

Institution: Robert Gordon University
Unit of Assessment: 34
Title of case study: Collaborative Design Thinking for Business Innovation

1. Summary of the impact (indicative maximum 100 words)

The Centre for Design and Innovation (c4di) was a Knowledge Exchange project, which developed and explored new methods for bringing about alternative perspectives on how companies can innovate systems, processes, products and services. The Case Study is focused on changes in the culture and thinking within SMEs, resulting from design-led interventions supported by c4di. The project developed new critical approaches and methods of working with SMEs to support innovation through the application of visual methods and facilitated experiential workshops. The project also resulted in significant policy development within government funded innovation support programmes.

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2. Underpinning research (indicative maximum 500 words)

This case study is based on research that aimed to investigate how best to support innovation through the application of design, responding to the recommendations in ‘The Cox Review of Creativity in Business’ (2005). MacDonald contributed to this report in his role as a Director of the Design Council, contributing case study material exemplifying the Lighthouse in Glasgow **[R1]**.

In 2006, MacDonald and Malins were part of a Scottish network entitled ‘Design Innovation Scotland’ (DIS) funded and led by Scottish Enterprise, which involved a consortium of HEIs and business support organisations. Gray’s School of Art developed the Prospectus for DIS. The network also referenced key international developments in design innovation **[R2]**, such as Denmark’s Mindlab and sought to influence thinking in the field through a series of six White Papers (series editor MacDonald)**[R3]** commissioning Thackara, Kane, Valtonen, Inns, Thomson and Scott. This helped shape the initial Innovation Centre concept, which aimed to change the nature of innovation support from a passive delivery model to an active engagement model **[R4]**. PhD projects **[R5]** supervised by Malins and completed in 2007 provided additional theoretical underpinning for the Innovation Centre development.

The research provided the theoretical framework to inform the approach taken with SMEs. Similar projects such as the Design Council’s Designing Demand Programme and Sligo Institute’s Centre for Design Innovation (Ireland) were visited, and existing programmes for business support were studied. This initial investigation led to the development of an innovation workshop programme for SMEs based on an experiential approach with the aim of embedding behavioural change within businesses. Design consultancies such as IDEO and Engine also provided further justification for this approach.

In 2007 Malins initiated an application to establish a centre for Design & Innovation, and secured funding from the European Regional Development Fund (£330,190) and matched by an additional application to the Scottish Government’s SEEKIT Fund (£450,871) in 2008. C4di was established in 2008 with the aim of working with SMEs to improve their innovation capacity based on the application of design thinking. Initial partners included representatives from Scottish Enterprise, Glasgow School of Art, Skills Development Scotland, Aberdeen City Council and Interface. Subsequently Glasgow School of Art established their own Centre for Design Innovation in Forres based on the c4di model.

The methodology of the centre was based on ‘serious-play’, using visual and collaborative methods and lo-fidelity prototyping, to encourage a creative and supportive environment for business innovation. This research led to the development of visual tools to establish core values, support ideation and visualise new business models **[R6]**. Workshops involving individuals from

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different companies identified key business challenges, which were then mapped against possible design solutions.

Contributing researchers to this Case Study from Gray's School of Art are: Malins - Professor of Design; MacDonald – Former Head of School, retired 2008; Fairburn - Lecturer in Product Design.

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3. References to the research (indicative maximum of six references)

[R1] Macdonald S., 'Creative Industries or Industrial Creativity; the Battle for a Creative Nation', in: Hassan G. & Warhurst C. eds. (2002), *Anatomy of the New Scotland; Power Influence and Change*, Edinburgh, Mainstream Publishing ISBN 1-84018-630-5.

[R2] MacDonald S. Ed. (2004), *Design Issues in Europe Today*, Barcelona, Bureau of European Design Associations, ISBN 1-905061-04-5.

[R3] MacDonald S. ed. (2008), *White Papers 1-6*, Robert Gordon University/Scottish Enterprise, Aberdeen.

[R4] MacDonald, S., (2008), *International DMI Education Conference, Design Thinking: New Challenges for Designers, Managers and Organizations*, 14 – 15 April 2008, ESSEC Business School, Cergy-Pointoise, France. In Conference Proceedings: 'Design Thinking and Design Innovation Scotland'.

[R5] Cumming, D., (2007) 'An Investigation into the Communication Exchange Between the Small Business Client and Graphic Designer'.

[R6] Malins, J., Watt, S., Liapis, A., MacKillop, C., (2007), 'Tools and Technology to Support Creativity in Virtual Teams'. In: *Higher Creativity for Virtual Teams: Developing Platforms for Co-Creation*, Chapter 11, p224-245. Ed. by MacGregor, S. and Torres-Coronas, T., Published by Information Science Reference ISBN 978-59904-129-2.

4. Details of the impact (indicative maximum 750 words)
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C4di delivered experiential workshops, and undertook innovation audits for SMEs, and pioneered new visual methods for engaging with companies and their stakeholders. Collaborating with Scottish Enterprise (SE), c4di contributed to innovation support policy development, **[I1]**, which led to a significant shift in SE's business support strategy leading directly to funding for programmes of innovation workshops across Scotland **[I6]**. The underpinning research resulted in a symbiotic relationship between SMEs and researchers. This impacted on SME attitudes and behaviours leading to the securing of existing jobs, creation of new jobs, and increasing company turnover.

Over 300 companies across all of the Scottish Government's priority sectors were assisted. Examples included MacPhie Of Glenbervie, and The Store (Food & Drink); Nova Biotics (Biotechnology); Trittech **[I2]**, Red Spider, Grampian Fasteners and AGR Subsea (Energy); Freelance World, (Finance) and Tinto Architecture (Creative Industries).

The project provided a model for knowledge exchange demonstrating how to avoid conflicts of interest between HEIs and commercial design professionals **[I3]**. An example is provided by workshops undertaken with Freelance World, a financial services company, which planned to re-position itself as a total business support service extending its standard accounting service to include business advice and support. C4di facilitated scoping workshops using a visual framework to describe the existing Freelance World business model and explored how incremental and radical innovations could be created. Four student interns sourced from the Robert Gordon University used various prototypes of the business model to create hypotheses for subsequent project development including developing the company's social media strategy. Feedback from the company Managing Director illustrates the approach taken:

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“No linear lists or left brain tasks. This was a very visual experience. Engage right brain! It made our heads hurt, but we got some real breakthroughs and an outcome that none of us could have foreseen”.

The company MotoGF evidences the type of impact brought about by the project. This company which provides specialist tools to the oil & gas industry, aimed to set up a dedicated service for motorsport enthusiasts. The company, with 26 staff, had identified a number of challenges in developing the market for its products. C4di facilitated a ‘problem solving by design’ workshop involving student members of TAU motor racing team from the University of Aberdeen. Visual methods were used to determine the core values of the company. Additionally, a short ethnographic study involving mechanics was undertaken to support c4di’s design audit which recommended that MotoGF review the company’s existing products, services, branding and communications against its core values; adopt a communications strategy which is part promotional and part informational; restructure the company website hierarchy making social media feed the most important part of the homepage; develop a mobile-based ordering and information system; and offer student mechanics discounted tool sets on an HP basis. Since working with c4di the company have increased innovation investment by £30,000; have 13 new or improved products/services or processes; and have created 3 new jobs. They have also undergone a complete re-branding, and have transformed internal innovation and staff training procedures.

A further example is provided by Easterbrook Hall, which has developed a significant reputation as a wedding/conference/leisure service provider, employing 80 staff. The company aspired to develop the conference facility revenue stream and exploit the potential for business tourism in the region (Dumfries & Galloway). C4di undertook an evaluation of their brand to identify key unique selling points for the venue. Evaluation tools developed by c4di were employed to establish the core values of the venue in order to define the brand. Subsequently, 1 new fulltime and 6 additional seasonal staff were employed. The company turnover increased by £70,000 as a result of new/improved products, services and processes including new business packages, new wedding packages, a conference bureau partnership, partnering with a local radio station to run joint themed events, and a charity product offering. **[17]**

The project achieved knowledge exchange through its workshop programmes and direct contact with SMEs, through articles written for the press including business journals; a series of business lectures and networking events funded by a grant awarded by the Design Council; papers given at conferences and journal articles; and case study information provided to other projects **[14]**. C4di has been quoted as a significant example of Knowledge Exchange for innovation **[15]**.

The project exceeded the targets set by the funders, for example the target for ‘increased turnover achieved’ was £1.5 million over 3 years, but following evaluation it was calculated to have achieved £2.36 million.

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5. Sources to corroborate the impact (indicative maximum of 10 references)

[11] 2009 Design support for business in the Scottish Enterprise Region: Stakeholder Workshop Final Report’, Gavin Cawood and Gisele Raulik-Murphy of Design Wales on behalf of Scottish Enterprise

[12] 9.05.10, C4di ‘Innovation by Design’ workshop with Trittech International Ltd led to the following publicity, www.lubricants.co.uk/20736 - ‘Sub Sea Experts release creativity in Aberdeen’

[13] 2011 ‘Innovate the business model’, Working with Universities by Jolly, A., Part 4, page124, Crimson Publishing, ISBN 9781854586872

[14] SEE Bulletin Issue 5-January 2012, Case Studies p14, Available at www.seeproject.org

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[15] 2012 *European Commission Guidebook Series, The Smart Guide to Service Innovation: How to capitalise on service innovation for regional structural change and industrial modernisation*, Section 3.2.1 *Design Centres pp 29-30*, Belgium, ISBN 978-92-79-26011-7

[16] Project Innovation Manager, Scottish Enterprise. Email confirming that c4di helped bring about a policy development change within SE leading to the use of design led workshops to support innovation within SMEs

[17] Venue Manager, Easterbrook Hall. Email corroborating the effectiveness of the approach used by c4di to assist with developing an innovation culture within their organisation