work they had done on the automotive industry. He got in touch with them and they have since developed a collaborative working relationship that has extended beyond the MFR project. In both the case of Axon and GMD it was felt these relationships were mutually beneficial, as the companies get to keep abreast of the latest research and ideas in the industry and the academics get to see and learn from some aspects of the MFR model working in practice.

### **Business impact**

It was recognised by Dr Nieuwenhuis that although the MFR project has not yet had a significant impact on mainstream manufacturers, they have achieved some success with smaller manufacturing firms, such as Axon and GMD. For Axon, the main impact has been that the MFR project provided their business model in terms of car production, albeit tweaked a little. As the founder said *'[the MFR project] was essential, core to the growth of car manufacturing'*. He also told how the existence of the MFR model gave him the confidence in developing his business model when deciding to spin out the company. For GMD, it was not felt that the impact of the MFR project came in the development of their business model, since that was already in place before contact was made with the academics from Cardiff. Instead, the impact of the MFR has been to demonstrate the foundations for their model for sustainable car manufacturing, and to give them a deeper understanding of the theory behind it. As the GMD representative put it, *'it is great to have independent research by people held in high regard in the automotive industry'*, and *'it gives us a deeper and broader relationship with the customers'*, since they are able to show potential customers the basis behind why they are trying to change the way vehicles are made. The impact on GMD has also been to put them at the forefront of the changes in the automotive industry – *'without them we'd be months, years behind the times'*. Although he found it very difficult to quantify the impact that the MFR project has had on GMD, the business stakeholder summarised by saying *'we couldn't do what we do without them'*.

### **Factors facilitating impact**

It was felt by all interviewed that this research project demonstrated some of the most important factors that facilitate impact. One of these was the proactivity of academics to 'put themselves out there' and disseminate their work in a variety of ways. One of these ways is through publishing in books, as it was felt by Dr Nieuwenhuis that people in industry are much more likely to read books than academic journals. This was confirmed by the founder of Axon, who felt that books were one of the more successful ways of reaching people in industry, as well as writing in trade magazines and attending industry conferences, all of which have been done by the academics from Cardiff countless times over the course of the MFR project.

Equally, business representatives have attended and contributed to a number of conferences, for example Steve Cousins of Axon attended a conference organised by BRASS (with ESRC funding) with support from the EU through the ENEVATE project. Steve Cousins acted as an expert panel member at the conference, which was also used to launch the CBS Electric Vehicle Centre of Excellence.

Both companies interviewed recognised the importance of the academics having a strong grounding behind their research, i.e. producing high quality journal publications, but also that it was necessary for them to have the skills to interact with industry and translate these findings into something that was useable. Another success factor seen in this project was the ongoing collaboration with industry partners in the development, research and validation of the MFR model, which ensured that the findings were relevant to firms working within the industry.

Neither of the companies interviewed felt there were factors that had inhibited impact in the case of the MFR project. For Dr Nieuwenhuis, he felt that one inhibiting factor was the fact that there are no real life examples of the whole MFR model in practice, meaning it was difficult to demonstrate the benefits of using this model to get people on board with the idea. It was also felt that one of the best ways for getting the ideas out into industry, by attending events and conferences, was rather costly and more funding was required for this to happen.

### ***Conclusions and lessons learnt***

The MFR project is an example of a non-linear, interactive approach to business impact, where the research has been undertaken over a number of years with industry partners using the findings on an ongoing basis. The main lessons coming out of this project are the importance of collaborating with businesses in the development of the research project to ensure that the findings are relevant to industry; the ability of the academics to translate the findings into something that can be understood and implemented by businesses; and the willingness of academics in using a variety of dissemination methods to raise awareness of their work. These are factors that have proved important in the success of aspects of the MFR model, such as the use of more lightweight, durable and sustainable materials in car manufacturing and the idea of low volume production, being adopted by companies across the automotive industry. This project is also an example of how it can be difficult to quantify the impact of a research project, especially one that is so forward thinking. However, it is clear that this project has had a significant impact in helping some companies to lead the way in the development of more sustainable vehicle production.

### **5.3.3 Case study 3: Service Networks Project**

#### ***Nature of business/academic interaction***

This project within Warwick Business School was designed to investigate how service networks could be improved for manufacturing companies and their supply chains. Companies such as those involved in transport manufacturing are increasingly bundling their products with services to provide an integrated offer (solution) to their customers. This improves customer retention and increases profitability. Previous research by the team



suggested that supply networks, and importantly the inter-organisational relationships within the networks, were critical to the delivery of these integrated product/service offers.

The project aimed to help companies to increase the effectiveness of network management by investigating good and bad practice of network design; visualise the nature of the networks, the extent of control firms have within them, and the rules that govern the network; and explain the changes needed to move a network or organisation into the provision of integrated solutions.

Fieldwork involved the creation of three qualitative case studies, focusing on a 'best', 'worst' and 'average' performing service partner of MAN Trucks. Interviews were conducted with managers at MAN Trucks as well as the service partners (e.g. vehicle distributors and dealers). Qualitative Construct Analysis (FSQCA) was used to identify a range of possible solutions that could be offered to service partners to improve network effectiveness, depended on their specific needs and challenges.

The project, which formed a doctoral thesis, was delivered through the Innovative Manufacturing Research Centre (IMRC) at Cranfield University. The lead academic supervisor, Dr Mark Johnson, now works at Warwick Business School as Associate Professor of Operations Management and maintains oversight of the research (at the time of writing, the doctoral thesis was in draft form).

The research team was looking for a company partner that supplied an integrated product/service package as well as its network of suppliers and/or customers. The IMRC held a series of events to attract potential business partners to participate and Des Evans, CEO of MAN Trucks UK, attended the first event. MAN SE, the parent company, is a German engineering manufacturing company focusing on the automotive and diesel engine industries.

MAN Trucks did not have a track record of involvement with the university, and the decision to participate in this research came from the CEO personally. During his tenure as CEO, he had been very proactive in improving the company's market share in truck sales, and was keen to develop the concept of providing integrated solutions to MAN's customers through the company's service networks.

Throughout the research, the CEO remained the main conduit of information and contact with the academic research team, although the team did go on to speak to many managers at MAN Trucks and within their service network.

### ***Business impact***

For MAN Trucks, the focus of any business impact is primarily around improving the customer experience through a better service network, raising levels of satisfaction and increasing customer retention. For a company reliant on its relationships with other firms in the supply network to deliver that improved experience, understanding how these relationships work within the network – and how the approach needs to be varied from supply partner to supply partner – is crucial. The research provides the evidence with which to make changes to the management of the supply network. Strategic decisions will be able to be made, for example on whether the company should trade solely with larger dealers/distributors, or strengthen relationships with smaller dealers in key geographical areas.

Final decisions on what action MAN Trucks will take based on this research project will follow the completion of the doctoral thesis.

### ***Factors facilitating impact***

From the academic perspective, the impact of this type of research has been facilitated by:

- A pro-active approach to academic engagement by a senior manager, in this case the CEO of MAN Trucks, who recognises the value of research to his business
- The ability to persuade a wider network of commercial businesses to participate in the research, recognising that current production and sales methods are frequently multi-organisational and therefore a research project in a single company will fail to understand fully the operating environment
- A research approach that is strongly focused on attracting active business interest from the outset

### ***Factors inhibiting impact***

The research team found that gaining access to managers was a problem. Accessing, and securing the participation of companies and managers from within the supply networks was particularly difficult as they could feel defensive about how their own performance was being assessed. A combination of reassuring messages from the academics and MAN Trucks overcame this issue, although for one case study it took three years to agree access.

Dr Johnson stated that:

*‘[Academic] researchers can cause problems with the academic language they use with business partners, which can inhibit the extent to which research findings are understood and translatable into impact on a business’*

### ***Conclusions and lessons learned***

From the academic perspective, the main lesson from this research has been that it is possible to ensure that a research project is relevant to a commercial partner without risking the academic rigour of the assignment. However, this depends on the identification of an enthusiastic sponsor within the main business partner; someone who can effect introductions within their own company, and the supply chain.

Academically, this research network-level research has been viewed as quite an innovative development in the study of business relationships. The level of complexity in accessing all the players caused some significant delays, so it has been important to have a business partner (MAN Trucks) who is willing to be patient.

#### **5.3.4 Case study 4: Knowledge and Innovation Network**

##### ***Nature of business/academic interaction***

The Knowledge and Innovation Network (KIN) was established ten years ago by the IKON Research Unit at Warwick Business School. KIN aims to promote and support collaboration between academics and practitioners to create new knowledge that brings business value for KIN members, and opportunities for academic research and insights.

The principle underpinning KIN is that the traditional, linear model of knowledge transfer and impact – from academia to practitioners – is a naïve one, particularly in a commercial context: academic papers are not normally written with a view to communicating knowledge and insights to people working in business, while businesses are more interested in finding answers to their particular, immediate commercial problems. KIN was established to encourage the joint construction of mutually-beneficial research through on-going collaboration between practitioners and researchers. It runs collaborative workshops to help refine research tools and methods and, later, to disseminate findings.

KIN is an exclusive membership network. Members (businesses) pay an annual fee of £13,500 and the number of members is less than 20. Most of the fee goes back into running the network, but some is also available for funding doctoral research. KIN also has an academic director and a number of

associates or thought leaders ('gurus') who provide additional input into the network.

KIN does not actively seek out members: most join through word of mouth, or via the wider networks of existing members. There is quite a high turnover of members, as businesses can join to address a particular challenge or problem and then leave when satisfied. IKON believes that this helps to maintain an involved membership. Members are expected to be active, and non-competing (unless business competitors are seeking to collaborate in certain areas).

Interaction comes through events and activities put on for KIN members, such as workshops and Special Interest Groups (SIGs). The SIGs are often suggested by members, but are developed in negotiation with academic researchers. The SIGs change over time, depending on interest. More generally, the relationship between the academics and members is quite a loose one. IKON views its key role as facilitating KIN as a network, as one of the co-directors puts it *'it's the networks that create the impact.'*

### ***Business impact***

The challenge for KIN as a process for generating impact is that its specific impact is hard to identify and quantify (fulfilling its belief that impact is not a linear process and therefore not easy to pin down). Members tell IKON that they gain a lot of value from the network, but that even they sometimes struggle to justify their membership to other managers in their organisations.

### ***Factors facilitating impact***

IKON believes that KIN facilitates impact through:

- A highly collaborative approach through the *'joint construction of research that is relevant and academically rigorous'*
- An assumption that the traditional model of disseminating academic research through journals is unlikely to be picked up by practitioners, so different approaches are required
- Facilitating knowledge exchange, not just between academics and businesses, but between businesses themselves. One academic suggested that members would probably say that they got as much value from other KIN members as they did from the WBS academics: impact does not always involve the academics directly

These points are reinforced by comments from some of KIN's members:

*'The strength of KIN comes from the open and sharing attitude of its members. Value is generated because members provide improvement*

*opportunities to their own and other member's practices.'* Martin Shaw, Severn Trent (source: KIN website)

*'We use our relationship and learnings from KIN to continue building on our success to date - maximizing the value of our greatest assets, our people. KIN helps reveal how other companies across industries are creating their own linkages between organisational learning and business results.'* Dan Ranta, ConocoPhillips (source: KIN website)

*'Membership of KIN has given us very cost-effective access to research and practitioner derived material, which we have directly applied to our Knowledge Management programme.'* Peter Hall, Orange (source: KIN website)

### ***Factors inhibiting impact***

Academics identified three factors that can inhibit impact:

- Having a linear view of knowledge transfer: businesses require quick answers to specific problems. Reading, assimilating and implementing knowledge direct from academic journals is highly unlikely to happen in practice. Network relationships provide for a more organic, responsive process
- Cultural perceptions and false stereotypes of academia (often seen as too esoteric) and business (frequently assumed to be uninterested in research) which can stop both sides from entering into collaborative research
- An academic environment that values theoretical studies much more highly than practical research: *'academia is pulling in the wrong direction'*

### ***Conclusions and lessons learned***

The KIN network model of knowledge transfer is a fluid and rather unpredictable model of academic-business interaction; unpredictable because the academic and business partners cannot be certain where the value or impact of the network will ultimately come from. This highlights the wider challenge of identifying the impact of social sciences on business. However, the network also provides a very fluid space for businesses to seek out academic help for their practical problems in quicker and more collaborative way than many mainstream academic-business relationships.

### 5.3.5 Case study 5: KwikScreen

Denis Anscombe is the owner of KwikScreen, a small young organisation making retractable walls mainly for the NHS. KwikScreen began with incubation funding from the Royal College of Arts (RCA), but lost its resource there due to development works. A research fellowship was awarded to explore the design and manufacture relationship and BIC gave office space and admin support to KwikScreen primarily because they wanted to collaborate with KwikScreen on a research project commissioned by the Intellectual Property Office (an executive agency of the Department of BIS). The project was an economic and policy analysis of the intellectual property framework around 'design rights'. KwikScreen, as a small design-driven business provided TWF with insight and a route into the SME community on this issue.

KwikScreen personnel were direct research collaborators on the project, undertaking – under BIC guidance – a number of qualitative studies of innovative design-based SMEs and their approach to the management and business issues of design rights as intellectual property. The report has now been published and KwikScreen are acknowledged as collaborators on the project<sup>9</sup>.

While it is difficult to identify a direct line of impact, recommendations from this report were given to the Parliamentary review group (through the IPO), and, in the recent Queen's Speech, a new IP Bill focusing on design rights was announced<sup>10</sup>:

BIC saw this relationship with KwikScreen as part of their ongoing experiments to develop new kinds of collaborations and co-creation with the community they are researching – they were delighted to support them, but also to have their important insight and access to an innovative SME community.

Denis Anscombe reported that

*'we were homeless and needed space for six months, doing lots of research, working directly with researchers on innovation with multi agency participants including British Aerospace. We were given offices, credibility and resources in return for joint case studies and data collection opportunities'*

KwikScreen are now hosted again by RCA. Asked about the relationship between university and business, Denis said,

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<sup>9</sup> <http://www.ipo.gov.uk/ipresearch-ukdesign-201207.pdf>

<sup>10</sup> [http://www.publications.parliament.uk/pa/bills/lbill/2013-2014/0005/lbill\\_2013-20140005\\_en\\_1.htm](http://www.publications.parliament.uk/pa/bills/lbill/2013-2014/0005/lbill_2013-20140005_en_1.htm)

*'generic advice is not terribly useful, working on joint focused projects is the key to collaboration between business and universities.'*

### **Conclusions and lessons learnt**

The main conclusion and lessons learned from this case is the demonstration that organisations may be reluctant to confer actual business development kudos to academics, sometimes preferring to couch this relation in terms of 'being studied'. This may act as a barrier to the activities of impact and its reporting that ties in with the important notion of how business organisations may view academic institutions as very different organisations to business.

#### **5.3.6 Other examples of business impact**

In addition to the case studies above outlined in some detail, a number of other examples of engagement and impact between business/management schools and business organisations were highlighted during discussions with academics and business respondents. While these did not amount to case studies in the sense that we felt it was not possible, for confidentiality and other reasons, to obtain the perspectives of a range of actors, they nonetheless demonstrate some important points. These examples are presented throughout the remainder of this section and include, for example:

- The **Cardiff Business Partnership**, a formal group of businesses working together with CBS to undertake research into a range of issues that are important to the economy of South Wales.
- The **IKON research network** based at WBS, which carries out funded research projects in the fields of innovation, information technology and organization studies and provides support for policy and practitioner groups through various forms of engagement (including KIN, see section 5.3.4).
- The **Centre for Business Relationships, Accountability, Sustainability and Society (BRASS)** at CBS, an ESRC funded research centre that brought together schools from across the university and their industry links, with the idea of business engagement underpinning the whole research agenda.
- The **Knowledge Transfer Partnership** programme at Cardiff University, which encourages academics to engage one-to-one with businesses and the public sector, and also the **Strategic Insight Programme (SIPs)**, a Wales-wide programme which provides funding for academics to go into businesses to talk about collaboration opportunities

### **5.3.7 Range and nature of business impacts: overview**

It is clear from the case studies and the other examples that we encountered during our research that business/management schools engage with business organisations in a wide variety of ways, resulting in different types of impact upon business performance and behaviour. These include tangible improvements in the performance of small enterprises engaged in learning and networking programmes; significant developments in sustainable production of motor vehicles as a result of long-term collaboration between academics and entrepreneurs; supply chain improvements through research – linked to a doctoral thesis - into service networks and productive business engagement by one of the participating Schools through a not-for-profit subsidiary. The processes through which these impacts are generated are explored in more detail below.

### **5.4 Processes of generating business impact**

As with previous policy impact studies, there is an emerging picture that it is not appropriate or indeed accurate in the vast majority of cases to characterise business impact as a linear process whereby research conducted by academics gets transmitted into the field of practice (e.g. businesses adopting proposed models) and at some point in the future has a measureable impact on business performance.

Interviewees from both academic and business domains described a much more complex interactive process, often involving a number of obstacles, and emphasised the importance of achieving ongoing engagement from the beginning of the research process. Several also noted the importance of medium-long term relationships between academics and business (often resulting from serendipitous meetings or contacts), rather than one-off relationships based on a single project.

Our research suggests that there is no one model that can be elaborated to describe the processes through which social research generates business impact; rather there are a range of processes that are evident in different circumstances. The process that we observed may be characterised by the outline models presented in Figure 5.1.



**Importance of long term relationships:  
Micro Factory Retailing (MFR) project**

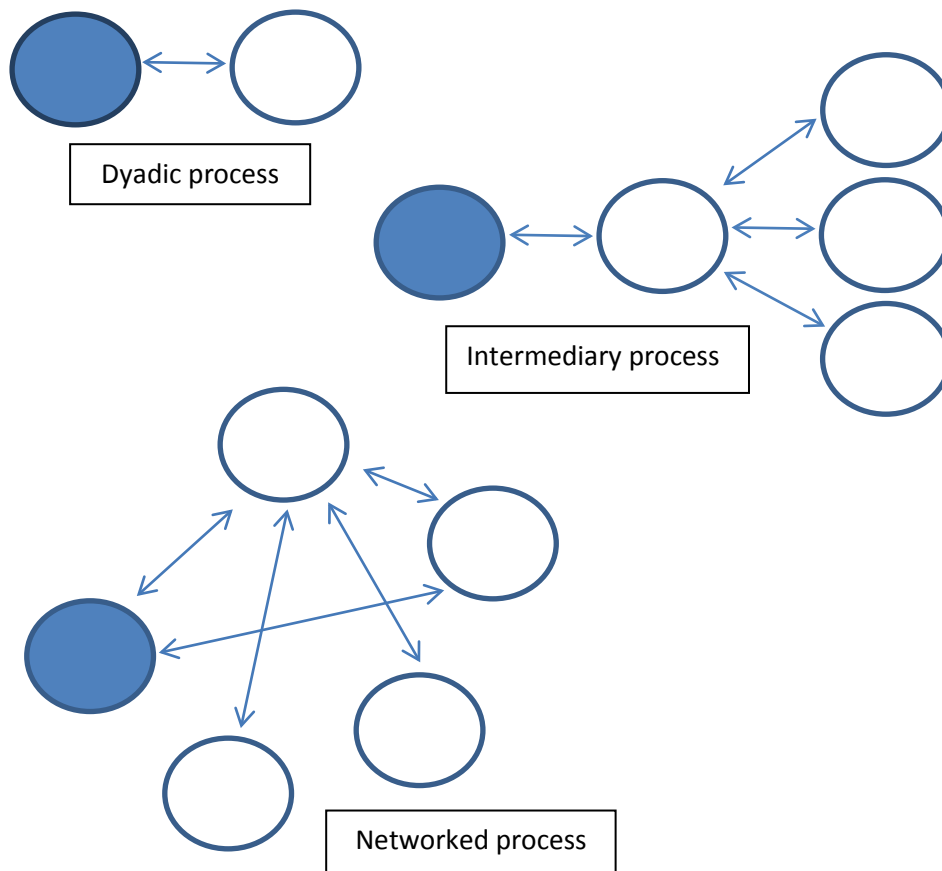
Dr Paul Nieuwenhuis and Dr Peter Wells from Cardiff Business School first linked up with a professor from Cranfield University when they were on the same government committee for the Foresight Vehicle programme in the late 1990s. When this professor learned about their research around MFR he invited them to help design, deliver and review a project he was undertaking with Masters students at Cranfield, which took MFR as the subject of the project. When he then decided to leave the university and spin out his own company, Axon Automotive, he based his business model on the MFR model developed by Dr Nieuwenhuis and Dr Wells, and has since remained in regular contact with them for advice, knowledge sharing and has also recently spoken at a conference hosted by Cardiff Business School as a business representative.

**Collaboration and co-production: business and academic views**

One of our respondents, working with a large engineering company, offered the opinion that *'the biggest impact comes from engaged or collaborative research. That is genuine magic, when genuinely new knowledge emerges from the two different knowledges. ... The collaborative model is the model that really works, working on a shared project with people within an organisation'*

One Senior Lecturer argued that *'personal relationships take a long time to develop and there is a lot of failure and trial and error...you can talk to someone for three years before anything happens'*. His research covered three organisations, and he said all three relationships had begun through accident; *'one was through teaching someone who went on to work in the organisation, one was through relationships developed editing a journal and the third was bumping into someone at the airport'*

Figure 5.1: Process of business impact of social science: outline models



NB: Solid circles represent university/academic actors

The Dyadic process characterises consultancy-type relationships between one academic (or academic team) and one business, illustrated for example by an AIM fellow that we interviewed, who has been working closely with one organisation.

The Intermediary process refers to mediated relationships between organisations and ‘boundary spanning actors’ such as TWF, Entrepreneurs in Residence or intermediary bodies such as national or international regulatory bodies. Our evidence suggests that this is a common and relatively successful model of engagement.

The Networked process model describes relationships in which one or more actors in the university (or more than one university), works with more than one business actor, for example the Cardiff Business Partnership.

While these models do not describe the full range of engagement and impact patterns and process, they are useful in highlighting that impact can occur

through a wide variety of routes, and that the simple linear model based on one to one consultancy-type relationships is only one way through which social science activity within business and management schools might impact upon business.

## **5.5 Factors promoting and constraining impact**

### **5.5.1 Individual and institutional reputations**

Having a trusted reputation for effective research delivery and dissemination was often identified as a prerequisite for sustaining effective relationships. As one respondent put it, *'Otherwise you are just an academic talking about academic stuff!'*

The institutions' status as a university, a place of learning confers important benefits in relation to trust. As one respondent described it to us:

*'... unlike many organisations... there's an element of trust that's inbuilt because you're an educational institution. That level of trust's quite important, that people will step over the boundaries into a university, feeling that they're in an environment they trust... [and that] we're not consultants as such...'*

A barrier in negotiating productive relationships with businesses is a widespread sentiment that academic researchers and businesses may have different timescales in mind for the completion of possible projects, which are in turn a function of contrasting motivations, goals, incentives and/or organisational cultures. As one respondent put it, *'Much of our work might be longer term but businesses are more interested in the issues in the here and now.'* Another interviewee suggested *'the private sector wants it done straightway and then when they get it say six months later it's no longer relevant.'*

One knowledge broker, employed by one of our sample Schools and sympathetic to business imperatives, reflected that commercial organisations *'don't recognise how much time rigorous work takes to do... due to their experience of consultants delivering short term projects.'* A number of academic interviewees expressed the view that universities have become better at working to shorter timescales and that online publication, blogs and social media had enabled academics to get ideas out quicker in ways which can hit a wider audience.

The university-based knowledge broker expressed optimism about this issue suggesting that in his experience, businesses' understandings of the role of academics has changed – *'they recognise that academics are not paid to give an answer like consultants... their work is more about understanding a problem better.'* Or, as another academic participant put it, *'Businesses are*

*more aware of what academics can do to help, rather than thinking they just sit in an office all day proving theories.’ Another professor said ‘I feel I’m having an impact when I get people to think differently.’ Similarly, one of the Lancaster EIRs commented: ‘My role was to help the University join business in their world, working with academics to help them join the small businesses in their world, so I was the sort of ‘sap’ between those two worlds!’*

Our case study evidence suggests that the reputations of individual academics can be as important to external partners and collaborators as the reputation of particular institutions.

#### *Academic reputation*

One of the businesses interviewed as part of the MFR case study said one of the reasons he maintains the relationship with those two particular academics is because *‘they are rare people who understand the industry.’*

The other business interviewed told how he enjoys working with those academics because *‘they’ve done excellent research; it is great to show customers independent research done by people held in high regard in the automotive industry.’*

The same business person also said of the two academics *‘we couldn’t do what we do without them. We need academics... we’re motivated by designing, the processes and so on, but they take it to a different level, they take things one step further.’*

#### **5.5.2 Appropriate communication mechanisms**

Many academic interviewees described adopting a two-pronged writing strategy, producing a journal article but also a practitioner-focused version, underpinned by a common piece of work. As one respondent put it, impact is *‘about getting people to read the stuff’*, for example by publishing in trade journals, despite the fact that these outlets tend to be seen as relatively low status in relation to research quality metrics or academic career prospects. This skill of re-packaging knowledge runs through the practices of academics who see impact as part of their role.

### **Communication skills: business perspectives**

When asked what factors facilitate business engagement and impact a business respondent working with Cardiff academics said:

*‘Those two [the academics] actually communicate their research, not just in refereed journals but in the industry magazines, in books. They also get out into the trade shows and exhibitions. They put themselves about in the industry as well as having high quality journals. They translate their work not only in the written word but they also get out there and meet people and interact.’*

Another business person linked to the same project said about the communication of research: *‘in general universities are not that good at commercialising their ideas and R&D, they often lack the right, bright individuals who can push their ideas.’*

### **Vertical and horizontal communication**

One organisation that had been part of an innovation initiative discussed an example of good communications practice as not only vertical (university/organisation) but also horizontal (organisation to organisation). She explained *‘the contact was not only useful [in the ways described before] but also in terms of the opportunity to bounce ideas off people working on other innovation start-ups and projects, the effects are sometimes more from those synergies than from the direct involvement of the researchers.’*

#### **5.5.3 Ongoing interaction between researchers and practitioners**

Impact is typically generated through processes of dialogue, which take place in a range of formal and informal settings. Many respondents emphasised that generating impact is not a linear process which begins only after the research has been conducted. Instead, academics often seek to engage businesses as early and as often as possible during the research process. As one put it:

*‘Having direct input from key people from day one helped to make the research relevant...bright, switched-on [business] people who recognise the value of research and who are also interested in the more theoretical stuff – it helps the relationship thrive and prosper’*

A number of academics and business respondents described the importance of ‘getting out and about’, suggesting a partly speculative (if targeted) process of working with business actors and tuning into their language and issues of building relationships.

One advisory board member suggested

*‘We need to get better at having groups of practitioners we can call on at those early stages to shape the research and then again at a later stage to give advice on framing, language and how it is framed and presented ...*

#### **‘Getting out and about’**

The Cardiff MFR project is an example of where the academics got ‘out and about’, by attending trade shows, exhibitions and conferences, and visiting companies one on one. One of the businesses interviewed for case study, when asked what they thought were the best ways for academics to communicate their research, said:

*‘the best thing they can do is see people face to face – think about who would benefit from this work and who could commercialise it – they should push it out and speak to businesses directly, whether its visiting them one-to-one or meeting them at a conference or event.’*

One of the co-directors at BRASS talked about how one of the success factors was being proactive, and that people at BRASS were proactive in attending events to speak as ‘you never know what it might lead to’. He gave the example of one of the co-directors of BRASS having done presentations in Japan, and from that they were approached by Fujitsu to do research on emissions trading. He also mentioned in particular how the ESRC funding for BRASS allowed them to send people to events, which then led to contacts being made.

A number of researchers talked of the need to ‘hit the right people at the right time’; or of being able to identify the strategically important actors within a business organisation, the knowledge brokers and influencers as well as the initial gatekeepers. This view is significant as it was regularly expressed as a point of learning by many of the respondents who have the most highly developed track records of working closely with business actors. In this way, one senior professor commented ‘It takes a long time to achieve impact. There has to be very close contact sustained over a long time. You need someone in the political structure of the organisation for it to be taken on board. The transfer of ideas is slow and incremental. There has to be both push and pull.’

One intermediary expressed the view that *'it's more difficult to get into businesses than it is to get the academics on board... they just have so many people knocking on their door.'* This view is interesting as it emphasises the pressures faced by business actors in assessing and dealing with approaches by or overtures from academics. It highlights the constraints on businesses, in ways which move beyond the attention which has been given to the strengths and weaknesses of academic institutions and research practices.

Developing rich contact with business actors is time consuming and intensive. It is complicated by staff turnover, or retirements, in businesses as well as the more general demands of organisational life – *'businesses are busy and you can lose contact if you're not proactive'*. Respondents from one School explained how they were trying to 'solidify' relationships with business e.g. by forming consortia. They pointed out how time consuming it can be to maintain relationships, and that institutions need to be more aware how they can support the development and maintenance of these relationships e.g. knowing more about initial relationship management, organizing more events for business to attend etc.

#### **Maintaining relationships to achieve impact**

The Cardiff MFR project has been built on the academics' relationship with the business person from Axon Automotive (who was previously an academic). The relationship initially started in the late 1990s, but it wasn't until 2007 when the company was formed that the research had an impact on that particular business, when the business model was based on the MFR research. The relationship was maintained over time due to other projects they were doing together, and also the interest of the person who formed Axon in the work that the academics at Cardiff were carrying out, and also the pro-activity of the academics in keeping in touch with that person and maintaining their presence in industry publications etc.

Each of the Schools emphasised the significance of work in the policy arena, influencing government departments in ways which then impact on the business environment.

#### **5.5.4 Talking the 'language of business'**

Many respondents underlined the importance of academics having communication skills and of being able to 'talk the language of business'. One intermediary talked of the 'battle' she had with academics, in trying to encourage them not to be 'lofty' in their language and to encourage them to talk about *'real life businesses they had helped.'* This reflection suggests the

liveliness of the dialogues between actors within the Schools, in trying to negotiate and shape the strategies of external business engagement.

One research director described the language divide in this way:

*‘Those languages [business and academic] don’t necessarily connect and we were talking about this question, how do you broker, how do you connect the languages of organisations?’*

Academics suggested that some have the skills, motivation and/or desire to communicate with practitioners while others do not. *‘Certain types of academics are more suited to engagement... it is about experience and savvy.’* As another senior researcher put it, *‘You can’t have any old academic doing it’.*

One senior professor flagged up the importance of book writing in terms of impact, and related that, certainly in terms of responses from business people and ongoing dialogue, his book writing had been by far the most influential activity he had undertaken. He noted that the ability to write both for journals and for popular management book readers was a skill that could be developed and perhaps helped by ghost writers for some academics who lacked the requisite skills.

#### **The role of the media**

One respondent recounted the increasing practice of universities employing key staff to facilitate communications between the university and external media agencies. *‘This person at XXX is a really senior business media expert and it’s his job just to get out the news about research in their business school. This is becoming something business schools are going to have to do to keep up with the impact agenda’*

#### **5.5.5 Consultancy relationships**

Many respondents identified a linkage between consultancy relationships and opportunities for impactful academic research projects. As one professor explained:

*‘In terms of learning from us, consultancy links are important ... I had to do consultancy in the past to survive and some good work came from that.’*

This view was shared by another respondent who commented:

*‘there are sometimes inhibitions about working too closely with business ... I think quite a lot of them are not just wanting to earn*



*extra bucks - I think the reason they do it is they actually want to have an impact, I really do.'*

Another respondent suggested that the ideas generated by academics then inform the interventions of other actors and agencies in the world of consultancy:

*'They pick it up and then they go in and do consulting with government or businesses and really they use a lot of our stuff - where do they get the material from? ... Every consultant I've ever talked to says all the stuff comes from the Business Schools.'*

#### **5.5.6 Cultural issues**

Academic respondents also suggested cultural issues within business which mitigate against productive research dialogues. At its strongest, a number of academics used the phrase 'anti-intellectualism' to suggest scepticism in some quarters about academic research.

The potential existence of a cultural divide – the extent of which cannot meaningfully be estimated using the data from this study - between academic and business perspectives, reinforced by different motivations and incentive structures, may be illustrated by the following examples from different Schools:

- One advisory board member, from a business consultancy background, was critical of elements of the School's approach to research, *'It does lots of work that could be useful and only a small amount that is. But because of the way academics are rewarded and promoted, it doesn't encourage academics to think about impact. That's a shame because impactful work is lost. .... We're wasting money on stuff that doesn't have impact...'*
- Another business figure described himself as acting as a 'cultural irritant' within the School. He admits to being *'...staggered at the trivial nature of papers that come out and the, almost invisible veneer of knowledge that seems to be added to, to the world as we know it. I... would say it's the Emperor's Clothes and that, you know, somebody needs to say hang on a minute, you're running around naked here...'*
- A business respondent involved with one of our case study projects said about universities and academics in general: *'they don't understand the commercial aspects of what we (as a business) are trying to do. They are not motivated by the same things as us.'*
- One senior professor observed, *'We have different languages and reward structures in academia which don't promote impactful research engagement.'*

- A research director offered a counter view, one which emphasises the autonomy of Schools and of academics arguing that *'You know, we're not a school for business, we're a school that studies management, and management in all organisations ... so there's the fear that if we truly would engage in business we would subjugate our knowledge and our agenda to what business wants and needs.'*

#### **5.5.7 Workshops and events**

All three Schools run events, working directly with businesses, sharing their research with them and potentially contributing to building and fostering mutual understanding and relationships. They acknowledge that assessing the impact of such contact is tricky – *'subtle and hard to measure'*, and complicated by the flux built into professional networks.

One indicator commonly used is repeat attendance: *'if people keep turning up to our events we take that as a sign that we're doing something right.'* A number of interviewees described this as a process of 'drawing in' business actors, by offering them diary excuses to come to the university with the prospect of hearing about some ideas which are both interesting in themselves (and communicated in an engaging way by a skilled and notable speaker) and of potential relevance to their business practices.

As one business actor commented, reflecting on his decision to join the advisory board of one of the Schools, *'I think you either step into the pool and get involved or you stand at the sidelines. Practitioners have to feel welcome and wanted and feel that their involvement has a sense of purpose, and then to see a positive outcome.'*

One business leader reflected that *'the best thing is having lots of exposure to other people's [i.e. businesses'] experience more quickly and cheaply – on a scale that would otherwise take you the rest of your life to achieve.'*

Similarly one knowledge broker felt strongly that academics get much more from these events if they stick around for longer than just their talk, and chat and network with businesses actors. Many senior researchers described themselves as being proactive in contributing to speaking engagements and external invitations. As one put it *'you never know what it might lead to'*. Many acknowledged the importance of funding such as from the ESRC in supporting such activity.

One respondent describe the role of the university as having a more or less unique ability to act as an honest broker of knowledge. Some respondents felt that practitioners are interested in discussing 'big picture issues'. This can happen through seminar events with guest speakers, but also by practitioners who are willing to read short 'think-pieces'.

### **5.5.8 The physical environment**

The Schools also act as hubs – physical and social spaces – in which knowledge exchange takes place. Many of our interviewees identified that businesses get something out of *‘coming along to the university and making connections with other businesses.’*

For example, LUMS is housed in a building which features a large cafe and open space, described by one colleague as being like ‘a village green.’ The significance of this shared interactive space was a recurring focus of our interviewees at Lancaster. It is an expression of identity and ethos, as well as an enabler of dialogue between members of the School and business actors. Reflecting on the communal social area in the School, one respondent described its significance in signalling intent:

*‘We created an open space where visitors, small businesses or the interested bodies and the students engage with each other, with the teaching staff and so forth... so it sends a really important sort of message about, you know, we're open rather than we're closed.’*

### **5.5.9 Intermediaries and research consortia**

A number of interviewees highlighted the significance of the role of intermediaries in facilitating knowledge exchange. The AIM initiative was felt by some to be a good example of this – *‘when businesses had a question they were directed where to go.’*

Many of the researchers we interviewed spoke of building in practitioner and business involvement at different key stages of the research process. Some felt strongly that this form of collaboration or co-production is of great importance. As one respondent commented, *‘otherwise you are just answering questions that people [businesses] don't have’*. This begins with the topic identification stage, the research scoping, preliminary presentations on emerging findings (which gives an opportunity to ‘sense check’) and then framing conclusions and dissemination.

We also found models of businesses coming together to form research clubs or consortia through which they could influence the choices made about areas for research to focus on, in other words playing an active role in setting the research agenda. Research is thus informed by a business view but also guidance on what is feasible and valuable from an academic perspective – as one professor described it, the work derives from ‘a meeting of minds.’ Another senior researcher qualified this approach with the observation that some industry actors had expressed the view that as the thought leaders it should be the academics who propose topics, and then for businesses to

respond by indicating their level of interest. We see academics and business actors negotiating the basis for engagement and making tricky and ambiguous accommodations about the basis and direction of influence.

#### **Business collaboration at the local level**

The Cardiff Business Partnership (CBP) was initiated by two of the largest companies in Wales, based in Cardiff, who were looking to create a 'Welsh focussed business voice'. They approached Cardiff Business School with the view to them doing some research, with the end result being the employment of a full time research fellow from the School. The CBP is now made up of 13 members, who meet every three months to discuss issues around business and the local economy, and what research they would like undertaking on these issues. Led by the Research Fellow and the School, together they decide on research that they would like carried out, for example a recent project on the role of agencies in attracting inward investment in Wales. These pieces of research are then used by the consortium to highlight issues facing the local economy and Wales in general to government bodies, with the overall aim being to improve the economic situation locally and nationally.

#### **5.5.10 Learning and teaching as an impact mechanism**

Many interviewees in these research-led Schools felt strongly that a key mechanism for generating impact is through their teaching and learning provision – *'Our teaching is based on our research and the students take these ideas and use them later in their practice.'*

As one Dean argued *'We actually see it as a continuum, you know, we don't see teaching and research as separate, we see it as a continuum and we see the development of different cohorts along that and with the work... embedded in business.'*

Another respondent agreed, identifying the significance of learning and teaching provision as providing different vehicles for generating impact:

*'if you do have excellent graduates and you do have excellent... acolytes going out there, then they themselves make the change... I think our student body... is a great conduit of our impact but largely uncaptured I would say and probably the same for all business schools.'*

She comments that *'the way a lot of our research is actually disseminated is through often a company training programmes.'*

Most academics interviewed did not see the training of PhD students in the same light, as it was expected that this qualification would lead to an academic rather than a business career. In section 6 of this report, we illustrate how some business respondents detailed the importance of their PhD qualified staff's contribution to their organisations, not just in terms of their research training *per se*, but also in terms of their ability to be at the cutting edge of academic research and feed this back to the organisation.

#### Teaching, learning and business impact

A Cardiff AIM Fellow talked about how he felt his teaching of MBA and postgraduate students was the way he had most impact on businesses. He said:

*'Teaching is the way I have most impact on business. I really try and get them [the MBA or postgraduate students] thinking about ethics and contradictions; if you can fire them up and make them think that's important, which I believe it is, then I think you'll have much more impact. If I can get 400 people going out into the world each year, or even if only 100, thinking that capitalism isn't necessarily, either personally or organisationally, the answer to all the world's problem, then I've probably done much more than by publishing in 10 4\* journals'*

### 5.6 Determinants of impact: synthesis

Business and academic respondents expressed the view that engagement and impact tends to build upon the established **reputations of individuals and/or research teams** for high-quality, robust research.

Impact is also closely related to **institutional reputation**. This is described in terms of the corporate reputation of the School, its general standing within the sector and its place in league tables, but also in terms of a record of producing research within a particular field.

Many respondents described how impact is best generated through **medium and long-term relationships** between individuals and organisations – a sustained ongoing relationship, rather than quick one-offs.

A range of **intermediaries** help to build and sustain relationships and to promote dialogue between researchers and business actors.

In some cases a high profile through **media work** helps to enable impact on public and policy discourses as well as further opportunities for dialogue and research.

A number of senior academics enjoy **high level access** to senior civil servants, policy makers, executives and practitioners on a national and international level. These networks in turn are often used to create research opportunities for other colleagues, especially emerging researchers, in the School.

#### **5.6.1 Role of funding and funding bodies**

Several respondents highlighted the importance of funding, from ESRC and other sources, as facilitators of business engagement and impact. This appears to apply to programmes specifically designed to support knowledge exchange (e.g. KTP, placement fellows, European programmes) and also to funding for research centres, enabling a long-term approach to be taken to both research and business engagement/impact. More generally, some academics viewed such funding as a useful way of making space for research between teaching and administrative duties: *'it's a facilitator, it allows you to focus on your research and make the case internally for doing more of it'*.

LUMS academics and administrators have been successful in attracting follow on funding – including a £71,000 ESRC follow-on grant and two ESRC Business Placement Fellowships – and drawing in external resources to support their ongoing work. This is described by one respondent as 'success breeds success' – for example being able to evidence support from businesses the researchers have previously helped can help in subsequent funding bids. WBS has had significant funding for strategy, organisational learning and resilience (exemplified by the SOLAR research group), enabling these themes to emerge as a focal point within the School.

Some of our respondents suggested that the demands of funding bodies like the ESRC who require researchers to articulate their impact strategy can be helpful to academics because they often *'need a lever to be able to argue with their managers why they should be doing engagement work rather than 4-star articles – if a funding body demands engagement we can justify our engagement work!'* Many suggested that funding regimes meant that impact is being taken more seriously than previously. As one professor commented, *'Looking back to ten years ago colleagues would dread filling in the impact section of a funding application. Now there is a greater realisation that academics need to influence policy and practice.'*

#### **5.7 Good practice and lessons learnt**

The key lesson learnt from this overview of the business impact of social science activities within business and management schools is that a wide variety of mechanisms exist through which business engagement and impact occurs. To that extent it is not possible to identify 'ideal type' good practices that are likely to lead to business impact. Nonetheless a number of good practices can be suggested that are likely to increase the probability of

effective engagement between social scientists and business, leading in many cases to identifiable business impacts.

It is also important to emphasise that undertaking research that is highly regarded by fellow academics and publishing this research in appropriate peer-reviewed journals does not necessarily guarantee that businesses will become aware of such research or utilise its findings to improve their performance. Dissemination through academic channels such as conferences and journals needs to be supplemented by other activities including 'getting out and about' to business and professional conferences or events, writing for professional journals and other media, working with appropriate intermediary bodies, engaging with knowledge transfer/exchange and similar initiatives, incorporating research findings into teaching and learning and maintaining long-term formal and informal links with business contacts and networks. Our evidence suggests that it is not necessary for all of these factors to be in place at the same time, but it is clear that the complex non-linear nature of business impact requires that academic excellence be enhanced by at least some of these factors.

In keeping with our observation that business impact is facilitated by two-way (and often multi-way) communications between academics, business representatives and other associated groups (industry bodies, government departments and agencies, international organisations, trade unions, think tanks etc.) it is important to ensure that business understands the academic culture, as well as vice versa. Our discussions with business representatives suggest that many indeed appreciate the benefits of the peer review system and the need for rigorous and often time-consuming research to underpin findings, while emphasising that business people rarely, if ever, read the resulting articles or attend academic conferences. It is sufficient for most business respondents to recognise the importance of rigorous research and the value of working with academics who are held in high esteem by fellow scholars.

Our discussions with advisory board members and entrepreneurs engaged with business school activities, for example, illustrate that it is feasible for business representatives to gain a fuller understanding of academic processes (including learning, teaching and assessment) and in so doing recognise the benefits to them and their businesses of engaging in this way. Network initiatives such as the Cardiff Business Partnership and the Warwick IKON network also provide models through which mutual understanding of academic and business perspectives, motivations, incentives and cultures can be fruitfully developed.

Finally, it is clear that funding agencies such as HEFCE and ESRC can play an important role in influencing the incentives facing academics, for example through research assessment processes and requirements to report on the potential and actual impact of research projects. We heard mixed views

about the impact of REF on impact-related activities, but it is clear that this and the increased focus placed on impact in relation to funding applications are causing some academics to re-think their attitudes towards 'non-academic' impact. Impact-related activities can be time and resource intensive, and support and encouragement for academics to engage in activities that facilitate impact, linked with ongoing efforts to improve business understanding and appreciation of academic processes will help to further raise the profile of business impact among social scientists and businesses.



## **6. Key findings: business impact of PhD programmes**

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The project looked specifically at the impact on business of social science PhD graduates of the participating Schools, with the following objectives:

- Identify the employment destinations of social science doctoral graduates from the three Schools
- Identify the range and nature of impacts that social scientists with PhDs working in business have contributed to
- Identify and analyse the determinants of the impacts (i.e. why and how impact has been generated)
- Explore impact processes and potential impacts, and identify any barriers to impact generation

This section draws on some of the interviews undertaken as part of the School visits, a survey of PhD graduates from the three participating Schools and case study interviews with PhD graduates and employers. The main data collection exercises were:

- An e-survey of all of the PhD students who had graduated from the three selected business/management schools within the previous 10 years, approximately. The three participating Schools were happy to assist with identifying the sample and promoting the survey, which resulted in contact being made with 605 PhD graduates, 152 graduates from CBS, 275 from LUMS and 178 from WBS. This section presents summary findings, based on 80 completed replies.
- **PhD impact case studies** were drawn from the survey respondents, focusing on those who were working in business and expressed a willingness to participate in further research. Eight such individuals were identified from the survey data and five case studies were undertaken.

Section 4 presents further details of the methodology employed, and questionnaires and topic guides are reproduced in Appendices I-III.

### **6.1 The purpose of PhD programmes**

The overwhelming view emerging from our discussions with PhD programme directors and other relevant School staff is that the PhD programme maintains a classical social science concern with developing the capacity of doctoral researchers, with ‘impact’ not being a central concern of the training being provided.

One exception to this overall view is provided by Lancaster's Management Science department, where the majority of PhD students work on problems identified by commercial organisations and industrial partners. They say:

*'We really need doctoral students who can think at a high level, with strong technical skills. So we see our job as developing students with high technical skills who are then equipped to make an impact. But often when we interview them we find they don't know how to communicate, or have soft skills which will help them in the workplace.'*

In this model, partners come in and contribute to the programme. They provide 'knotty problems' for the students to work on. They pay £30k and in return they get a student to work on a problem and they provide a joint supervisor. They are careful to ensure that it is a serious piece of research and that it *'doesn't just lapse back into consultancy.'* Some of the organisations, such as Unilever or Shell have *'very high level people'* who are capable of exercising those judgements with the supervisor.

Despite this interesting example, it was clear from our discussions that the vast majority of academics see the PhD programme primarily as a means of training future academics, while acknowledging that some PhD graduates may enter careers outside academia. One corollary of this is that very few academic interviewees were able to bring to mind PhD graduates who had gone on to work in business.

## **6.2 Overview of survey findings**

### **6.2.1 Background information**

As described in section 4.4, the three participating Schools provided details of graduates who had completed their PhDs within the previous ten years. Through the alumni offices emails were sent to 605 such individuals with a link to the online questionnaire and the participating Schools also promoted the survey through LinkedIn. The survey was open between 31 October and 5 December 2012 and eighty social science PhD graduates completed the questionnaire. Forty of these completed their doctorates at Lancaster, 23 at Warwick and 16 at Cardiff. One respondent did not state their institution. 70% of respondents completed their PhD on a full time basis. 46% had obtained their PhD within the past five years; 24% in the past three years.

The most common source of funding for their PhD was a university scholarship, followed by ESRC (20%), self-funding (18%) and an overseas government grant or scholarship (13%). All of those who stated they were employer funded (11% of respondents) were working within universities at the time.

We asked respondents where they were currently based. Just over half (55%) said they were based in the UK, with just over 10% being based in London. The rest were based overseas, with respondents answering from 23 different countries.

Respondents were asked to indicate whether they would be willing to participate in further research and the research team contacted the 8 individuals who were employed within the business sector and willing to participate in a follow-up interview. Five case studies were generated through this process and the responses of these individuals and – where relevant – their employers are presented throughout this section.

### **6.2.2 Employment destinations**

The majority of respondents (85%) stated that they were in full or part time employment. A further 8% said that they were self-employed or running their own business. Only 4% were unemployed, and the remaining 4% had other circumstances (e.g. disabled).

Of the 74 respondents who were in employment or self-employed, the majority (73%) were working for a university or higher education institute. Seven respondents (9%) were working for a private sector organisation, with six respondents (8%) being self-employed/running their own business and the same number (six respondents, 8%) working for a public sector or government organisation. One person worked for a voluntary sector organisation or charity.

Table 6.1 shows the employment destinations of the respondents who were working outside the HE sector.

### ***Impact of PhD studies***

The majority of PhD graduates (78%) who were currently in employment or self-employed thought their PhD had been 'very useful' in giving them skills/knowledge that have been helpful in developing their career. A further 14% said that it had been 'quite useful' and 7% were 'neutral'. Only one person said it had been 'not very useful' – this person was already working in a HEI as an assistant professor before doing their PhD.

Table 6.2 shows that graduates working in a university or HEI were the most likely to say their PhD had been very useful in giving them skills and knowledge that have been helpful in developing their career. Public sector or government workers were least likely to say this; however it should be noted that this is based on a small sample.

**Table 6.1: Employment destinations of those not in a university or HEI**

Private/voluntary sector	Self-employed/own business	Public sector/government
Equity analyst for a financial organisation	Chief investment officer for their alternative asset management firm	Artificial intelligence researcher
Assistant manager at a multinational finance retailer	Director of their personal and professional development consultancy	Economic adviser
<b>*Engagement Leader at a global management consultancy</b>	<b>*Managing director of their business consultancy</b>	Junior economist
Head of Pricing for a multinational online retailer	Organisation consultant within their consultancy aimed at the not-for-profit sector	Researcher
Head of Sustainability Group at a multinational accountancy and business consultancy firm	Self-employed marketing researcher and consultant, statistician and scientific adviser	Secretary
<b>*Programme Manager at a work life balance advisory, support and lobbying organisation</b>	<b>* Freelance senior international development consultant</b>	Transport Planner
Research Analyst at a multinational asset management firm		
<b>*RMB specialist at a worldwide banking firm</b>		

Note: \* indicates case study respondents

**Table 6.2: How useful the PhD has been in their subsequent career**

	Private/voluntary sector/self-employed (n=13)	Public sector (n=6)	University/HEI (n=52)
<b>Very useful</b>	62%	33%	87%
<b>Quite useful</b>	23%	50%	8%
<b>Neutral</b>	15%	17%	4%
<b>Not very useful</b>	0%	0%	2%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

One case study PhD graduate elaborated on the impact of his studies on his career and on his employer:

*‘The main difference the PhD has made is that I can look at organisations and their approach to practices and every day work, and break it down and see how practice theory could help’*

*‘The PhD also taught me about the multiplicity of objects – that we’re not all referring to the same object even if it seems we are. I can unpick what different people believe terms such as sustainability mean’*

*‘I can now add value to businesses by demystifying buzz words, making them understandable and demonstrating how practices and routines within a business can be changed’*

*‘I learnt about interviewing people and unpicking what’s really going on, what are the underlying issues, rather than taking what they say at face value’*

Another of our PhD case study participants explained how his PhD had been key to getting his post, and how he used the knowledge gained during his PhD in his everyday work – *‘I use my specialist knowledge to inform my practice working within [the organisation]. The issues I am dealing with on a day to day basis are definitely easier to think through and operationalise with me having researched at the highest level in this area.’*

### **6.2.3 Skills and knowledge developed through PhD**

The skills or knowledge that respondents were most likely to say they had developed through their PhD were knowledge of the broad subject area and the specific topic of their PhD, literature reviews and research methods. The skills that respondents were least likely to say they had developed were quantitative analysis, followed by project management.

Respondents working in the private or voluntary sector, or self-employed, were more likely than respondents working in a university or HEI to say they had developed the skills and knowledge areas of report writing, project management and their broad subject area (Table 6.3).

**Table 6.3: Skills and knowledge developed through PhD**

	All	Private/voluntary sector/self-employed (n=11-14)	Public sector (n=5-6)	University/HEI (n=45-53)
<b>Broad subject area</b>	97%	100%	100%	96%
<b>Specific topic of PhD thesis</b>	96%	86%	100%	98%
<b>Literature review</b>	97%	92%	100%	98%
<b>Research methods</b>	96%	93%	100%	96%
<b>Data collection methods</b>	85%	85%	40%	88%
<b>Quantitative analysis</b>	59%	57%	83%	58%
<b>Qualitative analysis</b>	73%	77%	0%	78%
<b>Project management</b>	65%	62%	100%	61%
<b>Time management</b>	70%	67%	80%	71%
<b>Communication</b>	78%	73%	100%	76%
<b>Report writing</b>	84%	100%	100%	80%

#### **Role of publication skills in a business environment**

One large financial organisation who had employed a PhD graduate, and former post-doctoral researcher stated that the ability to publish, and to read and translate peer reviewed academic work was one of the key contributions expected from their employee. Here the rigours of high quality publications were clearly identified as important by the employing organisation. This was not just in terms of knowing, understanding and being able to translate cutting edge research but also that the employee would have a high level of credibility when presented to customers and other stakeholders due to his publication record.

#### **6.2.4 How useful each skills/knowledge area has been in career to date**

Overall, the skills and knowledge areas that respondents were most likely to say had been ‘very useful’ in their career to date were research methods, knowledge of the broad subject area and report writing. The areas least likely to have been very useful were project management, time management and quantitative analysis, although almost one in five said the latter area was ‘not applicable’.

**Table 6.4: How useful each skill and knowledge area has been in career to date**

	Very	Quite	Neutral	Not very	Not at all	Not applicable
<b>Broad subject area</b>	64%	29%	5%	1%	0%	0%
<b>Specific topic of PhD thesis</b>	47%	38%	12%	1%	1%	0%
<b>Literature review</b>	58%	26%	11%	4%	1%	0%
<b>Research methods</b>	69%	22%	7%	3%	0%	0%
<b>Data collection methods</b>	57%	23%	12%	4%	1%	3%
<b>Quantitative analysis</b>	40%	19%	14%	6%	3%	19%
<b>Qualitative analysis</b>	52%	11%	15%	7%	4%	10%
<b>Project management</b>	39%	24%	19%	4%	4%	10%
<b>Time management</b>	40%	31%	17%	4%	6%	3%
<b>Communication</b>	49%	27%	11%	5%	4%	3%
<b>Report writing</b>	59%	19%	12%	7%	0%	3%

The areas of skills and knowledge that private/voluntary sector/self-employed respondents were more likely than respondents employed in HEIs to say had been very useful were quantitative analysis, qualitative analysis and project management. However, generally people in non-academic roles were less likely to say that the various areas of skills/knowledge had been very useful in their career. The areas that private/voluntary sector/self-employed respondents were least likely to say had been very useful were literature review, time management and the specific topic of their PhD thesis.

**Table 6.5: Proportion of respondents saying skills and knowledge had been 'very useful'**

	Private/voluntary sector/self-employed (n=13-14)	Public sector (n=6)	University/HEI (n=49-53)
<b>Broad subject area</b>	57%	33%	71%
<b>Specific topic of PhD thesis</b>	36%	17%	55%
<b>Literature review</b>	29%	17%	70%
<b>Research methods</b>	64%	17%	75%
<b>Data collection methods</b>	57%	0%	64%
<b>Quantitative analysis</b>	50%	0%	43%
<b>Qualitative analysis</b>	62%	0%	57%
<b>Project management</b>	43%	0%	41%
<b>Time management</b>	31%	17%	46%
<b>Communication</b>	50%	33%	50%
<b>Report writing</b>	50%	67%	62%

One of our PhD graduate respondents argued that his specialist knowledge was useful in completing the tasks associated with his post. However another PhD student working for a large financial organisation opined that the specialist knowledge gained during her PhD was not used at all. She argued that the key benefit to her of a PhD was the development of the skills of project management, independent research and initiative to tackle complex tasks. *‘My project management skills especially are highly valued within the organisation, and were the basis for my recent promotion’*

### 6.3 Range and nature of business impacts

All respondents in employment or self-employed were asked to give examples of projects or activities they have undertaken in their career where they felt their PhD was relevant to the work they were doing; they were also asked in what ways they felt the skills and knowledge gained through the achievement of their PhD contributed to having an impact on the organisation they were working for. The verbatim responses for the graduates working in the private or voluntary sector, and those that were self-employed, are presented in Table 6.6 below and synthesized in 6.4.2.

**Table 6.6: How the skills and knowledge developed through the PhD have been useful in business**

Current job	Please could you provide examples of projects or activities you have undertaken, in your current or previous job roles, where you feel your PhD qualification is/was relevant to the work you are/were doing?	In what ways do you think that the skills/knowledge you gained through doing your PhD to contribute to/have an impact on the organisation that you currently work for?
<b>Equity analyst for a financial organisation</b>	Sometimes there are M&A cases in equity markets	Developed better understanding of M&As and the behaviour of equity markets
<b>Assistant manager at a multinational finance retailer</b>	Keeping up with latest research and applying it to grow the organization.	Discipline, Time Management, External Focus, Innovation
<b>Engagement Leader at a global management consultancy</b>	- helping me structure my work, think conceptually - brand and marketing knowledge - research skills	- as a selling point for new business development (important for some clients) - thought leadership
<b>Head of Pricing for a multinational online retailer</b>	very few. my PhD was focused on business process improvement initiatives. most of my jobs have been related to commercial management which is a different discipline.	Looking beyond immediate effects to try and understand true causes. Understanding how one decision in a particular area influences many others e.g. in pricing how a change to pricing may influence marketing, customer service, legal, billing etc



<b>Head of Sustainability Group at a multinational accountancy and business consultancy firm</b>	All my organizational knowledge came from the thesis theory and field work	-
<b>Programme Manager at a work life balance advisory, support and lobbying organisation</b>	My two most recent positions required a completed PhD, as there was a strong emphasis on designing, conducting and analysing large-scale original, bespoke research in an organisation setting	A strong sense of credibility and expertise with external commercial organisations
<b>Research Analyst at a multinational asset management firm</b>	Knowledge of how to do academic research	Doing better research
<b>RMB specialist at a worldwide banking firm</b>	Research ability	-
<b>Chief investment officer for their alternative asset management firm</b>	<ol style="list-style-type: none"> <li>1. programming skills</li> <li>2. financial modelling</li> <li>3. quantitative analysis</li> <li>4. report writing</li> <li>5. presentation skills</li> </ol>	The skills and knowledge gained from my PhD helped me to enter the industry, contribute to the investment processes, and enable me to test and develop new research ideas. The impact is significant.
<b>Director of their personal and professional development consultancy</b>	I taught at a university - undergraduate and postgraduate courses in management and leadership. Would not have got the job without a PhD	I am a researcher at heart, and always curious - so I always research directions for my business to grow in. I research market practices so that I make well-grounded changes
<b>Managing director of their business consultancy</b>	Bringing a sociological perspective to the understanding of sustainability into the organisation	
<b>Organisation consultant within their consultancy aimed at the not-for-profit sector</b>	it helps me and colleagues to unravel what we are doing and why in relationships with clients. It also helps us recognise why we do what we do in terms of our values. All this helps with confidence and capacity to take on new work in a very turbulent environment.	<p>it is still going! lots of small firms have sunk in the current climate.</p> <p>it gives me a real grip on the business</p>
<b>Self-employed marketing researcher and consultant, statistician and scientific adviser</b>		I hold a much broader and stronger knowledge base and improved skills in research, at least in my view as to what I have to offer, but in practice, unfortunately, managers in organizations I have contact with do not display much

		understanding and appreciation for that. I am considered "over-qualified".
<b>Freelance senior international development consultant</b>	Sourcing of consultants for international development projects is done via a stringent technical evaluation framework of applicants. For a senior consultant, the minimum requirement is Masters level education. By having a PhD additional evaluation marks are awarded.	The PhD involved research on the application of SSM ideas for international development projects. These research findings have been useful in providing an alternative approach to managing international projects.

## 6.4 Business impact of PhD graduates

Based on the survey findings and the results of the interviews for five case studies out of the 14 examples listed in Table 6.6, we can make the following observations in relation to the objectives of the research:

### 6.4.1 Employment destinations of social science doctoral graduates

As noted above, the majority of PhD graduates (73%) were working for a university or higher education institution (HEI). This corroborates the information gathered through the qualitative interviews with academics from the business schools, who commented that the majority of PhD students remained within academia after completing their studies.

Just under 10% of PhD graduates (7 respondents) were working for a private sector organisation and a further 8% (6 respondents) were self-employed or running their own business. The nature of the employment of these graduates is summarised in Table 6.6 above, revealing a wide range of organisational types, sectors and roles, with no clear pattern, although it appears that financial institutions and consultancy firms were the most common types of business to be working in.

### 6.4.2 Range and nature of impacts of social scientists with PhDs working in business

As noted in section 6.2.4 above, the majority of respondents in employment or self-employed agreed that their PhD had been 'very useful' in giving them skills/knowledge that have been helpful in developing their career. However, there is evidence to suggest that graduates working in academia found it more useful than those working in the private sector or self-employed.

However, PhD graduates working in the private sector or who were self-employed did report a wide range of impacts that the skills and knowledge developed through their PhD have had (see Table 6.6 for an overview). These ranged from a better understanding of a particular subject area important to their role within the organisation, to applying research skills to grow their

own organisation. The range and nature of impacts offered by PhD graduates in both the survey and the case studies have been grouped and listed below. It should be noted again that these impacts are based on the responses from a sample of 14 people.

- **Bringing new ideas to the organisation** – using the subject specific or general research skills developed through the PhD to offer new and innovative ideas to a company e.g. *'thought leadership', 'testing and developing new research ideas'*
- **Strong sense of credibility, expertise and employability** – employing an individual with a PhD acts as a 'selling point' for both the individual and their organisation to external commercial organisations or potential clients. Some graduates also felt their PhD qualification was vital in securing their position with an organisation as it made them stand out from the crowd. In the case of an international development consultant running his own business, a PhD qualification was seen as a distinct advantage in relation to the procurement processes operated by key clients.
- **Translating between the world of industry and academia** – some graduates felt they were able to keep up to date with the latest research findings and more importantly translate and use these findings to grow the organisation, whether it was their own or their employers e.g. *'I always research directions for my business to grow in. I research market practices so that I make well-grounded changes'*
- **Using subject specific knowledge to grow the business** – using the findings from their own PhD or the subject specific knowledge they developed to enhance the work done within their role e.g. *'these research findings [from PhD] have been useful in providing an alternative approach to managing international consultancy projects'*
- **Offer of high quality work skills** – some graduates felt the work skills they had developed through their PhD such as project management, report writing, communication skills and time management were very beneficial to their employers as they were able to apply these skills to deliver higher quality work
- **Being able to think 'outside the box'** – using their highly developed analytical skills to unravel the real issues behind the challenges they face and using their knowledge of theory to provide solutions e.g. *'looking beyond immediate effects to try and understand true causes. Understanding how one decision in a particular area influences many others'*

This quote was from one PhD graduate who felt their qualification had helped them in industry significantly:

*'The skills and knowledge gained from my PhD helped me to enter the industry, contribute to the investment processes, and enable me to test and develop new research ideas. The impact is significant'*

A corporate director working for a large international ICT organisation stated that most of the PhDs employed in her organisation had studied scientific or technical subjects and tended to work at the company's Research and Development facilities. They do employ social scientists and value the contribution that they make to, for example, product development; however it can be difficult to identify relevant internal projects that are not resource-intensive for the organisation.

The determinants of impact, i.e. how and why impact have been generated, were mainly reported qualitatively to be the subject specific knowledge that PhD graduates held and the research skills they had developed. For example, for one graduate their PhD gave them a *'better understanding of M&As [mergers and acquisitions] and the behaviour of equity markets'*, which in turn helped them within their role as an equity analyst.

The survey results show that these respondents were most likely to say the skills and knowledge of research methods, qualitative analysis, data collection methods and the knowledge of the broad subject area were most useful in their subsequent career.

## **6.5 Impact processes, potential impacts and barriers to impact generation**

The case study research to date has generated some limited information on impact processes and potential impacts associated with PhD graduates working in business.

From the graduate survey and case studies, two main barriers to impact generation have been identified by graduates. One of these is something that has also been mentioned by some academics, that the *'publication ethos'* within universities is a primary barrier to generating impact from within academia, since the priorities are on publishing journal articles rather than interacting with business. In one case - a PhD graduate who had moved from an academic to a business position - this was cited as a main reason prompting his move out of academia, so that his *'initiatives could actually get to be implemented'*.

Another barrier to impact generation, according to some PhD graduates, was the perception that some businesses viewed them as being *'over-qualified'* and that businesses lacked an understanding and appreciation of the high level skills and knowledge a PhD graduate could bring to an organisation. One respondent to the survey described how they thought that a PhD in the UK was seen as *'a nerds degree focused on becoming a lecturer'*, whereas in other countries it could be a real *'leg up'* in your career.

One of our case study respondents told how in a recent job interview their potential employer expressed concern that the graduate might be too focussed on the specialist areas of research and theory, reflecting the fact that some businesses feel the PhD is a theoretical qualification that is too specialised for many job roles. However, for balance it should be noted that a small number of survey and case study respondents felt that their PhD qualification was vital in gaining their position within an organisation.

## **6.6 Businesses' appreciation and need for skills associated with PhD training**

One of the employers we consulted with<sup>11</sup> felt that the PhD graduate they employed provided the organisation with *'a proven level of high analytical capability in our field, plus connections to academia and an understanding of the academic world and processes (for things like writing for journals) which we didn't have'*. The employer also reflected some of the graduates' feelings as noted earlier, that having an employee with a PhD qualification provides the individual and the organisation with added credibility to external organisations. The employer was also complimentary of the individual's ability to act as a 'translator' between the organisation and the world of academia, meaning the organisation could be kept up to date with the latest research findings and theory in the fields relevant to them.

Another respondent recounted that their employer noted in appraisals that they had an enhanced ability to manage projects, and could be relied upon to lead, organise and complete quite complex projects independently, which had made a significant contribution to the organisation. This highlights the dual appreciation of PhD qualified staff, not just in terms of a very high level of subject specific knowledge, but also in terms of the transferable skills they brought as a result of successful completion of a PhD.

## **6.7 Good practice and lessons learnt**

Overall, the majority of social science PhD graduates that we consulted with who were working in industry felt that the skills and knowledge gained through their PhD had contributed to having an impact on the organisation they worked for or ran themselves, with the nature of impacts ranging from generic work skills such as time management to the utilisation of areas of knowledge and skills developed through the PhD having a significant impact on their organisation.

One area of interest for this study is how PhDs could be made more relevant to the world of business. Interestingly, when asking this question to the case study respondents, two out of the five that we interviewed expressed concerns that if PhD studies were adapted to be made more relevant to

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<sup>11</sup> Note that two of the five case studies undertaken to date involve people who are running their own businesses and therefore do not have employers as such.

business, the academic rigour and prestige of the qualification may be weakened. It was felt by one respondent that the theoretical and conceptual focus of the PhD was what made it a distinctive qualification, with the other believing that the theoretical nature of a PhD could still be useful in industry if the theory can be translated into practice.

In terms of what lessons have been learned for enhancing the contribution of social science doctoral graduates in business, our findings to date have uncovered the following suggestions for improvement:

- **Developing the skills required in graduates to communicate and translate research findings** – reflecting one of the findings from our interviews with academics, it was felt by some graduates and employers that one of the most important skills was the ability to communicate potentially complex research findings in a form that could be understood and utilised by businesses in order to generate impact from social science research. One example given was the use of books, with one survey respondent who ran their own consultancy firm describing how they developed their PhD thesis for publication as a book, which both developed their skills in the presentation of research and also helped in terms of marketing and publicising their own skills and knowledge.
- **Improving the ability to position themselves favourably in the job market** – related to the above idea of developing the skills to communicate research findings, another suggested area for improvement by one of the case study graduates was that PhD students should be helped to position themselves better in the job market. As noted previously, there is a perception that some businesses view a PhD as a highly theoretical qualification, however it was suggested that if students developed the skills of being able to demonstrate that their knowledge can also be applied in practice, this could lead to more PhD students being employed in industry.
- **Strengthening PhD alumni networks** – it was suggested by some graduates that universities should better leverage their talent once PhD students have left the institution, particularly those that have gone into industry, for example by bringing them in to do guest lectures and drawing on their networks within industry. One graduate who had gone into industry described how she felt ‘forgotten’ once she had completed her PhD and soon lost touch with her academic networks.

## **7. Conclusions**

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This report has presented the key findings from our study of the impact of social research on business, drawing primarily on comprehensive information from visits to three leading UK management/business schools and a survey of 80 PhD graduates from these three Schools. We have also incorporated information from case study interviews with a number of academics, businesses and PhD graduates.

### **7.1 Business impact of social science**

- The study identified examples of a wide range of business impacts arising from social science activities within the three participating Schools. These include tangible improvements in the performance of small enterprises engaged in learning and networking programmes; significant developments in sustainable production of motor vehicles as a result of long-term collaboration between academics and entrepreneurs; supply chain improvements through research – linked to a doctoral thesis - into service networks and productive business engagement by one of the participating Schools through a not-for-profit subsidiary. These examples illustrate the various ways in which businesses can benefit from interaction with business/management schools, with no dominant pattern of impact emerging.
- The public statements of all three Schools, in strategy documents and through the interview responses of senior leaders within the Schools, suggest a high level of commitment to business impact – it ‘comes with the territory’ of being a top-ranked institution and plays a significant role in their mission, practice and reputation. Connections and interactions with business are an important element in the brand and identity of these Schools. Impacts are achieved through dialogue between academics and business partners, accomplished in a range of formal and informal settings, in contrast to ‘linear’ models which assume that impact occurs through businesses making use of pre-existing research. Involving practitioners at multiple stages of the research processes (including models of research co-production) was felt by many to increase the prospects of generating impact.
- Business actors play important roles which go beyond being the recipients or beneficiaries of social science research: they also act as advisors, co-producers, advocates, champions, ‘probers’ and ‘cultural irritants’.
- Our own observations and responses from a range of informants confirm that there is a welcoming ethos in each of the Schools, a respect for business perspectives and a strategy of ‘pulling in’ business actors to the work and governance of the Schools. Schools are active in

organising business-oriented events to share research findings or to generate new ideas.

- We found different traditions of scholarship co-existing in the Schools and within and across their different disciplines. The schools support applied and operational research, action research, as well as more critical work which is less grounded in 'solving' or addressing business concerns.
- Some business actors questioned the value of academic work that achieves only a small audience or little impact in commercial settings. Some academics interviewed for this study, however, felt that it is important to 'go where the ideas take them' rather than service 'narrow' business agendas. The qualitative nature of the research means that it is not possible to estimate the proportion of all academics holding these views, but it demonstrates that not all are committed to achieving business impact through their work.
- Some academics were critical of business cultures which they felt can be 'anti-intellectual', or closed to difficult concepts or ideas.
- Academics and business respondents often referred to a 'language gap' and emphasised the importance of academics being able to 'speak the language' of practitioners. There was a widespread sense that the skills to do so are not universal in Schools.
- Some academics pursue two-pronged writing strategies and work to repackage their research for different audiences.
- The Schools' position as part of a university confers benefits in terms of trust and standing. It is a useful point of difference which sets them apart from the concerns and profit motives of, for example, consultancy firms, or commercial rivals and generates confidence that academics will act as 'honest brokers' in their interactions with businesses.
- Many of the academics are skilled in working with businesses to generate a shared understanding of the role that Schools can play in addressing knowledge or practice-based problems.
- Developing and sustaining relationships with business actors is a time-consuming and intensive process which is set within a context of competing demands and performance expectations on academics.
- The Research Excellence Framework (REF) is a major driver in the research environment. We found different accounts of how the REF has influenced the choices and strategies of researchers within the Schools, with no clear consensus apparent.
- On the one hand the REF may have increased the legitimacy of business-focused or applied research and, more widely, the spectrum of business engagement activities; however for some, the REF has been



counterproductive as a result of the primacy of academic publications and its somewhat linear notion of impact.

- Some respondents were sceptical about consultancy relationships, seeing this activity as less legitimate in a university than scholarly research. Others emphasised the value of these engagements for producing knowledge and for generating further research possibilities.
- Funding bodies, such as the ESRC, have played an influential role in encouraging academics within business and management schools to develop impact strategies and to articulate the purpose and practitioner-relevance of particular projects.

## **7.2 Business impact of PhD programmes**

PhD graduates working in the private sector or who were self-employed reported a wide range of impacts that the skills and knowledge developed through their PhD have had, including:

- **Bringing new ideas to the organisation** – using the skills developed through the PhD to offer new and innovative ideas to a company e.g. *'thought leadership', 'testing and developing new research ideas'*
- **Strong sense of credibility, expertise and employability** – employing an individual with a PhD acts as a 'selling point' for both the individual and their organisation to external commercial organisations or potential clients.
- **Translating between the world of industry and academia** – some graduates felt they were able to keep up to date with the latest research findings and more importantly translate and use these findings to grow the organisation.
- **Using subject specific knowledge to grow the business** – using the findings from their own PhD or the subject specific knowledge they developed to enhance the work done within their role.
- **High quality work skills** – some graduates felt the work skills they had developed through their PhD such as project management, report writing, communication and time management were very beneficial to their employers
- **Thinking 'outside the box'** – using their highly developed analytical skills to unravel the real issues behind the challenges they face and using their knowledge of theory to provide solutions

Other key findings from and implications of this element of the study include:

- Our research corroborates findings from qualitative interviews, that PhD programmes are seen by academics and students alike as being primarily concerned with training future academics, with ‘impact’ having a generally low profile. However, some impact stories have emerged from former PhD students who have moved into industry, highlighting the potential importance of PhD funding and training as a driver of business impact
- Our work suggests that a significant minority of PhD graduates of the three participating Schools go on to enter employment in the business sector, or to run their own businesses. Our evidence indicates that such individuals and their employers appreciate the value of the training they have received, with a wide range of skills developed by graduates through their qualification viewed as being very useful in business, from work skills such as report writing to more qualitative skills like analytical thinking.
- The examples of business impact through PhD graduates suggest that, while employers appreciate the high levels of analytical and intellectual skills provided by PhD graduates, there is scope for business and management schools to place greater emphasis on more practical skills such as project management and the communication of research findings to non-specialists, as part of PhD training and supervision processes. This might be reflected in ESRC guidance in relation to PhD training programmes, financial support for training programmes involving employers, encouragement for academics engaged in ‘impactful’ activities to become more involved in PhD supervision and continued promotion of and financial support for doctoral programmes which involve the active collaboration of businesses.

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## **Appendix I: Topic guide for School visits**

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### ***Purpose and Sample Universities***

We have been commissioned by the ESRC to undertake a study assessing the business impact of social science. Our study will begin by tracking forward from the research and related activities at a small number of HEI business/management schools – Cardiff, Lancaster and Warwick. These schools are good focal points for the study given the level of ESRC funding and support they have attracted over the last 10 years, and because of their commitment to generating impact.

### ***Scope of Interview Sample***

We will undertake semi-structured interviews with key actors and stakeholders in the schools, including:

- the Dean, senior managers and research leaders
- AIM Fellows and staff engaged in Research and Knowledge exchange
- members of the School's Advisory Boards
- business stakeholders who are involved in collaborations with the Schools
- stakeholders from relevant national-level organisations such as the Association of Business Schools, the CBI, ESRC, and British Chambers of Commerce
- other stakeholders relevant to the case studies we generate in each school

### ***This topic guide***

The questions in this document should be treated as a guide to the types of questions we wish to explore with respondents, rather than as a definitive set of questions that must be asked of all respondents. Some questions will be more relevant to some respondents than others; likewise it may be appropriate to explore with some respondents topics that are not explicitly included in this document. Interviewers should use their judgement, bearing in mind at all times the focus of the study on exploring the processes through which impact occurs, and seeking examples of good practice as well as issues and problems encountered.

Interviewers are free to record interviews (with the consent of interviewees) and/or take contemporaneous notes. All interviews should be written up as fully and clearly as possible and shared with other members of the project team. Verbatim transcripts are not required.

The following questions have been organised according to the main objectives of the study and follow a fairly logical order. Interviewers should use their experience and discretion in relation to the order that the questions are asked.

**1. Background information**

- i. Respondent name and role
- ii. Activities in relation to business impact
- iii. Other relevant background information

**2. Nature of business impact**

*Objective: Identify the range and nature of business impacts resulting from the work of the business schools*

- i. How do you interpret the notion of ‘business impact?’
- ii. What is the role and significance of business impact in relation to the overall research strategy for social science in your School?
- iii. How is the significance of business impact communicated to others in the School?
- iv. What is the status of business impact in relation to other criteria for assessing research quality or guiding research in the sector?
- v. How do you see business impact taking place through the research being generated in your institution? What is the range of business impacts that research and related activities make in your institution? Can you give some examples?  
*(Prompt if necessary: We know that research impact is rarely a neat, linear process, so how do you know when impact has occurred? How can you make sense of that?)*
- vi. How do you try to ‘track’ impact, given for example the time-lags that can take place?

**3. Processes of business impact**

*Objective: Evaluate the processes through which business impacts may be or have been generated, through research and related activities (including academic/business collaborations, knowledge exchange and business engagement initiatives, networking and dissemination)*

- i. What are the key means by which business impact occurs?

*(Note to interviewer: not all of the questions below will be relevant to all respondents)*

- ii. What role does academic-business collaboration play? Key examples? (*Prompt: jointly-funded research or related activities?*)
- iii. What role is played by knowledge exchange initiatives in your institution?
- iv. To what extent are these interactions part of formal relationships?
- v. To what extent is impact generated through the 'everyday' networking practices of academic researchers?
- vi. Given the importance attached to academic publications, how has the School encouraged researchers to be mindful of business impact?
- vii. What would you say are the key factors that facilitate/promote business impact?
  - a. Factors internal to the School and/or University
  - b. Factors related to businesses
  - c. Other factors e.g. government policy, funding ...
- viii. What obstacles or barriers stand in the way of maximising the impact of research?
  - a. Factors internal to the School and/or University
  - b. Factors related to businesses
  - c. Other factors e.g. government policy, funding
- ix. Would you say that everyone in the School 'buys in' to the significance of impact?
- x. What would you say are the best examples of business engagement? (*Probe for contact details, suitability for case study follow up etc.*)
- xi. What role does impact play in the recruitment of staff? In promotion and reward?
- xii. To what extent is there a shared perspective in your institution on what 'ought to be' the relationship between social science and business?
- xiii. To what extent is there a shared perspective across academia and the business sector? To what extent does this vary across businesses and why?

#### **4. Local, regional and national contexts of business impact**

*Objective: Develop an understanding of the contributions of social science within local, regional and national contexts, and the factors that promote or inhibit impact within these contexts*

- i. Your institution is of national and global significance, can you talk us through how you approach research impact at international; national; local levels? How do you see the interrelationships here?



- ii. What factors are useful in promoting such impact (in each case)?
- iii. What factors inhibit such impact (in each case)?
- iv. How does business impact enhance your reputation as an institution?
- v. What value does/should PhD training add to a business?  
*(Note to interviewer: if respondent has specific responsibility for PhD research, this question should be pursued further – see project objectives re PhD impact)*

#### 5. Determinants of impact

**Objective:** Identify and analyse the determinants of the impacts identified (i.e. why and how impact has been generated)

**Note to interviewer:** these questions may well have been covered in answers to earlier questions. If so, skip to next question or use this section as an opportunity to clarify/elaborate as appropriate

- i. Thinking about one or two of the most notable ('best') examples where your business impact has been generated, what are the key or critical factors that have been in place to secure this?
- ii. Has it been linked to funding sources? *(Probe for specific role of ESRC funding)*
- iii. What mechanisms and practices (by social scientists, by managers or leaders, by business actors) have enabled impact to take place?
- iv. What factors do you think have inhibited impact? *(If appropriate probe for views about communication, academics and business people speaking 'different languages', divergence of objectives, short/long term outlook etc.)*

#### 6. Good practice and lessons learnt

**Objective:** Identify good practice and lessons learned, to support the development of impact generation within the business sector

- i. Thinking in terms both of things that have worked well but also more difficult experiences, what lessons have you learned in your institution about generating impact?
- ii. What would you identify as interesting or effective practice that we can take away and highlight as part of our study, for others to learn from or think about?
- iii. What are the main areas you are trying to improve and what strategies do you have for these?

- iv. Looking ahead, how can the ESRC maximise the value of investment from social science research in relation to business impact?
- v. How can the ESRC maximise the value of investment in social science postgraduate research training, in relation to business impact?

**7. Case study suggestions**

- i. We are seeking to construct business impact case studies in each of our business school visits. We will seek to ensure a spread of examples (at least one per business school) relating to different aspects of social science research and also different types of business organisation by size, sector, ownership, location etc. Can you give us any guidance about where we should focus our attention?
- ii. We are seeking to construct PhD impact case studies will be based primarily on the survey findings, focusing on respondents who identify some form of impact and who are willing to participate in further research. Can you give us any guidance about where we should focus our attention?

**8. Final comments**

- i. Do you have anything further to add regarding the business impact of social science that we have not already covered in this discussion?
- ii. Can you suggest anyone else that we should contact in relation to this study, in addition to the case study / PhD case study examples that you have suggested?
- iii. Many thanks for your assistance with this study. Just to remind you that all interviews are confidential and non-attributable, unless otherwise agreed. We will be submitting a report to ESRC in early 2013 and their usual practice is to publish reports once they have been approved by the Evaluation Committee.

## Appendix II: PhD graduate questionnaire

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### Introduction

The University of Hull has been commissioned by the Economic and Social Research Council (ESRC) to undertake a study of former social science PhD students. We are contacting people who have completed PhD awards in a social science subject. The purpose of the study is to develop a better understanding about what happens to postgraduate students after they have completed their PhD and how the skills and knowledge gained through their PhD have impacted upon their subsequent work.

**As a token of appreciation for participating in this survey the University of Hull will make a charitable donation of £1 for every returned questionnaire to [name of charity].**

Please note that you may receive more than one copy of the questionnaire link since contact details have been collated from different sources. We apologise in advance if this happens. There is no need to return duplicate questionnaires.

Your responses will be kept confidential and your anonymity will be protected. If you have any questions about this study please contact the University of Hull Project Manager, Dr Steve Johnson, on 01482 463448 or at [s.g.johnson@hull.ac.uk](mailto:s.g.johnson@hull.ac.uk)

### About you

1. Name
2. Could you please confirm if you have completed your PhD?
  - a. Yes
  - b. No – routed to an end page thanking them and closing the survey
3. Could you please provide the following details in relation to the PhD you have been awarded:
  - a. Institution
  - b. Subject area
  - c. Broad topic
  - d. Was this full or part time?
  - e. Date qualification was awarded (month and year)
  - f. Source of funding [*Drop down box – ESRC, other Research Council, self-funded, University scholarship, other*]
4. Where are you currently based? (Tick one only)
  - a. United Kingdom
    - i. East of England
    - ii. East Midlands
    - iii. London
    - iv. North East
    - v. North West
    - vi. South East
    - vii. South West
    - viii. Yorkshire and Humberside

- ix. West Midlands
  - x. Scotland
  - xi. Wales
  - xii. Northern Ireland
- b. Other country [*drop down box*]
5. Which of the following best describes your current situation? (Tick one only)
- a. Employed full-time in paid work (30 hours a week or more)
  - b. Employed part-time in paid work (fewer than 30 hours a week)
  - c. Self-employed/freelance
  - d. Undertaking further study/training [route to Q9]
  - e. Unpaid/voluntary work [route to Q9]
  - f. Unemployed/looking for work [route to Q9]
  - g. Other (please provide details) [route to Q9]

**Nature of employment – for those who replied employed or self-employed to Q5**

6. When did you start working in your current job? (Month and year)
7. How would you describe the organisation you are currently working for? (Tick one only)
- a. A university/higher education institution (HEI)
  - b. A private sector business/company
  - c. A public sector/government organisation
  - d. A voluntary sector organisation/charity
  - e. I am self-employed/freelance/running my own business
  - f. Unsure/something else (please provide details)
8. Please can you provide the following details in relation to your current position and role?
- a. Job title
  - b. Type of contract [*drop down box* – permanent, fixed term, other – please provide details]
  - c. Name of employer (if applicable)
  - d. Brief description of what the organisation does
  - e. Please could you provide a description of your role and what kind of activities you undertake

**Previous job history**

9. Please could you provide details of your employment history since completing your PhD? (In reverse chronological order, starting with the job you had before your current position)

Job 1:

- a. Date employment started (month and year)
- b. Date employment ended (month and year)
- c. Job title
- d. Type of organisation [*drop down box*]

- i. A university/higher education institution (HEI)
- ii. A private sector business/company
- iii. A public sector/government organisation
- iv. A voluntary sector organisation/charity
- v. I am self-employed/freelance/running my own business
- vi. Unsure/something else (please provide details)
- e. Brief description of job role and activities undertaken
- f. Name of employer (optional)

Job 2:

- g. Date employment started (month and year)
- h. Date employment ended (month and year)
- i. Job title
- j. Type of organisation [drop down box]
  - i. A university/higher education institution (HEI)
  - ii. A private sector business/company
  - iii. A public sector/government organisation
  - iv. A voluntary sector organisation/charity
  - v. I am self-employed/freelance/running my own business
  - vi. Unsure/something else (please provide details)
- k. Brief description of job role and activities undertaken
- l. Name of employer (optional)

Job 3:

- m. Date employment started (month and year)
- n. Date employment ended (month and year)
- o. Job title
- p. Type of organisation [drop down box]
  - i. A university/higher education institution (HEI)
  - ii. A private sector business/company
  - iii. A public sector/government organisation
  - iv. A voluntary sector organisation/charity
  - v. I am self-employed/freelance/running my own business
  - vi. Unsure/something else (please provide details)
- q. Brief description of job role and activities undertaken
- r. Name of employer (optional)

**Value of PhD – [only for respondents currently employed/self-employed]**

10. To what extent would you say your PhD has been useful in giving you skills/knowledge that have been helpful in developing your career subsequently?  
(Tick one only)
- a. Very useful
  - b. Quite useful
  - c. Neutral
  - d. Not very useful
  - e. Not at all useful

11. Please could you provide examples of projects or activities you have undertaken, in your current or previous job roles, where you feel your PhD qualification is/was relevant to the work you are/were doing? [open response]
12. In what ways do you think that the skills/knowledge you gained through doing your PhD to contribute to/have an impact on the organisation that you currently work for? [open response]
13. Below is a list of a number of skills/areas of knowledge you may have gained through your PhD. Please can you (i) identify which skills/knowledge you feel that you developed through your PhD and (ii) indicate how useful you think each skills/knowledge area has been in your career to date

Skill/knowledge area	Developed through PhD?		How useful in career to date?				
	Yes	No	Very	Quite	Neutral	Not very	Not at all
The broad subject area of your PhD research (e.g. economics, sociology)							
The specific topic of your PhD thesis							
Literature review							
Research methods							
Data collection methods							
Quantitative analysis							
Qualitative analysis							
Project management							
Time management							
Communication							
Report writing							
Further comments							

#### **Further research**

14. We would like to compile some short case study profiles to illustrate the types of careers that PhD graduates have pursued, and how the PhD may have contributed to your career. This would require an hour or so of your time to speak with one of our researchers, either face to face or by telephone depending on your availability.

If you would be happy for one of our research team to contact you to speak further about this please provide your contact details below. Please note that your contact details will not be shared with anyone else without your permission.

- a. Name
- b. Email address
- c. Phone number

Thank you very much for taking part in our survey.

## Appendix III: Case study topic guides

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### **Outline topic guide: PhD graduates**

**Note:** prior to the interviews, researchers should familiarise themselves with the answers that the respondent gave to the PhD graduate survey (where appropriate). This should then be used as the primary basis for discussion with respondents.

Where possible, interviews should be undertaken face-to-face; however telephone or Skype interviews are acceptable if it is not feasible to arrange face-to-face meetings.

Interviews should explore the following:

- 1. The respondent's PhD studies (briefly)**
  - a. Topic area
  - b. Research methods used
  - c. Other relevant issues (see survey response)
  
- 2. The respondent's career path since completing their PhD**
  - a. Initial aspirations (e.g. academic, business or other)
  - b. How respondent ended up in current role
  - c. Perceived role of PhD in getting current and/or past jobs
  - d. Other relevant issues (see survey response)
  
- 3. The respondent's current role and how it relates to their PhD**
  - a. Nature of role
  - b. Nature of organisation (size, sector etc.)
  - c. Does PhD help with job role? If so how?
  - d. Other relevant issues (see survey response)
  
- 4. How the respondent feels that their PhD qualification has impacted on their employer's business (*refer to study objectives*)**
  - a. Range and nature of impacts
  - b. Why and how the impact has been generated
  - c. Impact processes and barriers to impact
  - d. Good practice
  - e. Employer's appreciation of value of PhD qualification
  - f. Any specific examples of impact (which might be explored with employers)
  
- 5. How the respondent feels that PhD studies might be made more relevant to students who wish to go into business**
  
- 6. (if not already discussed) would it be possible to speak to a line manager or other relevant person to discuss the impact of employing social science PhD graduates?**
  
- 7. Any other issues not covered previously in the discussion**

**Outline topic guide: employers**

Ideally, we should aim to speak to at least one representative of the employing organisation, with the agreement and introduction of the respondent. This should be a line manager or someone else who is able to comment on the impact of employing PhD graduates.

- 1. How many social science PhD graduates are employed in the organisation?**
  - a. In what types of roles?
  - b. Is PhD a required qualification for any roles?
  - c. Do you typically recruit from certain universities?
  - d. Are you looking for PhD graduates in any particular subject(s)?
  
- 2. What would you say are the main benefits of employing social science PhD graduates? OPEN QUESTION – prompt if necessary:**
  - a. Subject area specialism
  - b. Research skills
  - c. Project management skills
  - d. Communication skills
  - e. Links with academic researchers
  - f. Other
  
- 3. What would you say are the main drawbacks of employing social science PhD graduates? OPEN QUESTION, no prompts**
  
- 4. In what ways would you say that employing social science PhD graduates impacts on the performance of your organisation? (refer to study objectives)**
  - a. Range and nature of impacts
  - b. Why and how the impact has been generated
  - c. Impact processes and barriers to impact
  - d. Good practice
  - e. Employer's appreciation of value of PhD qualification
  - f. Any specific examples of impact (to be explored where feasible)
  
- 5. How do you think that PhD training could be improved to enable PhD graduates to be more effective in business organisations? OPEN QUESTION**
  
- 6. Any other relevant issues not covered in the interview so far**



**Outline topic guide – business impact case studies**

**Note:** prior to the interviews, researchers should seek to collect as much background information as possible on the project/programme under investigation. This might include project proposals, reports, publications (e.g. journal articles), publicity material, presentations etc. This material may then be used as a basis for discussion with respondents.

Respondents should include, as appropriate to the project:

- The academic lead for the project/programme
- Other relevant members of the academic team (may be interviewed as a group)
- The primary business representative(s)
- Any other business representatives closely engaged with the project

Where possible, interviews should be undertaken face-to-face; however telephone interviews are acceptable if it is not feasible to arrange face-to-face meetings.

Interviews should explore the questions set out below, with reference to the main study objectives:

- Identify the range and nature of business impacts resulting from the work of the Business/Management Schools
- Evaluate the processes through which business impacts may be or have been generated, through research and related activities (including academic/business collaborations, knowledge exchange and business engagement initiatives, networking and dissemination)
- Develop an understanding of the contributions of social science within local, regional and national contexts, and the factors that promote or inhibit impact within these contexts
- Identify and analyse the determinants of the impacts identified (i.e. why and how impact has been generated)
- Identify good practice and lessons learned, to support the development of impact generation within the business sector
- Inform the development of methodology for future impact evaluation studies in this area

- 1. The nature of the project/activity under discussion**
  - a. Main aims and objectives
  - b. Funding sources
  - c. Methods used (in outline)
  - d. Timescale
  - e. Key findings (in outline)
  
- 2. How contact between the academics and business partners arose**
  - a. Timing: at the start, during or end of the project
  - b. Who initiated the contact?
  - c. Who was involved from each side
  - d. How the relationship developed over time
  
- 3. The impact of the social sciences on the business partner(s)**
  - a. Describe as clearly as possible the nature of the impact
  - b. Is it possible to measure the impact e.g. cost savings, profitability?
  - c. Explain as clearly as possible how the impact arose
  - d. To what extent and in what ways were the academic partners involved?
  
- 4. What were the main factors that facilitated impact?**
  
- 5. What issues were encountered that made impact more problematic?**
  
- 6. What were the main lessons learned through the project/programme about achieving business impact through social science?**
  
- 7. Any other issues not covered previously in the discussion**

## **Appendix IV: Individuals and organisations consulted<sup>12</sup>**

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### **Cardiff University**

Professor Rick Delbridge – Chair in Organizational Analysis and Senior Fellow of the ESRC/EPSRC  
Professor Mohamed Naim – Associate Dean for Research  
Dr Joe O’Mahoney – Lecturer in Organisational Studies  
Dr Claire Biggs and Obi Egbunike – Project Officers, ASTUTE project  
Professor Peter Turnbull – Professor of Human Resource Management Labour Relations  
Professor Ken Peattie – Professor of Marketing and Strategy, Director of BRASS  
Dr Claire Harvey and Sian Conti – Business Development Officers  
Dr Andrew Crawley – Research Fellow, Cardiff Business Partnership  
Dr Paul Nieuwenhuis – Lecturer in Logistics and Operations Management, Do-director of CAIR

### **Lancaster University**

Professor Kevin Glazebrook – Distinguished Professor, Department of Management Science  
Professor David Pettifer – Centre for Strategic Marketing and Advisory Board Member  
Professor Ian Walker – Head of Economics  
Professor Stefanos Mouzas – Director of Research, Department of Marketing.  
Dr Peter Lenney – Director of MSc in Advanced Marketing Management, Department of Marketing  
Professor Mark Easterby-Smith – Head of Department of Management, Learning and Leadership  
Dr Ellie Hamilton – Associate Dean for Enterprise, Engagement and Impact  
Professor Lucas Introna – Director of Research  
Mike Chiasson, Katy Mason and Martin Spring – AIM Fellows  
Professor Cary Cooper – Chair of the Academy of Social Sciences and Distinguished Professor of Organizational Psychology and Health  
Professor Mary Rose – Institute of Entrepreneurship and Enterprise Development, and LEAD  
Dr Caroline Gatrell – PhD Director for LUMS  
Ms Sarah Paterson – PhD Administrator  
Professor Stephen Taylor – outgoing PhD Director  
Dr Ian Gordon – IEED Entrepreneur in Residence  
Magnus George – Head of Strategic Partnerships & Policy  
Dr Ed McKeever and Dr Pavel Bogolyubov – MDM Fellows  
Professor Mike West – Professor of Organizational Psychology  
Ian Brinkley – Chief Executive, The Work Foundation

### **University of Warwick**

Professor Stephen Brammer – Professor of Strategy, Associate Dean for Research at WBS  
Professor Jacky Swan - Professor of Organizational Behaviour, Co-director of IKON  
Professor Davide Nicolini – Professor of Organization Studies, Co-director of IKON  
Dr Bridgette Sullivan-Taylor – Assistant Professor of Strategy and Organisation

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<sup>12</sup> Note that some organisations and/or individuals are not named in order to preserve their anonymity.

Dr Layla Branicki – Research Fellow  
Professor Graeme Currie – Professor of Public Management, Associate Dean  
Dr Katy Wilkinson – Research Impact Officer (Social Sciences)  
Mark Hall – Professorial Fellow  
Dr Melanie Simms – Associate Professor of Industrial Relations  
Dr Guglielmo Meardi – Professor of Industrial Relations, Director of the Industrial Relations Research Unit  
Professor Nick Chater – Professor of Behavioural Science  
Edward Gardiner – Behavioural Design Lead at WBS and the Design Council  
Dr Mark Johnson – Associate Professor of Operations Management

**Other academic respondents**

Professor Richard Thorpe, Leeds University Business School – Chair of the Association of Business Schools Innovation Task Force

**Business respondents**

*NB most business respondents preferred to remain anonymous*

Axon Automotive (business impact case study)  
Gordon Murray Design (business impact case study)  
Kwik Screen (business impact case study)

Brian Gregory – Entrepreneur in Residence, LUMS  
Sue Anderson – Entrepreneur in Residence, LUMS  
Joe Hall – Entrepreneur in Residence, LUMS

Three further SME owner-managers engaged in collaborative activities with participating schools

12 advisory board members of the participating schools, all senior managers or directors of international or national businesses, or significant local organisations

Two employers of case study PhD graduates



[www.hull.ac.uk/hubs](http://www.hull.ac.uk/hubs)