

Institution: Lancaster University

Unit of Assessment: 19, Business and Management Studies

Title of case study: Improving the Performance of Technology Focused SMEs

1. Summary of the impact

The Innovation, Design, Entrepreneurship and Science (IDEAS) programme, worked with 60 'technology focused' small-and-medium sized enterprises to explore how they could be supported to facilitate growth. Workshops conducted at Daresbury Science and Innovation Campus (DSIC) resulted in 55 jobs being created and 10 safeguarded. The programme provided business owners with an understanding of their networks, based on research indicating that business growth can be stimulated by optimising the variety of contacts available to them. The successful application of these concepts, at Daresbury, contributed to the generation of approx. £13.1m of funding for new regional, national and international programmes to support a further 2,900 SMEs.

2. Underpinning research

The IDEAS programme stemmed from longitudinal and collaborative studies into entrepreneurial networks (detailed in Jack et. al 2008 and below). The Institute for Entrepreneurship and Enterprise Development (IEED) specialise in developing and delivering research-led programmes for small-and-medium sized enterprises (SMEs). Their engagement and outreach activity with business informs and enriches the institute's research and facilitates knowledge exchange. The central idea was to get businesses to use reflective skills to develop networks, empowering firms to boost their development and growth. This approach contrasts with the standard array of intellectual property, finance and basic management courses available to high tech SMEs.

IDEAS ran from 1st March 2009 until 30th June 2010. IEED developed the concept of the IDEAS programme and led the partnership. The IEED IDEAS team consisted of Sarah Jack (Professor of Entrepreneurship), Al Mather (former Head of Knowledge Exchange), Helen Fogg (Project Manager) and Dr Danny Soetanto (Research Associate).

Research insight - networks in entrepreneurship:

The IDEAS programme drew on Jack's work on the role of networks in entrepreneurship (2005) and how they are affected by social capital. Her research explores the use and activation of network ties, and challenges Granovetter's approach to 'strong' and 'weak' network ties, as defined by frequency of contact. Jack observes that strong ties may be latent but can nonetheless be bonded by trust and reciprocity, and may therefore be re-activated when the interest between the entrepreneur and the contact is matched. These strong ties, although inactive, can be considered as latent knowledge and resource for the entrepreneur. Networking is then 'a process that takes place over time. It is a dynamic relationship and as a process involves shifting latent contacts to manifest ties' (Jack, 2005:1254). Jack concludes that by using social networks, 'entrepreneurial action can convert 'limited' resources into a 'rich environment'. Therefore, nascent, embryonic and potential entrepreneurs should be aware of the advantages of using and developing appropriate networks' (2005:1255-6).

This research provided insight into the relative usefulness of various types of contacts at different stages of enterprise growth. It questioned the usefulness of artificially created networks through formal business organisations and events, committees, clubs compared to networks with contacts developed through professional trust in industry. The study revealed the following key findings:

- The use of strong ties to co-create 'broad visions of the future' (of new markets/ products) and to develop innovations
- The propensity of entrepreneurs not to cut ties, but rather to transfer them to colleagues
- The practice of bringing strong ties inside the organisation through advisory, managerial or directorial positions.

Application to technology focused SMEs:

The underpinning research suggested that digital or technology-focused SMEs rarely used their available networks or concentrated on areas such as marketing but were instead very R&D focused. This realisation resulted in the delivery of a series of research led workshops (see Section 4) at [DSIC \(now called Sci-Tech Daresbury\)](#). Based in the North West, DSIC is home to over 100 high-tech companies and cutting-edge scientific facilities. In April 2013 it assumed official status as one of the Government's flagship Enterprise Zones, recently receiving a [£10m investment](#). The workshops held at DSIC were designed to increase participants' awareness of their potential networks and their ability to use them effectively (Jack, 2005 and Jack et al 2008) to create sustainable change within their businesses. Findings continue to be published following the workshops, extending the knowledge gained out to other interested academics and businesses (Fogg, 2012; Soetanto and Jack, 2013).

3. References to the research

The research has been published in the following international, peer reviewed articles – in order of relevance:

1. Jack, S. L. (2005) 'The role, use and activation of strong and weak network ties: a qualitative analysis' *Journal of Management Studies*, 42(6): 1233-1260. This paper was awarded a '[Citation of Excellence](#)' award from Emerald Management Reviews and is included in the indicative bibliography for the 'Beyond Networking' workshops.
2. Jack, S., Dodd, S.D. and Anderson, A.R. (2008) 'Change and the development of entrepreneurial networks over time: a processual perspective.' *Entrepreneurship & Regional Development: An International Journal* 20(2): 125-159
3. Anderson, A., Park, J. and Jack, S.L. (2007) 'Entrepreneurial social capital: conceptualising social capital in new high tech firms' *International Small Business Journal* 25(3): 245–272.
4. Soetanto, D. and Jack, S. (2013). 'Business incubators and the networks of technology-based firms', *Journal of Technology Transfer* 38(4): 432-453.
5. Jack, S.L. (2010) 'Approaches to studying networks: implications and outcomes' *Journal of Business Venturing*, 25(1): 120-137.
6. Fogg, H. (2012) 'Tracing the links between absorptive capacity, university knowledge exchange and competitive advantage in SMEs' *Entrepreneurship and Innovation* 13(1): 35-44.

Grants:

IEED led 'IDEAS at Daresbury', £769,829 in total - comprising European Regional Development Fund, Northwest Regional Development Agency and internal matched funding.

Internal Award:

The IDEAS team was awarded the [University of Lancaster Staff Prize](#) in 2010 for their collaborative work within the University and with partner institutions and for translating research outcomes into direct economic impact with regional SMEs.

4. Details of the impact

The IDEAS at Daresbury project supported 60 new technology businesses in the area over a period of 16 months from March 2009. The IDEAS programme exceeded most of the original targets submitted to its stakeholders (the ERDF and the NWDA) including businesses supported (60, original target 40), jobs created (55, target 5) and jobs safeguarded (10, target 15). The IDEAS programme promoted effective knowledge exchange at the interface between SMEs, universities and strategic government-funded science. The programme was delivered through a series of short, highly interactive workshop programmes, master classes, academic mentoring and student projects, resulted in significant improvements in the businesses supported. These drew on four research groups: the business and management schools of Lancaster, Liverpool and Manchester Universities and Imagination Lancaster, a design-led research lab at Lancaster University. This collaboration allowed firms to benefit from the wider networks of the partner institutions.

The IDEAS syllabus:

The syllabus consisted of three programmes, delivered by the project partners including Fogg and Soetanto from IEED. Participants could attend anywhere from one to all three sessions:

- 'Customer-Focused Innovation' (May 2009) – developing a customer focused and innovative approach from conception to market for technology focused SMEs
- 'Competitive Advantage through People and Processes' (November-December 2009) – optimising internal resources to exceed customer expectations and respond to the current business environment
- 'Beyond Networking: Creativity, Collaboration and Growth' (January-February 2010) – provided practical tools to identify and maximise the power of participants' networks.

Each programme consisted of four or five day workshops that highlighted critical issues for small businesses. The Connect Workshop (part of the Beyond Networking programme), for example, was designed to help entrepreneurs 'tap into collaborative groups where they can share business ideas and discuss and review their plans' (Fogg, 2010, [Beyond Networking](#)). The Director of Attido Mobile (formerly Ravensoft) summed up his experience, stating that the workshops provide *'Academic advice on areas of business that we as engineers have limited experience of'*.

They delivered an integrated learning model, built on the concepts of networking, discussed in Section 2. These research insights provided a basis for understanding important elements of networking and its potential contribution to innovation and business growth. In the sessions, business owners were helped to understand how to develop and exploit their networks more effectively to create opportunities, innovate and explore new markets and products. The Director of Collabor8 Online fed back that *'I knew about networks but I didn't recognise 'nets' ... and this notion of heterogeneous and remote and not remote and diverse, it was a very useful exercise to get a good understanding of exactly what a network is.'*

Participant entrepreneurs were provided with tools for visualising and reflecting on their networks and were encouraged to look at the benefits of using specific contacts in problem solving, innovation and product development. Through an interactive, hands-on mapping exercise delegates got a better picture of their network, including strength of ties measured not just by frequency of contact but also by the trust/closeness of relationships and by their length. The Director of Microfold fed back that it was *'useful to write things down and draw the nets on paper: normally I would have them in my head but you can't always connect things immediately, so once you have the pictures in front of you, it's more obvious.'* This work was developed further into bespoke reports for the participant companies, based on their assessment of various types of contacts. These included contacts who were 'core', 'who could help with new ideas', 'could help to test new ideas' and 'could help bring ideas to market'.

The CEO of SimX conveyed that it helped him to expand his company, *'SimX was two people when we started on the IDEAS programme, we've moved site and expanding so it's been a rapid change for us and the idea of being able to take a step back and being able to think about that, plan it, use some of the more academic techniques has really changed me.'* He provided a [video clip](#) on the LUMS website of his experience on the programme.

On 12th March 2010 all the project partners held an ESRC Festival of Social Sciences funded Workshop titled 'Entrepreneurial Networks: impact and business growth' to disseminate initial findings from the project.

Resulting impact of IDEAS programme:

'IDEAS is a wonderful example of knowledge exchange in action. We want to see a culture that enables, celebrates and rewards talent and innovation. IDEAS shows how this can be done.' CEO, Technology Strategy Board. Following on from the success of this initial programme with the technology industry in the North West, the IEED has been awarded funding to vastly expand on the work and insights from IDEAS at a regional, national and international level.

Regional:

An external evaluation by EKOS Ltd of Lancaster's ERDF projects, including IDEAS, in March 2012 showed that for 'every £1 invested (in the projects), £15.80 is generated in the Northwest economy.' This return on investment and impact, led to a successful application for a further ERDF-funded project led by LUMS: the £3.8m [Innovation for Growth \(IFG\) project](#), embedding innovation into the processes and practices of SMEs across the North West of England. So far the project has worked with 320 SMEs and safeguarded 300 jobs and created 180 new jobs.

National:

The theoretical and practical insights of IDEAS fed into a new £5.1m project, '[The London Creative and Digital Fusion](#)', part-financed by the ERDF and led by IEED, to support the convergence and network development of London-based SMEs in the creative and digital industries. So far the project has worked with 460 SMEs with a target of 526 SMEs by project end, to safeguard 150 jobs and create another 150 new jobs.

International:

On the strength of the IDEAS project, LUMS was invited to become a partner in a £160k [INTERREG IVC EU-funded project](#), 'Making Knowledge Work', to share best practice in knowledge exchange across Europe. It sought to exploit ideas and foster smart, sustainable growth by exchanging experiences on how regions support the process of commercialising ideas.

'[The Lancaster China Catalyst Programme](#)' (a cross-faculty project) aims to facilitate the growth of UK technology focused SMEs to grow their commercial activities in China, to create 240 new jobs and boost the domestic economy by £40m. In May 2013 it was announced that Lancaster would be awarded £5.1m primarily from the [HEFCE Catalyst Fund](#) and the University, Lancashire County Council and Guangdong Provincial Office for Science & Technology for the research and innovation programme, due to start in January 2014. It is anticipated that 400 high-growth UK SMEs will participate in the programme, enabling them to develop their leadership, innovative and collaborative capacity to support long-term UK-China collaboration.

5. Sources to corroborate the impactReports:

1. An 'Exit Report', submitted following the final claim to the NWDA, corroborates the project outputs, including the number of companies supported, jobs created and increases in GVA. This document is available to inspect upon request.
2. EKOS Ltd – Mid Term Evaluation of Lancaster's ERDF Projects (March 2012) – available upon request.
3. The EU project '[Making Knowledge Work](#)' used the IDEAS programme as a case study of good practice and included it on the project website.

Key Users/Beneficiaries:

4. Feedback from the participants, including the examples in Section 4, was collected throughout the IDEAS programme, substantiating the effects of the research and methods. The [CEO of the Technology Strategy Board](#), for example, is quoted on the LUMS website.
5. IDEAS outputs are evidenced in signed documents from the companies concerned. These documents are available for inspection upon request.

External Awards:

6. The IDEAS project contributed to IEED being awarded the inaugural [ESRC 'Celebrating Impact' Prize](#), on 14th May 2013, in recognition of its 'Outstanding Impact in Business'.
7. The IDEAS at Daresbury project was shortlisted for the [Impact Awards](#) organised by PraxisUnico in 2010. For details, see related news story on the LUMS website.