

Institution: University of Brighton		
Unit of Assessment: C17 Business and Management Studies		
Title of case study: Establishing innovation support networks for SMEs to drive clean and green growth		
Period when the underpinning research was undertaken: 2000 – 2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
John Bessant	Professor of Technology Management	1984 – 2002
David Francis	Principal Research Fellow	1997 – to date
Mike Hobday	Professor of Innovation Management	2004 – 2011/2012 – 2016
Despina Kanellou	Research Fellow	2000 – to date
Howard Rush	Professor of Innovation Management	1983 – 2019
George Tsekouras	Principal Research Fellow	1997 – to date
Period when the claimed impact occurred: 2014 – to date		
Is this case study continued from a case study submitted in 2014? N		
<p>1. Summary of the impact Based on University of Brighton (UoB) research into new technological and innovation capabilities for SMEs the Green Growth Platform (GGP) was established in 2014 and expanded nationally via Clean Growth UK (CGUK) in 2018. This business-innovation network addresses the major challenge of enabling and improving SME business performance and sustainability; CGUK has attracted 1,863 businesses and offers a range of research-led services to identify new market opportunities, develop innovative products and implement business models to commercialise or scale-up their innovations. Between 2014 and 2020 the open innovation environment at the GGP has led to 180 new business-university R&D/innovation projects with a total value of GBP3,840,000. Consequently, 97 new cleantech products and services were developed, 248 jobs created, and 225 jobs safeguarded by SMEs in the cleantech economy. A subset of these SMEs reported an average annual profit increase of 23% over two years.</p>		
<p>2. Underpinning research The Centre for Change, Entrepreneurship and Innovation Management (CENTRIM) at UoB has contributed to the understanding of innovation capability through the study of business learning networks. This research bridges the gap between the theoretical principles and the practice of innovation management and focusses on the essential characteristics for managing innovation in SMEs by addressing their strategy, processes, linkages and people [Reference 3.1]. SME innovation activities typically take place in the context of unstructured innovation projects rather than in highly-structured R&D departments. To cope with resource limitations, SMEs benefit from 'innovation intermediary partners' such as Research Technology Organisations (RTOs) and university innovation consultants. The limitations are becoming even more acute for SMEs seeking to utilise more radical technologies in emerging markets such as the Clean Growth sectors. CENTRIM's research has identified innovation capabilities in SMEs as an extended learning process and developed programmes to facilitate the move to higher-level performance along the continuum from <i>passive</i>, through <i>reactive</i> and <i>strategic</i> to <i>creative</i>, where businesses complement internal capabilities with open innovation, assessing risks and benefits of potential partnerships [3.2].</p> <p>To investigate the challenge of supporting SMEs to be strategic and creative, CENTRIM conducted five major research projects, delivered between 2002 – 2019 [3.6 – 3.10]. These projects identified three best practice characteristics for improving innovation capability amongst SMEs. First, the research identified the role of learning networks in promoting SMEs' absorptive capacity. Learning networks combine processes of peer-to-peer learning with innovation coaching. After determining the characteristics of such networks [3.3, 3.4], UoB launched the <i>Profitnet</i> programme in 2004 to develop SMEs' innovation capability (the outcomes of which are evidenced in the REF2014 case study). Through action research projects, this body of work explored issues such as the formation of knowledge exchange</p>		

communities; established the 'impartial' facilitation between different interests and potential conflicts; created a trusted environment to monitor and safeguard confidentiality; and examined alternative approaches to innovation coaching [3.6, 3.7, 3.9].

Secondly, the research identified the challenges and enablers connecting SMEs with the research base (eg universities, RTOs). UoB researchers examined good practice schemes across twelve EU countries, distinguishing between (i) behaviour consolidation support schemes (eg R&D tax incentives) more appropriate for SMEs with a strong capability and (ii) value-added support schemes, which aim to build up the innovation capability of SMEs from lower to higher levels. The research highlighted the importance of public-private innovation partnerships, where SMEs' capability is developed through opportunities to partner with universities and large corporations [3.8].

Thirdly, UoB considered how Open Innovation (OI) partnerships and activities could allow SMEs to complement their capabilities with those of other innovation players (eg large corporations, other SMEs and the crowd). The research examined 120 good practice OI projects carried out by SMEs across Europe. The work illustrated the value of developing the right partnership for each stage of the innovation journey and the significance of developing both the strategy and the implementation of an OI partnership. UoB developed a special methodology to facilitate each innovation journey in SMEs - a methodology that includes a Canvas and an integrated web-based portal with an OI Readiness Assessment tool, 112 good practice cases and 134 supportive tools [3.9, 3.10].

3. References to the research

[3.1] Bessant, J., Francis, D., Meredith, S., Kaplinsky, R., Brown, S., (2001). Developing manufacturing agility in SMEs. *International Journal of Technology Management*, 22(3), 28-54. [Quality validation: output in leading peer-reviewed journal].

[3.2] Rush, H., Bessant, J., Hobday, M., (2007). Assessing the technological capabilities of firms: Developing a policy tool. *R&D Management*, 37(3), 221-236

<https://doi.org/10.1111/j.1467-9310.2007.00471.x> [Quality validation: output in leading peer-reviewed journal].

[3.3] Bessant, J., Alexander, A., Tsekouras, G., Rush, H. & Lamming, R. (2012). Developing innovation capability through learning networks. *Journal of Economic Geography*, Special Issue, 12(5) 1087–1112. <https://doi.org/10.1093/jeg/lbs026> [Quality validation: output in one of the highest peer-reviewed academic journals].

[3.4] Tsekouras, G., Kanellou, D., & Rai, N., (2013). Redefining learning networks through ICT capabilities: representations, behaviours and intermediation strategies. *Technology Analysis and Strategic Management, Special Issue Policy and Intermediaries for Technology Transfer*, 25(3), 257-279 <https://doi.org/10.1080/09537325.2013.764985> [Quality validation: output in a leading peer-reviewed academic journal].

[3.5] Tsekouras, G., and Kompis, C., (2014). 'Public-Private Innovation Strategic Alliances for SMEs: An Emerging Model' in T. K. Das (Ed.), *Managing Public-Private Strategic Alliances* (series "Research in Strategic Alliances"), IAP (Information Age Publishing), Hershey, USA. [Quality validation: chapter in a peer-reviewed publication].

Key research grants

[3.6] George Tsekouras [UoB PI], EU FP5. 2002 – 2004, KNOWLABORATION (Knowledge Applications for Collaborative Organisational Networks). Total funding: EUR1,432,999. UoB allocation: GBP203,033.

[3.7] George Tsekouras [UoB PI], EU FP6, 2005 – 2006, KLAB (Knowledge and Learning Among Business), UoB allocation: GBP105,821.

[3.8] George Tsekouras [PI], EU FP7 (UoB co-ordinator), 2010 – 2013. Building RAPPORT between Small and Medium-Sized Enterprises and Public or Private Research Capabilities. Total funding: EUR1,423,352. UoB allocation: EUR308,983.

[3.9] George Tsekouras [PI], Horizon 2020, 2014 – 2017. CoachCom 2020 (COACHing COMMunity enhancing impact of the H2020 SME Instrument), Total funding: EUR759,856.24. UoB allocation: EUR80,773.75.

[3.10] George Tsekouras [PI], EU Horizon 2020 (UoB co-ordinator), 2016 – 2019. INSPIRE (INtegrated Support of oPen Innovation pRofessionalization). Total funding: EUR1,692,742 UoB allocation: EUR 401,040.

4. Details of the impact

CENTRIM's research expertise in capability-building and innovation networks for SMEs has evolved through a focus on 'closing the loop' between industry and academia. The research addresses the challenge of SME innovation and forms the basis for CENTRIM's training, coaching and support for SMEs. The research-led *Profitnet* programme, established in 2004, was then incorporated in 2014 into a full-scale cohesive network, the Green Growth Platform (GGP). GGP was co-devised and co-created by CENTRIM and the UoB's Economic and Social Engagement Team (EASE) as an applied knowledge exchange pathway to deliver growth and improved performance through open innovation in the green and clean energy sectors. GGP includes key elements identified by CENTRIM's research, brought together with practical knowledge around business support, innovation, networking and skills delivery from the EASE team, with a specific focus on the green and low carbon sectors.

GGP was launched with GBP3,000,000 from HEFCE Catalyst funding focusing on support for low carbon and environmental SMEs across Sussex. This route to impact increased the capacity of UoB to engage with end-users and GGP, under the leadership of its Director and a large team of business development, knowledge exchange and marketing professionals co-developed GGP services with CENTRIM staff. The success of GGP led to the development of Clean Growth UK (CGUK), the first phase of which ran between 2018 – 2021. CGUK is a national business-innovation uniting university-led green business networks to catalyse clean and green innovation and growth; it was established with GBP3,500,000 from Research England's Connecting Capability Fund. The UoB programme connects with two other university-led hubs based at the University of Portsmouth and Liverpool John Moores University. Since 2014, improvement has been shown across the UoB GGP 1,863 strong SME business member network [Sources 5.1, 5.2, 5.3].

CGUK, including the GGP lead hub at UoB, have offered services using CENTRIM's research principles and involving CENTRIM researchers in their delivery. These include:

- (a) *Innovation and R&D services* that link SMEs to research expertise and facilities;
- (b) *Commercialisation services* that support the development of clean products and services through coaching, workshops and Profitnet groups;
- (c) The *Investment Readiness service* that help SMEs prepare for financial investment and access to capital via coaching and workshops/webinars;
- (d) *Access to Skills* through an internship and placement programme for knowledge and technology transfer;
- (e) *Online information and direct support* to help companies connect with each other and access funding for innovation.

4.1 Developing innovation skills, product and process innovations

Five annual surveys (2016-2020) were undertaken to assess the impact of the CGUK programme. The surveys show that engagement with GGP/CGUK resulted in increased innovation skills: 78% of SMEs (average across all five surveys) acknowledged the impact of the programme on skills for developing new products, services, and processes; and 67% acknowledged the impact on skills required to scan the environment for new ideas and market trends [5.1]. The programme supported SMEs to develop 97 new or enhanced 'green' products or services from 2014 to 2020, including:

- *new products* (27% surveyed) eg a [filtration system](#) removing metals from wastewater;
- *enhanced products* (23%) eg an engineered restraint [lightweight strap](#) that uses 70% less steel but retains the same strength of traditional heavy-duty straps;
- *new services* (25%) eg recycling of [disposable Absorbent Hygiene Products in care homes](#), reducing the environmental footprint in manufacturing and disposal processes;
- *enhanced services* (21%) eg a [solar-powered unit](#) that attaches to existing on-street bicycle stands, controlled via an app using RFID technology.

In addition, the GGP/CGUK programme supported members to develop 'green' process innovations such as the development of new methods of organising work responsibilities and decision making (73%, Survey-2018), new methods of managing external relationships (72%, Survey-2018), and new internal organisational processes and procedures (56%, Survey-2018). Examples include a [shredding service](#) that moved from manual to electronic

systems, saving time, cost and materials, and a [process transforming agri-residues into paper pulp](#) [5.1, 5.2].

4.2 Creating open innovation partnerships

Of the surveyed members, 77% (average across all surveys) recognised the impact of the CGUK/GGP programme on skills for accessing and using external know-how, and 71% acknowledged the effect on networking skills, with the impact reaching as high as 92% in Survey 2020 [5.1]. The GGP UoB hub within CGUK directly facilitated the development of 180 R&D/innovation industry projects between universities and companies with a combined total budget of GBP3,843,289. In Survey2020, 93% of the respondents said they are satisfied with these projects, with 85% recognising considerable impact on the business.

OSET Bikes, a world leader in the design and manufacture of electric bikes, stated:

'[...] membership of the University of Brighton's Green Growth Platform introduced us to the concept of partnering with a range of experts who could really bring rigour to the development of our next wave of products to boost us to the next level in terms of product design, engineering and manufacturing [...] Our company is now working toward the commercialisation of a range of new bikes'. [5.4]

The GGP UoB hub has provided significant opportunities for SMEs to offer complementary know-how and extend innovation. The *Profitnet* programme was found to have a 'substantial' impact on 80% of the participants (Survey-2020). Some 54% of the participants collaborated with another company in the programme to advance their innovation project by engaging in joint R&D projects, sharing technologies, developing new products and services, jointly accessing grants and innovation funding, providing mutual business support and advice, as well as joint business ventures and customer/supplier transactions [5.1].

An average of 3.24 partnerships have developed for each member (Survey-2018). One example is Akro Value Ltd., which supplies flow control valves and water-saving technologies. Its Managing Director stated:

'Profitnet was invaluable and worked rather like a non-exec Board through the sharing of experience, knowledge and ideas in the group. Overall, it was the most comprehensive support we could have hoped for and it provided a boost to the business and through business mentoring and networking with fellow SME's found ways to reduce costs and improve operational efficiency [...] The funding made available via the Green Growth Platform, along with the advice we received, enabled us to bring an innovative new product to market and improve our processes and resource efficiency.' [5.5].

The Co-founder of Zedify, a franchised network of zero-emissions delivery operators, confirmed:

'This peer-to-peer action learning programme has helped us to develop and grow the company into a national network and brand [...] Over the period of Clean Growth UK engagement, the company has grown considerably, now operating in 9 UK cities and with over 100 staff, providing 600,000+ annual deliveries. We raised over £300,000 in investment in 2020 and are recruiting to key positions to support a national franchise roll-out. The company is now operating integrated zero-emission first-mile collections in cities that feed into national carriers including, DPD, Hermes and DHL for national and international services.' [5.6].

The GGP programme developed 15 new modules or courses for HE or FE institutions and between 2014-2020 helped establish 133 student placements and graduate interns [5.3]. Some 60% of SMEs said that the student placements had a substantial impact and 100% claimed the same for graduate interns (Survey-2020) [5.1]. For example, Ambiental Risk Analytics, who provide flood-risk assessment and modelling services, enlisted graduates to help them tackle large flood-mapping projects. The students were, in the words of the Product Manager, 'a huge asset' in ensuring that the flood predictions were accurate [5.7].

4.3 Enabling business skills and financial investment

The SMEs surveyed have also reported on the impact of the programme on their business skills. Some 75% of responses (average across all surveys) acknowledge an impact on their business strategy and planning skills; 71% on marketing and branding skills (Survey-2020); and 74% on measuring and communicating environmental impact (Survey-2020). The

programme also offered support to assess their investment readiness, with 87% of the respondents reported an impact on their business. By the end of December 2020, the SME members had managed to raise GBP2,576,407 as leveraged investment for their companies. Medisort, a clinical waste management company, partnered with the UoB GGP hub on a series of projects and skills-development services; they have commented that: *'This has enabled us to develop and secure investment for a dedicated nappy waste treatment and recovery facility [...] We have been able to take this project to the stage where we now have land secured for development and three potential schemes vying for pole position to work with us [...] The contacts made and disciplines learnt will stay with us forever. Involvement in GGP and Profitnet has helped my business to innovate in many ways [...] welcoming an academic element into the organisation brings thinking processes that would otherwise be absent. It is wonderful to have diverse and thoughtful input to all problem-solving activities. When we started working with UoB we employed 22 people, now we support 59 households by providing good quality work in an essential sector.'* [5.8].

4.4 Improving employment prospects and business bottom-line

The annual surveys demonstrated that through UoB CGUK/GGP hub activity, members created or safeguarded a total of 473 jobs [5.1]. The UoB GGP hub has contributed directly to members' bottom-line. Between 2016 and 2018, amongst SMEs surveyed, average turnover increased by 26% and average profit increased by 23%. An independent survey [5.2] has confirmed areas of excellence provided by the programme, such as business support, university expertise, the professionalism of the services and facilitation of grants for R&D. This evaluation confirmed that GGP/CGUK has helped SMEs in the clean growth sectors to address innovation challenges and implement several innovations involving leadership, staff, internal processes, market channels and – most significantly – in their business strategy and their Open Innovation partnerships [5.2]. The GGP/CGUK programme has received widespread recognition from regional authorities and regional and national coverage for its success in creating innovation partnerships, developing business skills and capacity, and safeguarding or creating jobs [5.9]. GGP was selected as an award-winning business innovation and growth programme by the Environmental Association for Universities and Colleges (EUAC) and won a Green Apple Award for Education and Training [5.10]. In 2021, Clean Growth UK was awarded a further GBP1,376,170 to support its activities. This funding will sustain future opportunities for the UoB programme to continue to enable impact in clean growth businesses.

5. Sources to corroborate the impact

- [5.1] Five annual surveys (2016 - 2020). A report of the raw data available as a PDF.
- [5.2] Ward, D, 2020, GGP Satisfaction Survey: Analysis of qualitative feedback. Issued by Fresh Ambition. All survey results evidenced here are included. PDF available.
- [5.3] Compiled data and reports to evidence membership numbers. Available as a PDF.
- [5.4]. Testimonial from the CEO of OSET bikes confirming the impact of the programme on product development and the wider business.
- [5.5] Testimonial from the Managing Director of Akro-Valve confirming the impact on the business and the development of products to market.
- [5.6] Testimonial from the Co-founder of Zedify confirming the impact on multiple aspects of the company and its direct relation to the expansion of the company.
- [5.7] Testimonial from a Product Manager at Ambient Risk Analytics confirming the ongoing impact of involvement in the network and the student placement scheme.
- [5.8] Testimonial from the Managing Director of Medisort confirming how involvement has improved innovation, enabled project development and the growth of the company.
- [5.9] A full report on all press, recognition and references in sector reports and strategies. This includes features in popular press and business magazines. Available as a PDF.
- [5.10] Green Grown Highly Commended Award for Enterprise & Employability, Environmental Association for Universities, 2015. Available at: www.eauc.org.uk/2015_green_grown_award_highly_commended [Accessed on 18th January 2021]. The Green Apple Award for Education & Training, The Green Organisation, 2015: <https://www.thegreenorganisation.info/> [Accessed on 18th January 2021].