

Institution: University of Warwick
Unit of Assessment: Business and Management Studies
a. Overview

Founded in 1967, Warwick Business School (WBS) is one of the largest and longest established communities of business and management researchers in Europe. Details of the School's mission can be found at: <http://www.wbs.ac.uk/about/difference/mission/>. The School is a thriving, collaborative and interdisciplinary community covering a breadth of management and business disciplines. The School's position as a leading UK and European centre of international excellence in business and management research is reflected in consistently high levels of performance in previous research evaluations. Our strategy since 2008 has been to endeavour to strengthen the School's research performance further, through a range of initiatives including the appointment of leading scholars, recruitment of early career researchers with strong research potential, increased investment in research infrastructure, and increased research income. The School has a breadth and depth of research expertise that is amongst the strongest across Europe, with internationally leading research in all areas of business and management.

WBS faculty are organised into eleven subject groups: Accounting, Behavioural Science, Entrepreneurship and Innovation, Economic Modelling and Forecasting, Finance, Information Systems and Management, Marketing, Operational Research and Management Sciences, Operations Management, Organisation and Human Resource Management, and Strategy and International Business (see [wbs.ac.uk/about/people](http://www.wbs.ac.uk/about/people)). (A twelfth subject group, WBS Create, provides innovative teaching solutions, drawing on drama, theatre and design, to develop and enhance soft skills. Staff of WBS Create are largely on teaching-only contracts, but the Head of WBS Create, Professor Jonothan Neelands, is entered under another UoA.) Within each group, the overwhelming majority of staff are heavily research active, ensuring that there is a strong basis for discipline-specific collaboration and mentoring, and that the School is well equipped to respond to a broad range of external funding opportunities and to meet the needs of a full range of user groups encompassing state, civil society and business. At the same time, to preclude disciplinary-specific silos, to generate synergies from interdisciplinary research and cross-group collaboration, and to promote the diffusion of expertise, the School has taken several steps to increase inter-group collaboration, such as making a number of cross-group appointments, introducing joint seminar series, and developing cross-group research centres.

The WBS interdisciplinary research centres and research networks encourage synergies throughout the School and beyond, and comprise the Innovation, Knowledge and Organisation Network (IKON), bringing together scholars in information systems and organisation (www2.warwick.ac.uk/fac/soc/wbs/research/ikon); the Industrial Relations Research Unit (IRRU), involving scholars in employment relations and human resource management (www2.warwick.ac.uk/fac/soc/wbs/research/irru); the Enterprise Research Centre (ERC), co-led by Warwick and Aston in collaboration with other UK business schools (enterpriseresearch.ac.uk); and the Institute for Employment Research (IER), one of Europe's leading centres for research in the labour market field (<http://www2.warwick.ac.uk/fac/soc/ier>). These centres do not function as rigid intellectual silos but rather as open and inclusive networks. In addition to the research centres, the School has a number of research networks including: the Applied and Organisational Psychology Research Network (<http://www.wbs.ac.uk/research/specialisms/research-centres/applied-and-organisational-psychology-research-network/>) concerned with how individuals, leaders and teams, think, feel, and behave at work; the Global Energy Research Network (<http://www.wbs.ac.uk/research/specialisms/research-centres/ger/>), which is part of the University's current Global Research Priorities (<http://www2.warwick.ac.uk/research/priorities/energy/>); and the Organising Healthcare Research Network (OHRN), bringing together scholars in enterprise and organisations, building on the School's established expertise and relations in healthcare organisation and management ([wbs.ac.uk/research/specialisms/research-centres/organising-healthcare-research-network](http://www.wbs.ac.uk/research/specialisms/research-centres/organising-healthcare-research-network/)).

Staff at WBS comprise a wide diversity of talent combined with a strong consistency in quality of output. However, the School has developed a particularly strong reputation in the areas of

Entrepreneurship and Innovation, Information Systems Management, Employment Relations, Healthcare and Public Management, and Behavioural Science. The first three of these represent long standing areas of expertise within WBS, while there has been a deliberate refocusing of our expertise in Public Management towards Healthcare. In contrast, Behavioural Science has been developed as a new research area within WBS during the present REF assessment period; this was a strategic decision in response to the growing interest in the Behavioural Science area by user groups (from the highest levels of government to the community at large) and is another one of the University's current Global Research Priority areas (<http://www2.warwick.ac.uk/research/priorities/behaviouralscience/>).

b. Research strategy

WBS research strategy is to resource, develop and support a broad base of world-class research as a basis for both advancing knowledge and enriching policy and practice. We have the clear expectation that staff will publish their work on a regular basis in internationally leading peer-reviewed journals and research monographs of international standing. We also recognise that there is a place for the publication of applied studies in outlets targeted specifically at user communities, which may more directly enrich policy and practice.

There is excellent support for disseminating research findings into the public domain via the School's media office, with strong ties with key user groups (as detailed below) helping to secure impact. We do not impose rigid requirements on staff to secure specific types of impact, but we recognise, celebrate and reward impact on practice, inter alia, in terms of promotion and hiring decisions and in human resource planning decisions. Indeed, we have established a new cadre of Professors of Practice (senior, very successful business and industry practitioners) in the School, to interact with our academics at a highly applied level, and to help facilitate research impact (<http://www.wbs.ac.uk/research/profs-of-practice>). We have also sought to improve the research environment by recruiting a number of part-time, 'Distinguished Professors of Research Environment, whose appointments are shared with leading overseas universities and who are recognised leaders in their field, who interact and collaborate with our full-time faculty (see <http://www.wbs.ac.uk/research/profs-of-environment>).

Reflecting its overarching research strategy, the School has been successful in securing funding from prestigious sources (e.g. the EU, ESRC, EPSRC, various charitable foundations) as well as enjoying a strong track record in securing commissioned research funding from government departments, private companies and other external stakeholders (see p. 4 for more details).

We recognise that different types of research have different resource requirements. Consequently, we do not impose rigid targets on staff for generating research income. At the same time, we recognise and reward achievement in this area, both in informing promotion decisions and in allocating teaching relief for those who have secured external funding.

The appointment in 2010 of a new Dean (see wbs.ac.uk/about/people/the-dean) who has extensive, high-level experience in industry and in policy-making institutions, as well as a distinguished academic record, renewed our emphasis on securing impact through leveraging world class research to advance and shape the discipline of business and management studies, and in contributing to policy and practice in the user community.

i. Strategic objectives set in 2008 and achievements during the assessment period

At the time of the last research assessment exercise, our objectives for the subsequent five years were to:

- Enhance our ability to publish in the top journals in Business and Management Studies;
- Generate research that is highly cited by other scholars;
- Attract and retain key research staff, including both existing authorities and rising stars;
- Produce innovative proposals to external funding bodies that increase research income;
- Extend our ability to influence the policy agenda of business, government, professional bodies and social partners;

Environment template (REF5)

- Improve our capacity to influence the transfer of knowledge and technology to business and industry – an arena in which the Centre for Small and Medium Sized Enterprises (CSME), now encompassed within the Entrepreneurship and Innovation Group, was seen as playing a potentially key role.

To support the achievement of these objectives, over the current assessment period WBS has increased substantially the levels of investment in its administrative infrastructure dedicated to research through the establishment and development of a specialised School Research Office with 2.8 FTE staff (in addition to research support provided by the Faculty of Social Science and the University's Research Support Services), which provides advice and support to faculty in relation to research costing and funding, training and development, and the coordination and hosting of research-related events.

Human infrastructural developments include institutionalised relationships with external communities of practice. The WBS Advisory Board (which includes a number of CEOs and chairs of public or private organisations – see <http://www.wbs.ac.uk/about/people/the-board/>) and the boards of advisors of WBS research centres and projects meet frequently to review achievements and advise on challenges in research and research strategy, as well as on School strategy more generally. Executive education programmes and alumni engagement activities help to form key links essential for research access and dissemination activities with corporate networks. Some of the University's professional networks for alumni are led and supported by WBS. Our relationship with the West Midlands Economic Forum brings leaders from the local business community into the school for a quarterly breakfast seminar and, since 2011, WBS has hosted quarterly Bank of England breakfast briefings at which faculty and practitioners gather to exchange information. Again, administrative support is provided through the School's Research Office, overseen by the Associate Dean for Research. The Research Office links with our central University Research Support Services in providing support for funding applications.

Annual research away days are organised within and across the various subject groups. These events include academic staff, research officers and research students and are designed to improve communication and foster greater research collaboration, including interdisciplinary work.

The quality, volume, and breadth of the School's research achievements in relation to these objectives during the assessment period is reflected in the following evidence:

Enhanced capability to publish in top journals.

Within the review period staff have published in world elite journals including the *Academy of Management Journal* (**Foss, Levina, Mantere, Tsoukas**), *Academy of Management Review* (**Foss, Heracleous, Mantere, Mol, Tsoukas**), *American Economic Review* (**Loomes, Isoni**), *Annual Review of Psychology* (**Hodgkinson**), *Econometrica* (**Karni, Safra**), *Journal of Accounting Research* (**Taffler**), *Journal of Finance* (**Bartram, Gamba, Klein, Kumar, Thanassoulis**), *Journal of Operations Management* (**Voss**), *Management Science* (**Denrell, Gamba, Henderson, Kozhan, Thanassoulis**), *MIS Quarterly* (**Constantinides, Henfridsson, Heracleous, Levina, Newell, Oh, Yoo, Zachariadis**), *Operations Research* (**Alpern, Doan, Henderson, Podinovski**), *Organization Science* (**Klingebiel, Nicolini, Oborn, Stadler, Swan, Tsoukas, Yoo**), *Psychological Review* (**Chater, Denrell, Loomes, Read**), *Psychological Science* (**Chater**), *Review of Financial Studies* (**Jin, Klein, Kozhan**) and *Strategic Management Journal* (**Denrell, Foss, Hodgkinson, Klingebiel, Mol, Paroutis, Uotila**), as well as in outstanding multidisciplinary and interdisciplinary journals such as the *Proceedings of the National Academy of Sciences* (**Chater, Denrell, Liu, Preis**) and *Science* (**Denrell**), and leading applied outlets such as *Harvard Business Review* (**Heracleous**) and *California Management Review* (**Paroutis**).

Attracting and retaining high quality staff.

We have attracted over 127 outstanding leading researchers leaders to join the school since 2008, with 59 appointments at full Professor level, 15 appointments at Associate Professor level and 53

at Assistant Professor level. We have also successfully retained a number of key researchers hired before 2008 including **Heracleous** and **Tsoukas** and promoted rising stars such as **Gamba**, **Llewellyn**, **Meardi**, **Mol**, **Nicolini**, **Kiefer**, **McGivern** and **Podinovski** to full Professorships in this period. Furthermore, consistent with our aim to develop new talent and contribute to capacity building in the sector, we have expanded total research student numbers from 81 in 2008 to over 180 in 2013, and have awarded 151 doctorates over the assessment period, and we are returning 33 early career researchers in this submission. We appreciate that, as with most other leading business schools, retaining staff in the run up to the REF census date has been challenging. We have, however, developed a strategy for staff retention which has proved successful in retaining several highly regarded scholars who have received attractive offers from other schools. Over the current reporting period we have enhanced our capabilities to respond rapidly in making counter offers, including securing University support.

Produce innovative proposals and generate research income.

In a challenging external funding environment, we have won a number of prestigious awards, including: the £3 million ESRC-funded Enterprise Research Centre led by Warwick and Aston and directed by **Roper**, the EPSRC funded Big Data project (£696k) involving **Preis**, **Roper's** NESTA grant to study the measurement of innovation in the UK economy (£178k), several NIHR funded research grants in knowledge mobilisation/transfer with **Currie**, **Swan**, **Lockett** and **Nicolini** as PIs (total awards c. £1.3 million), and **Podinovski's** EU grant to integrate econometric and mathematical programming models into an amendable policy and market analysis tool (£102k). Additionally, we were successful in winning a number of prestigious externally funded fellowships including awards to **Dean** (British Academy Mid-Career Fellowship) and **Loomes** (ESRC Professorial Fellowship) and several AIM fellowships. Examples of funding from private or charitable organisations include **Gulpinar's** £236k grant from BAE Systems to study real-time/dynamic multi-agent decision-making and **Chater's** £90k award from Macmillan Cancer Support to study behaviour change in cancer environments. Recent successes in Behavioural Science suggest sustained strong performance in this area, with **Chater's** ERC Advanced Investigator Grant (Cognitive and Social Foundations of Rationality) at £1.5 million, and **Loomes**, **Chater** and **Read's** £688k ESRC Large Grant (the Network for Integrated Behavioural Science) being notable examples. Most recently the School has won, as part of a consortium, an award of £10 million for a regional NIHR Collaboration for Leadership in Applied Health Research and Care (CLAHRC).

Extend influence on policy and practice.

As highlighted in our impact case studies, research at WBS has had far-reaching changes on legislation (e.g. Influencing Occupational Pensions Policy – the Pension Protection Fund), policy (e.g. Enhancing Competition and Innovation in the UK Water Industry) and organizational practice (e.g. SimLean: Using Rapid Simulation Techniques to Facilitate Improvement in Healthcare).

The influence of our research, both academically and in terms of wider impact on policy, practice, and within our own profession, has been recognised extensively over the assessment period. Academic prizes won in the period include best paper awards such as that awarded to **Mol** (*Academy of Management Review*, 2008), while an earlier version of **Hodgkinson's** 2011 *Strategic Management Journal* article (co-authored with Healey) won the Academy of Management's (Business Policy and Strategy Division) Sumantra Ghoshal Research and Practice Award (2009). **Wensley's** contribution to business and management research was recognised through his BAM Richard Whipp Lifetime Achievement Award (2012). Two members of our Behavioural Science Group, **Loomes** and **Chater**, were made fellows of the British Academy, and **Glaister**, **Green**, **Grint**, **Hodgkinson**, **Taylor** and **Wensley** were made Academicians of the Academy of Social Sciences. In addition, the School has two Thomson-Reuters ISI highly cited scholars (**Loomes** and **Taylor**). External recognition of our research is also reflected in the prominence of WBS faculty with key professional bodies, committees and associations during the assessment period including: the Academy of Management (**Hodgkinson**), British Academy of Management (**Glaister**), AMBA (**Wood**), AACSB (**Taylor** and **Wood**), International Organization

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for Standardization (ISO) (**Shaw**) and the UK Cabinet Office Behavioural Insights Team (**Chater**).

Our influence on policy and practice is discussed more fully in REF3a.

Improve our capacity to influence the transfer of knowledge and technology to business and industry

Detailed evidence of impact on legislation, government policy, firm level and third sector policy and practice is provided in our impact case studies as well as in REF3a.

ii. Emerging strategic initiatives and investments

Within the assessment period the School has created two new subject groups, Behavioural Science (see <http://www.wbs.ac.uk/research/specialisms/teaching-groups/bs>) and Economic Modelling and Forecasting (see <http://wbs.ac.uk/research/specialisms/teaching-groups/emf>), both of which have significantly extended our capability to undertake first class interdisciplinary research in the social sciences, and to engage significantly with policymakers and practitioners. In each case, the aim is to exploit more intensively our position as a leading university-based business school by establishing and strengthening ties with other Warwick departments and, where appropriate, external centres of excellence.

- In Behavioural Science, we have invested heavily, attracting a strong interdisciplinary group of scholars, with an overall critical mass of 11.6 FTEs. The group is renowned internationally for its work in behavioural economics (**Loomes**), cognitive psychology (**Chater**, **Read**), management science (**Preis**), and the emerging subfield of behavioural strategy (**Denrell**, **Foss**, **Hodgkinson**, **Eubanks**, **Liu**). Supporting the group's work, we have built a state-of-the-art experimental laboratory facility and invested in specialised IT and a team of dedicated administrators (including a full-time laboratory manager and technician).
- In Economic Modelling and Forecasting, we have attracted a leading interdisciplinary team (7.0 FTEs) with internationally recognised expertise in economic modelling (**Garratt**, **Mitchell**, **Vahey**), innovation (**Battisti** and **Giulietti**), energy policy and economic policy (**Sentance**), and strategy and sustainability (**Dahlmann**).

Beyond these new initiatives, existing priorities in Healthcare Management, in Entrepreneurship and in Employment Relations have been strengthened significantly through investment in additional new staff:

- Building on a long WBS tradition of research excellence in Public Management, the School has pursued a strategy of enhancing its capability in Healthcare Management in collaboration with Warwick Medical School. The appointments of Professors **Currie**, **Fotaki**, **McDonald**, **McGivern** and **Oborn**, and Assistant Professors **Burgess**, **El-Enany**, **Korica** and **Massaro** further strengthened an already strong group of health management and organisation researchers including **Nicolini** and **Swan**. Professor Rachel **Finn** is scheduled to join WBS in December 2013, further supplementing senior expertise in this area.
- In Entrepreneurship and Innovation, the appointments of **Lockett**, **Roper**, **Ucbasaran** and **Van Doorn** added to existing expertise (for example, **Fraser** and **Mole**). These investments culminated in a successful bid to host the Enterprise Research Centre (ERC), funded by the ESRC and other sources.
- In Employment Relations, the appointment of new Professors (**Hayton**, **Hoque**), and Assistant and Associate Professors (**Firfiray**, **Reinecke**, **Strauss**) provided an influx of new insights and capabilities, most notably in the analysis of the Workplace Employment Relations Study and other large quantitative datasets. The area has also attracted a significant amount of external funding, most notably the European Union funded GUSTO

project (£225K), led by **Crouch, Marginson and Meardi**.

iii. Future strategic developments

Our strategic goals for the next period are as follows:

- *To strengthen further the School's strategic capability to produce internationally excellent social science research that both deepens our understanding within the sub-disciplines of business and management and cuts across disciplinary boundaries where necessary.*

Success in this arena will be measured by further increases in the proportion of research outputs published in leading scholarly outlets, including leading interdisciplinary journals, higher rates of citation of WBS research as one measure of the reach and influence of our work, growth in our PhD programme and an improvement in our ability to place doctoral graduates in leading peer organisations, and by an increase in the amount of external research funding secured by WBS faculty.

- *To enhance our capacity to transfer the key findings and implications of that research into the policy and practice needs of the business and management community.*

Success in this domain will be reflected in our being the partner of choice for rigorous applied research among policy and practitioner groups, increases in the proportion of WBS faculty holding external positions of influence on boards, committees, and governing bodies of user-led organisations, increases in the number of WBS faculty authored applied articles published in trade and industry publications, and greater media attention centred on WBS research.

- *To increase the internationality of research within WBS both by facilitating greater international collaboration in the production of cutting-edge knowledge, and by building greater capacity for the influence of ideas generated by WBS and partners to be felt globally.*

Success in this area will be reflected in the growth in international media and practitioner coverage of WBS research, a rise in the proportion of research income oriented to international collaborative projects, more international co-authorships involving WBS faculty, the further globalisation of faculty recruitment, and an increase in the number of prestigious visiting positions held by WBS faculty internationally.

To support these overarching objectives, we have identified three specific priority areas for development:

- To capitalise further on our position as a leading business school, embedded within a strong institution more widely, in the next REF period we will continue to invest in strengthening mutually productive interdisciplinary relationships with relevant cognate departments – chiefly Warwick Medical School, Warwick Manufacturing Group, the Mathematics Institute, the School of Engineering, and the Departments of Politics and International Studies, Economics, Psychology and Statistics. We will also pursue collaborative PhD studentships and wherever possible share infrastructure (such as existing agreements with the Department of Economics regarding the sharing of facilities and PhD research training).
- To leverage research power in key areas as a means of enhancing credibility with key user groups, facilitated through increased investment in external communication capabilities, the deepening of existing external partnerships (e.g. the present partnerships with the police in behavioural operations; the ERC consortium) and the development of new ones based on the networks and capabilities of new staff.
- To bring together all WBS academic staff in single premises, through a new £25 million extension to the main building (see section d. ii 'Infrastructure').

c. People, including:

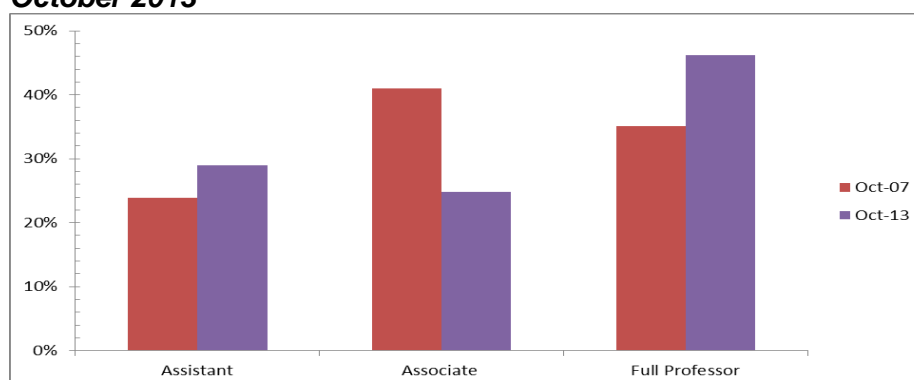
i. Staffing strategy and staff development

Recruiting, retaining, and developing high quality staff is central to the School's research strategy and culture. The period since 2008 has been one of significant transition and development in relation to the School's staffing. Like most business schools, WBS faces the challenge of succession planning, especially given the age profile of academics in the sector. There is also intensified competition for established scholars between business schools, with all leading business schools in the UK having to contend with increased staff turnover. Within this environment, WBS has demonstrated an extremely strong capacity to recruit and retain top scholars worldwide.

There were a number of retirements over the period since 2008, contributing to a shift in the age profile of full Professors in WBS: a 32% reduction in the number of Professors aged over 55, and a 12% increase in the number of Professors at the lower end of the age spectrum (below 45).

While we have sought to replace senior talent that has left the School with world class senior and mid-career researchers, we have also sought to build capacity for the future by hiring and developing an increased number of junior researchers. Figure 1 shows the distribution of Assistant Professors, Associate Professors and full Professors across the School at the RAE2008 and REF2014 census dates:

Figure 1: Distribution of WBS Assistant, Associate and full Professors, October 2007 and October 2013



As Figure 1 shows, the School has rebalanced the profile towards Assistant and full Professors, reducing the proportion of mid-career scholars. This changing composition reflects the extent to which the School has a strong coterie of talented younger scholars, and is rewarding exceptional research achievement with rapid career progression to full Professor rank. The relatively large number of full Professors means that the School also enjoys experienced and proven capability across all the main functional areas of management.

By way of background to the development of our HR strategy, see, for example, the ESRC (2006) commissioned report, 'Demographic Review of the UK Social Sciences'

http://109.108.130.200.srvlist.ukfast.net/images/Demographic_Review_tcm8-13533.pdf .

Commenting on the growing shortfall of high calibre researchers in the UK management and business studies field, the report's authors observed: "Respondents in [management and business studies] saw the trend towards international recruitment as potentially problematic (77% saw it as important, or very important to recruit UK-domiciled staff). However, many of the respondents also recognised that they were operating in a global market, and that internationalisation was potentially a good thing." The programme of staff renewal at WBS reflects the fact that, in line with the University's wider strategy, we are positioning the School as a major global player. Hence, within the current REF period we have replenished our complement of research active staff with a mixed portfolio of established and early career researchers, drawn from the ranks of UK and overseas, including a number of highly trained North American faculty.

We have taken a number of steps during the assessment period to align more closely our staffing strategy with our research strategy, including the following:

- We have developed a set of policies that set out clear and explicit requirements for probation and promotion. We evaluate publication output against a range of independently compiled journal quality lists, via internal and external peer review, and as reflected by citations databases. We reward successful research grant holders by releasing them from teaching or administrative duties on a sliding scale that reflects the scale and nature of the income generated.
- The School has implemented a new workload allocation model, the Academic Balance Model, which explicitly recognises research and research-related activities. Research-active staff devote a minimum of 40% of their time to research activity, with the possibility of securing additional time if they take on research projects or are involved in other research related activities such as membership of key professional committees and editorships.
- In order to safeguard research time, we are phasing out the practice of paying faculty additional income for extra teaching on part-time Masters programmes; instead, staff receive due credit under the Academic Balance Model, reducing commensurately their teaching loads elsewhere.
- Following negotiations with the University, we have introduced market-related salary supplements to support the attraction and retention of staff in key shortage areas.

In our recruitment drive, we have paid particular attention to striking a balance between recruiting early career academics with longer-term potential and making higher level academic appointments to provide the required research leadership. To this end, over 50 high-calibre early career appointments have been made, recruited from a variety of backgrounds including from leading PhD programmes (e.g. Cambridge University, Rotterdam School of Management, Princeton University, London School of Economics and Political Science, Bocconi University, University of Hong Kong, Hong Kong University of Science and Technology, University of Oklahoma, Oxford University, University of British Columbia and the Massachusetts Institute of Technology). In addition, 38 appointments and promotions have been made at Chair level: **Spence** (Accounting); **Chater, Denrell, Loomes, Read and Safra** (Behavioural Science); **Hodgkinson** (Strategy and International Business/ Behavioural Science); **Garratt, Mitchell and Vahey** (Economic Modelling and Forecasting); **Currie, Hayton, Lockett, Oborn, McDonald, Roper and Ucbasaran** (Entrepreneurship and Innovation); **Bartram, Gamba** (promotion), **Moore, Taffler and Thanassoulis** (Finance); **Henfridsson** (Information Systems and Management); **Alpern, Branke, Podinovski** (promotion) and **Shaw** (Operational Research and Management Sciences); **Fotaki, Grint, Hoque, Kiefer** (promotion), **Llewellyn** (promotion), **McGivern** (promotion) (Organisation and Human Resource Management); **Battisti, Glaister, Mellahi, Mol** (promotion) and **Wood** (Strategy and International Business); as well as a number of part-time Distinguished Professors of Research Environment: **Erev, Karni, Segal and Winkielman** (Winkielman is returned under another UoA) (Behavioural Science); **Allen, Foss, Mantere and Reay** (Entrepreneurship and Innovation); **Klein and Kumar** (Finance); and **Levina, Newell and Yoo** (Information Systems and Management).

Supporting equality and diversity

The School adopts and strictly enforces University policies in relation to equality and diversity. The University's statement on diversity can be found at:

http://www2.warwick.ac.uk/services/equalops/equal_opportunities_statement/

A Single Equality Scheme (see www2.warwick.ac.uk/services/equalops/singleequalityscheme) has been in place since 2008 (and has since been revised) as part of the University's commitment to embedding equality and diversity into the University's culture and actions.

The Equality and Diversity Committee (see www2.warwick.ac.uk/services/equalops/committee) formulates policy and reports progress on the Single Equality Scheme and associated Equality Objectives to the Senate and Council. The Equality and Diversity Committee liaises with the Equality and Diversity Network, a more informal forum for all members of staff and Students' Union

representatives to discuss issues relating to equal opportunities and diversity. Of the School's current full-time faculty, 57% are non-UK nationals and 17% of the faculty identify themselves as being from an ethnic minority. Female staff currently make up 35% of the School's faculty. The School is currently participating in the ESRC pilot scheme for extending the Athena SWAN Charter (<http://www.athenaswan.org.uk/content/athena-swan>) to the social sciences.

Promoting research ethics

The University of Warwick's Research Code of Practice:

http://www2.warwick.ac.uk/services/rss/researchgovernance_ethics/research_code_of_practice/

recognises the necessity for professionalism and integrity in research. Like all other research at Warwick in the social sciences, all research undertaken in the Business School is subjected to the oversight of the University of Warwick's Humanities and Social Sciences Research Committee (HSSREC). The overriding principle is to ensure that participants are well-informed about the purpose and nature of the research, are aware of any potential risk of being involved, understand the benefits of participating, and feel free to withdraw from being involved without fear of consequence.

Staff development – Early Career Researchers and Continuous Professional Development

Staff are supported in the development of their research skills in a number of ways:

- A mentoring scheme covers all staff and is complemented by a development-focused appraisal system to ensure that all research-active staff develop and then maintain an independent research reputation;
- All faculty are expected to devise a formal professional development plan with their Head of Group or other appraiser as an integral part of their annual performance review and to report on progress throughout the year, culminating in their next formal annual review meeting in the following year;
- Evidence of high-quality research (manifested in publications, research income generation and indicators of engagement with user-communities) is required to satisfy the criteria for probation and promotion. With a policy of encouraging publication in leading journals, it can take several years before early career faculty achieve output at the required level, and the School provides support and guidance throughout the process. An important role of the mentor, from a research perspective, is to guide colleagues through the process of journal selection, manuscript submission, review, revision and acceptance;
- In keeping with the principles of the research concordat emanating from the Roberts Review, to which the University of Warwick has signed up, we have implemented a clear career structure for contract researchers – Research Associate, Research Fellow, Senior Research Fellow – subject to the same scrutiny as the promotion processes pertaining to our probationary and established faculty members;
- We hold regular Professional Development Seminars. They are open to all academic staff and offer sessions on a wide range of relevant topics. The sessions are led by the School's most experienced faculty and external presenters renowned for their teaching and research capabilities. Prominent external speakers within the reporting period include William H. Starbuck (University of Oregon), Professor Roy Suddaby (Editor, Academy of Management Review and Eldon Foote Chair in Law and Society, Professor Eric Geddes (Professor of Business and Director of the Canadian Centre for Corporate Social Responsibility at the University of Alberta);
- We have also redesigned teaching programmes to allow faculty to compress larger parts of their teaching into a few months, creating significant blocks of uninterrupted research time. We recognise the investment required to establish a research career of international significance. Consequently, we have a very generous workload reduction scheme for early career researchers, providing a 1/3 reduction on the normal teaching and administrative workload for research active staff for the full five years of their probationary period;
- In addition to managing “normal” workloads to provide space for research, all academic staff

members are entitled to apply for study leave on agreement of a satisfactory plan of research activities, the outcomes of which are reviewed on completion of the period of leave. In the assessment period, 185 terms of study leave were granted to 86 different faculty members (details of the University's study leave scheme can be found at:

<http://www2.warwick.ac.uk/services/gov/calendar/section2/regulations/leave/>);

- The School has established a network for early career researchers. Meetings are held at least once a month and provide an opportunity for early career researchers to network and present papers or work in progress.

ii. Research students

A high quality doctoral programme is an essential component of the School's research strategy, providing a pool of creative and talented researchers that make a vital contribution to a dynamic and sustainable research culture. WBS has a large, vibrant, high quality postgraduate research programme.

Entry to the WBS PhD is highly competitive and our selection criteria now require strong performance in a relevant MSc from a reputable peer organisation. During the REF period, we have received over 9 applicants for every enrolment. As at the beginning of November 2013, there are 184 students registered on the Doctoral Programme and 151 doctorates have been awarded at the School during the REF period.

Since 2008 the Doctoral Programme has seen a number of significant investments and improvements:

- **Funding:** the School's PhD scholarship budget has increased from around £250k per annum in 2008 to just below £800k in 2013, and is projected to rise to £1.24 million by 2017. The duration of each award has been increased from 3 to 4 years to enable students to focus on completion and job market preparation without the burden of part-time employment to finance a fourth year of research.
- **The conference allowance** has been restructured to enable students to carry over unspent funds to their third and fourth years so that they are able to attend courses and conferences overseas. Students presenting papers at prestigious conferences are also able to bid for additional funding if the costs of attendance exceed their standard allowance.
- **Workspace and facilities:** the School has recently carried out an extensive refurbishment of an existing building, costing in excess of £1 million, in order to create a dedicated research and social space for its first and second year doctoral students. As well as office space, the suite contains a lounge and kitchen as well as a meeting room with one of the best video-conferencing facilities on campus. The Doctoral Programme Office is also based there in order to provide easy access for the students to the support team. Students in later years tend to be located in offices close to their supervisors and other faculty. The space allocation strategy is part of the School's approach to promoting a sense of community amongst its large and diverse body of PhD researchers as well as ensuring that they are fully integrated within the research culture of the School. In the early years, they are encouraged to work with other PhD students as part of their more broad-based training and development. Later, when the focus is more on their individual research, they work closely with their supervisors and faculty in cognate disciplines. As well as being part of the PhD community, all our doctoral researchers are an integral part of the subject groups in which they are based.
- **Research training:** the School is part of the Warwick Social Science Doctoral Training Centre (DTC). Warwick is one of 21 ESRC DTCs and one of only 12 single institution DTCs. As the largest department in the DTC, the School plays a pivotal role. The School has been instrumental in shaping the core research training programme. The Business School, along with the Economics Department, is also the largest recipient of DTC studentships. Since its inception in 2011, of the 27 studentships available per annum 6-7 have been awarded to our students each year.
- **Quality of supervision:** to ensure that the quality of supervision our doctoral researchers receive is uniformly excellent we have implemented a system of dual supervision (as

opposed to assigning a senior first and junior second supervisor). This brings not just pedagogic benefits, but also helps ensure continuity of supervision should one supervisor leave. It is also intended to promote interdisciplinarity and the breaking down of silos between Subject Groups.

- **Placement:** the placement of our graduates in leading academic institutions is one of our strategic priorities. The Doctoral Programme Committee is currently considering a range of initiatives to help achieve this ambition. To secure good placements, doctoral researchers need to be able to evidence their research credentials. The School has always encouraged supervisors to co-author papers with PhD researchers, especially with a view to publishing in quality journals to help launch their research careers. One recent change which is helping in this regard is the amendment to programme regulations to allow our students to submit a thesis in a three-paper format as an alternative to the standard single 'monograph' format.
- **Collaboration with external partners:** the School encourages and supports faculty (through guaranteed matched-funding) to seek external partners for collaborative PhD studentships as a way of increasing funding opportunities, generating impact and improving placement prospects. Recent collaborations include joint PhD projects with Nottinghamshire Healthcare NHS Foundation Trust, NHS East Midlands Leadership Academy, Academy of Sciences Finland, Boots Alliance, Rugby Housing Improvement Agency, the Design Council, Decision Technology, the Royal Shakespeare Company, and the Birmingham Repertory Theatre.

The School is launching 10 new fully funded doctoral studentships for 2014-15, aligned to its strategic priorities in the areas of Behavioural Science, Economic Modelling, Global Energy, and Healthcare Management. The School has also committed to 15 fully funded PhD scholarships in Healthcare over the 2014-18 period, as matched funding associated with the successful bid for £10m to the NIHR Collaboration for Leadership in Applied Health Research and Care (CLAHRC). The aim is to build a critical mass of doctoral researchers, supporting our world class ambitions in these areas.

d. Income, infrastructure and facilities

i. Income

As noted above, the income generation environment is a challenging one. Nevertheless, the School has been successful in securing awards with a total value of more than £8m in the 2012-2013 period alone. Some of the notable successes are highlighted in section b.i (p.3) above. Other significant research council awards for the 2012-2013 period include **Loomes'** Leverhulme award for a project on the Behavioural Economics of Value (£650k), **Galvao's** ESRC award for a project on Economic Forecasting under Macroeconomic Uncertainty, and **Read's** EPSRC Centre for Excellence in End Use Energy Demand (£590k). As well as a number of NIHR awards highlighted in section b.i, the School has recently secured funding from other government departments, for example **Shaw's** DEFRA project on considering the role of convergent volunteers during major floods (£100k). Examples of recent funding secured through the private sector include a Chair funded by GE Capital (£300k) and **Giulietti's** FLEXGRID project funded by Western Power Distribution (£124k).

Although the Business School remains committed to securing funding from the Research Councils – and has had significant success in doing so – it is recognised that there is a need to diversify funding sources. We believe that high quality faculty producing high quality research provides a firm foundation for success in future grant bids. A current initiative is to develop expertise in securing EU funding, building on the expertise of faculty who have already won EU grants.

The School's success in securing funding from a wide range of sources including research councils, as well as commissioned research funding from government departments, private companies and other external stakeholders, has ensured a continuous flow of research output tailored to the needs of specific user groups, directly addressing their needs in terms of policy formation and the development of practice. Evidence of this is reflected in a recent study commissioned by the ESRC to assess the business impact of social science research, which

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selected WBS as an exemplar, along with only two other business schools, based on the level of ESRC funding attracted by WBS over the previous decade and WBS's commitment to generating impact (see *Evaluating the Business Impact of Social Science* Report to the ESRC July 2103, p.82 – <http://www.esrc.ac.uk/research/evaluation-impact/research-evaluation/impact-on-business-by-business-and-management-schools.aspx>)

ii. Infrastructure

Currently, WBS staff are currently located in three buildings a short distance apart from one another. Since 2000 a phased programme of work has been underway to provide high quality teaching and research accommodation commensurate with the School's standing and reputation. During the assessment period a major refurbishment of one of the buildings was undertaken in order to provide state-of-the-art workspace and facilities for doctoral students (see section c. ii. 'Research students'). Work is currently underway on the new £25M, 7,800m² extension of the main WBS building (due to be completed in early 2015); this will enhance our physical infrastructure dedicated to research, including the following further benefits:

- The release of significant space to house new faculty appointments;
- Dedicated, bespoke space for the School's Research Office;
- Expanded and enhanced laboratory facilities for conducting behavioural science experiments;
- The bringing together of all WBS faculty on one site.

The Space will be configured to support and encourage collaboration and cross-fertilisation of ideas and projects, including open academic areas, a social space and a creativity hub. Details of the project and plans can be viewed at:

<http://www2.warwick.ac.uk/fac/soc/wbs/central/academic-services/services/3b>

Other developments and improvements that have been made to the School's research environment in recent times have been detailed in section b. ii.

e. Collaboration and contribution to the discipline or research base

As a large and well established business school, research activities at WBS make a number of significant contributions to the vitality and development of the business and management community in the UK and beyond. This includes participation in international and national collaborative networks of scholars, and high quality theoretical and empirical work involving national and international collaborations.

International Collaborations

Research at WBS has genuinely global reach, with faculty engaged in ongoing joint research worldwide. Our Distinguished Professors of Research Environment are leading scholars who hold joint appointments with WBS and with leading overseas universities, who have been specifically recruited to help develop international collaborative research links and enhance WBS research (<http://www.wbs.ac.uk/research/staff/profs-of-environment>). Beyond this, a taste of the range of international collaboration can be obtained from the following (highly incomplete) list of WBS collaborations with scholars at leading overseas universities: Bremen University (**Branke**); University of British Columbia (**Liu**); University of California, Berkeley (**Chater**); University of California, Davis (**Taylor**); University of California, Irvine (**Nandhakumar**); University of California, Los Angeles (**Bartram**); Copenhagen Business School (**Nandhakumar**); Cornell University (**Bartram, Chater**); Delft University (**Alpern**); Duke University (**Klingebiel**); Fudan University (**Chen**); University of Ghent (**Lockett, Ucbasaran**); University of Gothenburg (**Henfridsson**); Harvard University (**Moore**); HEC Montreal (**Heracleous**); INSEAD (**Branke**); Johns Hopkins (**Bartram**); Kyoto University (**Shaw, Wood**); University of Lugano (**Gamba**); Massachusetts Institute of Technology (**Chater**); Monash University (**Lockett, Wood, Ucbasaran**); Nanyang University (**Taffler**); National University of Singapore (**Alpern**); University of New South Wales

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(**Branke, Hodgkinson**); New York University (**Klingebiel, Taffler**); University of North Carolina, Chapel Hill (**Bartram**); Northwestern University (**Harris**); Oklahoma University (**Eubanks**); Oslo University (**Henfridsson, Ucbasaran**); Rotterdam School of Management (**Van Doorn**); Singapore Management University (**Klingebiel**); Syracuse University (**Lockett**); Tel Aviv University (**Chater, Alpern**); University of Wisconsin, Madison (**Alpern**); Witwatersrand University (**Wood**); and at policy, research and standards bodies such as the European Central Bank (**Taylor**), Eurostat (**Mitchell**), the Norges Bank (**Moore**), the International Monetary Fund (**Gamba, Taylor**), ISO (**Shaw**) and RAND (**McDonald**).

Enhancing the National Community of Scholars

The School aims to be a good citizen within the national community of business and management research by hosting scholarly events, developing national research networks and centres, and through supporting staff in engaging with and holding leadership positions within key scholarly societies (e.g. British Academy of Management).

From 2007 until its funding ceased in 2011, WBS hosted the ESRC/EPSRC Advanced Institute of Management (AIM) Research (directed by **Wensley**, now Emeritus). As the UK's premier management research initiative, AIM Research invested around £30 million into management research between 2002 and 2011 which was used to support the work of over 250 scholars from more than 100 UK universities. Hosting this initiative placed WBS at the heart of a UK and international collaborative network involving the Association of Business Schools (ABS), the British Academy of Management (BAM) and the Chartered Management Institute (CMI).

The Enterprise Research Centre (ERC) is a Warwick and Aston-led three-year £3 million initiative in collaboration with teams at Imperial College, Birmingham, Strathclyde, and De Montfort that aims to conduct research of international standing, serving as a focal point ('hub') for research on small and mid-sized enterprise (SME) growth and performance, both in the UK and internationally. The Centre is co-funded by ESRC, the Department for Business, Innovation and Skills (BIS), the Technology Strategy Board (TSB) and, through the British Bankers Association (BBA), by the Royal Bank of Scotland plc, HSBC plc, Barclays Bank plc, Bank of Scotland plc and Lloyds Bank plc. Its primary raison d'être is to advance state-of-the-art knowledge that will inform SME policy and strategy development in the UK by drawing on and contributing to the required evidence-base. The overarching goal of the Centre is to become the leading UK authority on SME policy and strategy, offering independent advice, commentary, evaluation and critique.

At University level, faculty are engaged in joint research initiatives with the Medical School and with the Faculty of Social Sciences, for example, the Global Research Priorities programme <http://www2.warwick.ac.uk/research/priorities/>.

WBS plays a key role as the largest department within Warwick's ESRC funded Social Sciences Doctoral Training Centre (DTC), as referred to earlier in this document. The DTC cements strong collaborative ties across the social sciences at Warwick in relation to the training and development of doctoral research. A number of collaborations with other universities are central to enriching the training and development opportunities available to WBS students – for example, an annual Nottingham-Birmingham-Warwick DTC Student Conference takes place each year and provides opportunities for raising awareness across the three DTCs of the research being undertaken by the students, providing opportunities for discussion with, and feedback from, other members.

Enhancing the Community of Scholars Worldwide

WBS faculty have made substantial contributions to editorial roles and membership of editorial boards and review committees of leading international scholarly journals during the assessment period at journals including: *Academy of Management Journal* (**Allen**); *Academy of Management Review* (**Heracleous, Hodgkinson**); *Accounting, Organizations and Society* (**Bryer**); *British Journal of Management* (**Wood**); *Entrepreneurship Theory and Practice* (**Hayton**); *European Journal of Operational Research* (**Dyson** (now Emeritus)); *Human Resource Management*

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(**Hayton**); *International Journal of Management Reviews* (**Mellahi**); *Journal of Business Venturing* (**Lockett**); *Journal of Management* (**Hodgkinson**); *Journal of International Business Studies* (**Mol**); *Journal of Management Studies* (**Hayton, Heracleous, Lockett, Ucbasaran**); *Journal of Organizational Behavior* (**Hodgkinson**); *Leadership Quarterly* (**Eubanks**); *Management Science* (**Chater**); *Organization Science* (**Hodgkinson**); *Organization Studies* (**Fotaki, Reay, Swan**); *Psychological Review* (**Chater**); *Psychological Science* (**Chater**); *Strategic Entrepreneurship Journal* (**Lockett**); *Strategic Management Journal* (**Hodgkinson, Stadler**); and *Work Employment and Society* (**Wood**).

Faculty are further involved in the advancement of scholarly communities internationally through engagement with learned societies, where they have held leadership positions during the assessment period, examples of which include: Chair, CMS Division of the Academy of Management (**Contu**); Chair, Business and Industrial Section Committee of the Royal Statistical Society (**Battisti**); MOC Division of the Academy of Management (**Hodgkinson**); and Director, Institute of Customer Service (**Johnston**).

Keynote and plenary lectures were given by a number of WBS faculty over the assessment period. The broad range of these can be ascertained from the following (highly incomplete) list: Plenary Lecture, Quadrennial Conference of the Operations Research Society of China, Nanjing, 2008 (**Chen**); Inaugural BAM Fellows Lecture, British Academy of Management Annual Conference, Harrogate, 2008 (**Hodgkinson**); Keynote Lecture, Hargraves Institute Conference on Innovation, Sydney, 2008 (**Stadler**); Keynote Lecture, Information Systems Research Seminar in Scandinavia (IRIS), Molde, 2009 (**Nandhakumar**); Keynote Lecture, Information Systems Research Seminar in Scandinavia (IRIS), Molde, 2009 (**Henfridsson**); Plenary Lecture, British Accounting and Finance Association Annual Conference, Cardiff, 2010 (**Taylor**); Plenary Lecture, DEFRA Coastal Flooding: Emergency Planning & Response, Cambridge, 2010 (**Shaw**); Keynote Lecture, Development Studies South Africa Conference, Port Elizabeth, 2010 (**Wood**); Keynote Lecture, Third International Seminar on Entrepreneurship: New perspectives in Entrepreneurship Research, Seville, 2011 (**Hayton**); Opening Keynote Lecture, Joint Academy of Management/European Association for the Advanced Study of Management Conference, New Frontiers in Managerial and Organizational Cognition, Maynooth, 2012 (**Hodgkinson**); Plenary Lecture, French High Committee for Civil Defence, Paris, 2012 (**Shaw**); Keynote Lecture, Forum for Research in Innovation, Padua, 2012 (**Hayton**); Keynote Lecture Deutsche Bundesbank Forecasting Workshop, Eltville, 2012 (**Mitchell**); Plenary Lecture, Emergency Planning Society Core Cities Conference, York, 2010 (**Shaw**); British Accounting and Finance Association Interdisciplinary Perspectives Special Interest Group, Nottingham, 2013 (**Taffler**); Keynote Lecture, Kyoto University Symposium on Capitalist Diversity, Kyoto 2013 (**Wood**).

A further indication of the role of staff within the broader community of scholars in business and management studies is the large number of edited collections by staff at Warwick, including prestigious series by publishers such as Oxford, Routledge and Palgrave.

Fellowships of learned societies include: British Academy (**Chater, Loomes**), British Academy of Management (**Glaister, Hodgkinson**), British Psychological Society (**Hodgkinson**), Cognitive Science Society (**Chater**), Operational Research Society (**Chen, Dyson** (now Emeritus), **Shaw**), and the Royal Statistical Society (**Battisti, Taylor**). As mentioned previously, six of our faculty are Academicians of the Academy of Social Sciences (**Glaister, Green, Grint, Hodgkinson, Taylor, and Wensley** (now Emeritus)). **Taffler** was recently made a Fellow of the CFA Institute UK and the School has ten Academic Fellows of the Chartered Institute for Personnel Development (**Currie, Donaghey, Hayton, Hodgkinson, Hoque, Kiefer, Meardi, Marginson, Taylor, and Wood**).

These achievements reflect not only the status and esteem of key members of faculty, but also the commitment of the School to contributing to the global scholarly community in business and management.