

<p>Institution: University of Bedfordshire</p>
<p>Unit of Assessment: 19 - Business and Management Studies</p>
<p>Title of case study: Supporting SMEs by facilitating innovation and improved knowledge transfer by working with universities</p>
<p>1. Summary of the impact</p> <p>Impacts include:</p> <ol style="list-style-type: none"> 1. Providing tools, processes, events by which SMEs can engage with universities 2. Allowing SMEs and universities to jointly create technology roadmaps and engage in knowledge transfer 3. Encouraging SMEs to become involved in R&D projects by providing tools to National Contact Points (NCPs). <p>Through repeat-funded projects, Business and Information Systems Research Centre (BISC) has developed strong European collaborations with Research Technology Developers (RTDs), SMEs and public body partners. Funded projects have addressed European R&D dissemination and use in health-based SMEs; knowledge transfer in the environmental sector; and knowledge transfer in manufacturing.</p>
<p>2. Underpinning research</p> <p>BISC sits in the Business Management Research Institute (BMRI) with the underpinning research resulting in the impacts above being based on the work of <i>Dr Elly Philpott</i> in collaboration with other HEIs between 2005 and 2011.</p> <p>Research was undertaken to better understand the critical issues associated with innovation adoption in SMEs required if they are to benefit from the potential opportunities offered by innovation, namely to survive and grow in an increasingly competitive business environment.</p> <p>1. Providing tools and processes by which SMEs can engage with universities</p> <p>A series of three projects, MAPSME I, II, III (2003 to 2008), were independently endorsed by 9 universities in the east of England. Dr Philpott proposed and managed these projects which created tools and processes to facilitate knowledge transfer amongst the i10 universities. i10 was a HEIF funded collaboration of ten universities in the East of England, including the University of Bedfordshire. In collaboration with partners Cranfield, Cambridge (IfM and CBR), and Hertfordshire, Dr Philpott undertook primary research with the manufacturing sector to develop procedures for SME-university engagement within the framework of i10, which was then widened to cover all sectors. Dr Philpott's work with Cranfield included the use of academic and SME focus groups to capture stakeholder requirements and map academic resources to SME econometric profiles. This work was unique in that it combined quantitatively derived national econometric data with qualitative techniques of data collection and best practice in human computer interfacing to produce a tool that would allow SMEs to benchmark their own innovation performance. See [3.1] The Centre for Business Research at Cambridge University provided econometric profiling, Bedfordshire/Cranfield provided the mapping and Hertfordshire developed the web interface. The work's significance is illustrated by adoption of the 'innovation tool' by the Association of Universities in the East of England. This tool allows SMEs to benchmark their innovation performance against an SME database [5.6].</p> <p>2. Allowing SMEs and universities to jointly create technology roadmaps</p> <p>A further two projects, SEEK I and II (2004 to 2006), were also independently endorsed and evaluated by i10 in which Dr Philpott project-managed and worked collaboratively with the Universities of Cambridge, Essex, and East Anglia, and Writtle College. These projects sought to utilise Technology Road Mapping (TRM) techniques to develop a framework for research in the environment sector in the fields of 'natural environment management', 'cleaner and leaner' technologies, and 'end of pipe' technologies. Although TRM had been used before in the</p>

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electronics and aerospace sectors it had not, up to this point, been applied to the environment sector due to the relative immaturity of businesses in this sector. The projects involved working directly with SMEs, SME Associations and RTDs from the environment sector, with the framework produced used by collaborating SMEs and shared with all i10 universities for strategic planning purposes [3.2].

3. Encouraging SMEs to become involved in R&D projects

The FP7-funded USE&DIFFUSE project (2008 to 2010) conducted a survey of over 200 European SMEs and 6 cases studies of SME involvement in European projects with the objective of developing a methodology for 'success' to be embodied in a Handbook which has subsequently been produced in 8 European languages.

The primary data sources for this major collaborative project were SMEs who had worked on successful projects, with SMEs continuing to be the focus at each stage of methodology development and production of the Handbook. Dr Philpott worked with RTD and SME partners: Iberian Productivity and Innovation Centre, Spain; CUT, Krakow; RTD Talos, Cyprus; GRANT Garant s.r.o; Fundacion Cartif, Spain; Steinbeis-Europe. As a work package owner, Dr Philpott designed and administered the survey and case collection and contributed text and English language editing for the handbook. She also hosted the UK study visit and facilitated sessions during the Spanish and German study visits. Research outcomes are reported in [3.3, 3.4, 3.5].

Following this work Dr Philpott was awarded an ESRC Local Authority Research Council Initiative Fellowship to work with a local authority and local SMEs to disseminate lessons learnt from the research. This work was completed successfully [3.6].

3. References to the research

- 3.1 **Philpott, E.**, and Bevis, K., (2005), "Innovation needs of manufacturing SMEs: evidence from an EU region", proceedings of European Operations Management Association (EuROMA) conference – Operations and Global Competitiveness conference, Budapest July, 1661-1667
- 3.2 **Philpott, E.**, Jewkes, P., Shepperd, P., Hall, M., (2004), "A Framework to Support the Environment Sector in the East of England", available from the authors, including SME associations UKCEED, Envirolink and the University of Bedfordshire.
- 3.3 **Philpott, E.** (2010), "SMEs as future partners: Lessons learnt from EU Projects for SMEs and HEIs", Higher Education Academy conference, Hatfield, conference proceedings, June, www.heacademy.ac.uk/eventsandnetworking/conference/tracks2010
- 3.4 (2* equivalent) **Philpott, E.** (2012), "Successful Knowledge Sharing in Virtual Projects – a Review of an EU FP7 Project", International Journal of Information Technology and Management, Vol. 12, Nos. 3 / 4
- 3.5 (2* equivalent) McNerney, O. and **Philpott, E.**, et al (2010), "Making European Research Work for Your Company: Strategic Guide to the Successful Use and Dissemination of the Results of Research and Development Projects. Steinbeis Publications ISBN 978-3-941417-27-4. Available in eight European languages. See also www.ec.europa.eu/research/sme-techweb/pdf/use_diffuse.pdf.
- 3.6 ESRC grant ref RES-192-27-0005. Local Authority Research Council Initiative (LARCI) Fellowship. Project met all objectives.

4. Details of the impact

Our collaborative research on supporting SMEs through funded projects has resulted in a number of impacts. Firstly, local public bodies, SMEs, SME Associations, NCPs and RTDs have benefited through increased awareness of their respective roles and contributions gained through involvement in our projects, attendance at our workshops, technology road mapping and knowledge transfer events, with improved networks and websites a direct consequence of this work (cf. MAPSME and SEEK). Secondly, our work has benefited individual SMEs through direct engagements with universities, providing access to new sources of consultancy, placements and

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various types of formal and informal knowledge transfer (MAPSME and USE&DIFFUSE). Thirdly, our work has developed processes, methodologies and roadmaps for use by regional universities (SEEK and MAPSME), local authorities (LEVERSME) and the European Commission (USE&DIFFUSE) International knowledge transfer has been further enhanced through our study visits which enabled local SMEs to travel to other countries to understand best practice in their technology areas, and to exchange ideas (USE&DIFFUSE). We have gathered and assimilated best practice for SME-RTD involvement in European projects and in terms of 'reach' provided guidance in the form of the *Use and Diffuse Handbook* distributed to positive acclaim throughout Europe. This book is now produced in 8 European languages and used by NCPs throughout Europe.

1. Providing tools, processes, events by which SMEs can engage with universities

In the **MAPSME** projects companies were invited to initially engage with the universities by using an online innovation test, which signposted innovation weaknesses and identified those SMEs to be visited by a university academic. This tool was independently acclaimed by the EU INNOVA project as amongst the top 15 Innovation Management tools in Europe [5.1].

The tool still resides on the Association Of Universities in the East of England (AUUE) website [5.6] and SMEs visiting the site are able to benchmark their innovation performance against similar SMEs. By helping SMEs to be aware of their relative competitive performance as regards innovation, this tool has provided incentives for SME engagement, with over 300 SMEs mostly from the east of England using the tool up to 2010.

2. Allowing SMEs and universities to jointly create technology roadmaps and facilitating knowledge transfer (KT)

The UoB-initiated **SEEK projects** have produced an environmental framework, with i10, 7 SMEs and 2 SME associations involved in its development. The road mapping workshop (Sept 2004) allowed 7 SMEs to plan their businesses to 2015 in a context of deeper insights into the future technical, legal and business environments they will face. It has allowed the universities to focus on R&D needs and the SME associations to offer additional advice. Outputs have been used by Central Bedfordshire Council and universities outside the region (e.g. East London) in support of infrastructure bid applications. Following delivery of a presentation at the Institute for Small Business and Entrepreneurship conference, Dr Philpott was invited by the UEL to share best practice when engaging with SMEs from the environment sector with academics working on an ERDF 'Eureka Project' [5.2]. Two SEEK events, 'Opportunities in Carbon and Waste' (Nov 2004) and 'Opportunities in Water and Environment' (March 2005), were attended by 40 SMEs. At the first event feedback showed 68% believed the event to be relevant, 76% indicated that the materials provided were useful and 83% made new and useful contacts.

Following the UoB-initiated events, a number of knowledge transfer activities were started across the universities within the i10 consortium. These included the brokering of a hitherto unpublicised brownfield environmental technology; cross referral of enquiries between support agencies; two Knowledge Enterprise East Projects, one to develop emerging technologies and the second to undertake market research and development for a company; a new product development consultancy for a company dealing with air pollution; and a student placement on an IT project for a company in the water industry. All knowledge transfer activities involved SMEs who previously had not considered approaching their local universities for help.

3. Encouraging SMEs to become involved in R&D projects

Some 10,000 *Use and Diffuse Handbooks* were distributed between 2010 and 2011 to SMEs and SME-support organizations, providing guidance on involvement in European R&D projects. The handbook is SME-friendly and utilizes the visual metaphor of a 'journey' using a pedagogical approach which makes it more appealing to SMEs.

The *Handbook* has now been endorsed by a number of public and private bodies throughout

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Europe who actively recommend the *Handbook* to SMEs and RTDs considering joining EU research projects [5.3, 5.4].

European National Contact Points have also subsequently agreed to use the handbook with clients [5.5]. By inviting UK SMEs to participate in study visits in partner countries the project has provided UK SMEs with the opportunity of benefiting from EU funds for R & D projects. BISC has itself hosted a UK study visit attended by partners, 10 SMEs and 4 SME associations (Nov 2009). Following the completion of *Use and Diffuse*, Dr Philpott was invited to contribute to the FP7 research policy review by the project officer [5.7] and by the UK government's Technology Strategy Board.

The **LARCI project LEVER-SME** involved profiling local SMEs for involvement in European projects and the transfer of knowledge to public authorities as to how SMEs benefit from involvement in EU projects. This included the distribution of the *Use and Diffuse* handbooks to 60 companies and a seminar on 'Accessing funding' in October 2010.

5. Sources to corroborate the impact

- 5.1 Report listing the i10 innovation tool within the top 15 innovation tools in Europe: AT Kearney, See: INNOVA, Paper No2, Page 70, *European Innovation Management Landscape, Assessment of current practices in innovation management consulting approaches and self-assessment tools in Europe to define the requirements for future best practices*, available at www.europe-innova.eu/c/document_library/get_file?folderId=26354&name=DLFE-2915.pdf
- 5.2 Letter recognising Dr Philpott's contribution to the UELs Eureka bid/ Project Director, Sustainability Research Institute, University of East London
- 5.3 Signpost for the Use and Diffuse Handbook, European IPR Helpdesk, c/o infeurope S.A., 62, rue Charles Martel, L-2134, Luxembourg, Phone: +352 25 22 33 – 333, Fax: +352 25 22 33 – 334.
www.iprhelphdesk.eu/sites/default/files/newsdocuments/IP_management_in_FP7_during_the_proposal_stage_0.pdf
- 5.4 Email from User of the Use and Diffuse Handbook, Public Relations IdealST, 2011, c/o Austrian Research Promotion Agency, June 2010, See also: www.ideal-ist.net/news/benefit-from-this-book-make-european-research-work-for-your-company-for-busy-professionals/. Handbook also available on the following websites: SME-techweb (EC); European IPR Helpdesk; WBC-inco; Forum for Australian Science and Technology; Fit for Health network; Research Professional; Kappa Health; Slovak Organization for Research and Development; Ab-acus; Enterprise Europe Network; IdealST
- 5.5 Emails from users of the Use and Diffuse Handbook, Innovation Advisors, Enterprise Europe Network East, Nov 2012, e.g., John Christopher and Dr Mike Hacker, Innovation Adviser, M: +44 (0) 7799 060400, +44 (0) 7764-836-921. Email correspondence also available with Bruno Mourenza (Italian NCP Health); Peter Walters (UK NCP IT); Graham Hughes (UK NCP Health); Gemma Ferguson (UK NCP Health); Ed Ricketts (UK NCP @ BBSRC) distributed to all UK research institutions; Catherine Holt (NCP Environment); Sarah Forsan (TWI); Jacqui McAloon (TUVNEL)
- 5.6 Website of the organisation that has adopted the i10 innovation tool, Association of Universities in the East of England, www.uni-east.ac.uk/innovation-test
- 5.7 Email Invitation to Dr Philpott to contribute to policy review, Andrea Erdei, Research Policy Officer, European Commission, DG Research, Unit T4 - SMEs, Tel.: +32-2-29-69938