

De Montfort University : 34 - Art and Design: History, Practice and Theory

REF 2014 : Impact case studies (REF3b)

Design Supporting Business

Identifier: 3

Corroborating statements

Contact identifier: 5	Name: XXXXXXXX	Job title: Director
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Organisation: XXXXXXXX

Aspects of the case study the contact can corroborate:

Revenue generated from sales; number of jobs secured/created.

Contact identifier: 2	Name: XXXXXXXX	Job title: Managing director
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Organisation: XXXXXXXX

Aspects of the case study the contact can corroborate:

That the product Walkodile has won a number of design awards; the amount of revenue generated from sales of the product; the number of jobs created/jobs safeguarded.

Contact identifier: 4	Name: XXXXXXXX	Job title: Director
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Organisation: XXXXXXXXXXXXX

Aspects of the case study the contact can corroborate:

Revenue generated from sales/number of jobs secured

Contact identifier: 1	Name: XXXXXXXX	Job title: Managing director
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Organisation: XXXXXXXXXXX

Aspects of the case study the contact can corroborate:

Revenue generated/jobs secured/created.

Contact identifier: 3	Name: XXXXXXXXXXX	Job title: Managing Director
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Organisation: XXXXXXXXXXX

Aspects of the case study the contact can corroborate:

Revenue generated from sales/number of jobs secured/safeguarded

Institution: De Montfort University
Unit of Assessment: 34 – Art and Design: History, Practice and Theory
Title of case study: Design Supporting Business
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>The Design Unit's unique approach to product design research has had direct, tangible and transformative impacts upon the private companies involved. Whilst the Design Unit routinely provides product design support for companies of all shapes and sizes, this case study focuses solely upon the transformational impact this research has had on a suite of SMEs – the evidence provided in this case study clearly shows that in addition to direct economic impact to the companies, the research has both secured and created jobs, and allowed these companies to compete effectively in an international market place. Overall, this case study provides evidence of £13 million of increased revenue generated, 101 jobs safeguarded and 37 jobs created over the census period, spread across 13 SMEs. Extrapolating these results, the impacts could be as much as £46 million of increased revenue generated, 356 jobs safeguarded and 130 jobs created.</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>The research underpinning this case study has all been undertaken by Professor Peter Ford and his research team at De Montfort University. The research commenced after Ford joined DMU in 1991. Ford is currently Head of Research in the School of Design. Other researchers who have been involved with the delivery of these programmes are David Terris, Lee Cottrell, Mike Henville, Philippa Davies and David Tonkinson.</p> <p>From the beginning of his time at DMU, Ford undertook a series of design research projects for a range of local, national and international commercial partners, which led to him developing a novel design and business support model which combines innovative design research with a formal “engaged scholarship” model (drawn from the social sciences) with design research underpinning the intensive period of innovation at the start of the projects and the researcher maintaining contact with the project throughout its development, to facilitate ongoing knowledge exchange, and to broker knowledge-based relationships across the supply chain.</p> <p>In 2003, EMDA (East Midlands Development Agency) provided feasibility funding to Ford to determine whether there were a sufficient number of SMEs in the region who would benefit from his novel “structured design and business support” model to develop new products for their businesses. The feasibility study was successful and led EMDA to award Ford £425,000 to run the “Improving Business by Design” (IBD) project, which allowed more projects to be developed and allowed Ford to further evolve his model. Match funding from various sources (DMU's HEIF allocation, business donations etc.) took the total project budget to ca. £1,000,000.</p> <p>The IBD project identified 180 SMEs who could benefit from this novel business support approach, from which 54 viable projects were identified and, from these 54, 16 products were developed for the market. The IBD project brought together the SMEs in need of design support, other aspects of the local creative economy (to deliver the design interventions) and local manufacturing capability to ensure a valid supply chain was created. Ford's team mediated the process, established the project briefs and undertook the preliminary design-based research, monitored progress and acted as a knowledge broker to ensure delivery through to manufacture. This novel and pro-active business support model also demonstrated the need for capital investment in order to create a viable long-term business proposition for the SME.</p> <p>Following on from the success of the IBD programme, Ford was approached by the East Midland Manufacturing Advisory Service (MAS) to design and implement an East Midland MAS Design Pilot Scheme as an alternative for SME design support in the East Midlands. Ford was awarded £350,000 (£250,000 from the MAS and £100,000 from the private sector) to design and deliver this initiative, which commenced in June 2008 and was completed by September 2009. 60 SMEs were approached with 13 projects selected for development through to manufacture.</p>

Impact case study (REF3b)

In January 2009, Ford secured additional funding from the European Regional Development Fund (ERDF) to take this research even further to design and deliver the **Regional SME Design Support Scheme**, worth £1,125,000 (£450,000 ERDF, £675,000 HEIF and private sector). From 2009 to December 2012, over 100 SMEs have been engaged with about 20 key projects being developed through to manufacture.

In addition to and in parallel with the three design support research schemes, Ford and the Design Unit have been engaged in a number of design research projects for large enterprises (LEs), including: packaging closure research for XXXXXX; research into circular economy impacts on product design for XXXXXX; victim tracking units for XXXXXX; and scientific equipment for XXXXXXXX Plc. These contracts total £450,000 in the census period.

This breadth of activity has enabled research observations to be made on the differences in the “engaged scholarship” model between SMEs and LEs and with different funding models and support and how consultants (the creative sector) can best be engaged in such a model.

The key finding from this range of projects is the need to provide an “integrator” (i.e. engaged scholar) from the start of the project, who has an overview of the project and understands the detail about why the product has been designed in a given way but who also has the autonomy and “clout” to ensure that the project is correctly integrated along the supply chain. This integrator needs to have in-depth knowledge of every stage of the process and a good awareness of the state of the art to provide innovative solutions to unanticipated problems; they need to “translate across disciplines” and minimise uncertainty, thereby driving innovation from the start of the project. In these projects, this role was played by DMU design researchers.

Analysis of 181 individual projects across all these programmes (which all tested different applications/modifications of the business support model) shows that 80% of the projects making use of this integrator role succeeded, whereas 90% of the projects who chose not to take up this support failed. Another key finding was that the need for innovation at the start of the project also impacts upon sustainability issues because the embedded Carbon within a product is defined during the initial innovation stage. However, for sustainability issues to be fully addressed, the entire supply chain needs to have a mature approach to sustainability, which if achieved can result in cost effective sustainable product design.

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

- *The Fuzzy Front End of Product Design Projects: How Universities can Manage Knowledge Transfer and Creation*. Peter Ford and James Woudhuysen. Leading Innovation Through Design 2012. International Design Management Research Conference August 8-9 2012 Boston M.A. USA
- *Managing Effective Industry Knowledge Transfer Within a Higher Education Context*. Peter Ford and Philippa Davies. International Conference on Engineering and Product Design Education. 6-7 September 2012. Artesis University College, Antwerp, Belgium
- Ford P and Radlovic PFM (2012), Design, Sustainability and the Supply Chain: Design Underpinning Sustainability, *The International Journal of Sustainability Policy and Practice*, 8(1) pp. 233-246

4. Details of the impact (indicative maximum 750 words)

THE IBD SCHEME: For the purposes of this exercise, at the end of July 2013 we followed up with six of the 16 companies who took a product to market. They reported the following impacts since January 2008 (impacts before this date can be seen in the end of project report):

XXXXXXXXXX reported that sales of the product in the census period have generated **£3 million** of revenue, **securing 6 jobs and creating 1 job**;

XXXXXXXXXX reported that sales of the product in the census period have generated **£900,000** of revenue, **securing 14 jobs and creating 3 jobs**;

XXXXXXXXXXXXXX reported that sales of the product in the census period have generated **£106,000**

Impact case study (REF3b)

of revenue;

XXXXXXXX reported that sales of the product in the census period have generated **£400,000** of revenue, **securing 2 jobs and created 2 jobs**;

XXXXXXXX reported 4992 products sold in the census period generating **£1,496,600** of revenue, **creating and securing 12 jobs**. In addition it placed the company in a healthy financial position to be able to sell it to an American corporation.

THE MAS DESIGN PILOT SCHEME: This scheme began in June 2009. For the purposes of this exercise, at the end of July 2013 we followed up with 4 of the 13 companies who took a product to market. They reported the following impacts:

XXXXXXXXXXXXXXXXXXXX reported that sales of the product have generated **£75,000** of revenue, **securing 2 jobs and creating 3 jobs**;

XXXXXXXX reported that sales of the product have generated **£122,771** of revenue, **securing 1**

job; Guidance reported that sales of the product have generated **£5 million** of revenue, **securing 10 jobs and creating a further 5 jobs**;

XXXXXXXXXXXXXXXXXXXX reported that sales of the product have generated **£250,000** of revenue, **securing 3 jobs**.

THE ERDF SME DESIGN SUPPORT SCHEME: This scheme began in June 2009. For the purposes of this exercise, at the end of July 2013 we followed up with 3 of the 25 companies who took a product to market. They reported the following impacts:

XXXXXXXXXXXX reported that sales of the product have generated **£100,000** of revenue, **securing 5 jobs and creating 1 job**;

reported that sales of the product have generated **£44,000** of revenue, **securing 1 job and creating 1 job**;

XXXX reported that sales of the product have generated **£100,000** of revenue **and created 2 jobs**.

PRIVATE SECTOR COMMISSION: Following a feature on the BBCs 'Innovation Nation' about his approach to design innovation, Ford was approached by XXXXXX Ltd. to help them to produce their idea, the XXXXXX, which has had the following impacts: Winner of Gold Medal for Outstanding Achievement in Innovation Award (2008) and John Logie Baird Award for Entrepreneurial Spirit (2008), XXXXXX (inventor of the XXXXXX) was awarded the MBE in 2011 for Services to Child Safety. Revenue generated in census period - **£1 million – 4 jobs created, 50 jobs safeguarded**.

DESIGN GROUPS: It should be noted that during this census period £350,000 of the secured funding has been used to engage the creative sector (e.g. design consultants) with much of the individual project work, thus having beneficial financial impacts on the design community. For the purposes of this exercise, at the end of July 2013 we followed up with 6 of the 13 companies who worked with us. They reported the following impacts:

XXXXXXXXXXXX have benefitted from **£46,000** of the secured funding, **4 jobs safeguarded**;

XXX have benefitted from **£34,000** of the secured funding;

XXXXXXXX benefitted from **£60,000** of the secured funding, **4 jobs safeguarded**;

XXXXXXXXXXXX have benefitted from **£36,000** of the secured funding;

XXXXXXXXXX has benefitted from **£46,000** of the secured funding, **1 job safeguarded**;

XXXXXXXXXXXX has benefitted from over **£50,000** of the secured funding, **1 job safeguarded**.

Overall, this shows transformational impact – nearly **£13 million** of increased revenue generated, **101 jobs** safeguarded and **37 jobs created** over the census period, spread across 13 SMEs.

Extrapolating these results over the 46 products which we know got to market across the three schemes, this could in reality be as much as **£46 million** of increased revenue generated, **356 jobs** safeguarded and **130 jobs created**.

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

All the SMEs we approached to verify the impact of our research were happy to provide a testimonial confirming the impact of our work. We did not approach the other 33 companies.

These testimonials can be made available upon request and confirm the numbers cited above.

For these testimonials, we asked the companies to confirm revenue, jobs created and jobs secured. However, some of the companies volunteered a fuller story about the impact of the research on their company. The following represent a selection of these other comments:

XXXXXX: “As you know, the IBD project led to a completely different way of designing and assembling our products, which in turn required that we invest in a large format CNC router to manufacture these new designs. Being able to improve the quality of the manufacture of our products and their cost effectiveness has helped to secure and grow our core business in the asbestos and nuclear sectors. Quite simply without this new design approach and without investing in the CNC equipment, XXXXXX would have ceased to trade and therefore exist.”

XXXXXX: “XXXXXX has won a clutch of other prestigious accolades including several design awards, both in the UK and Europe. These achievements could not have happened were it not for the great job you and your team did for us.”

and

“As you can see from our website (<http://www.XXXXXXX.com/>), the Walkodile brand continues to grow and as a company we now sell a wide range of other children’s educational resources – soon to be added to, with your continued support, by the ‘Stretchies’ phoneme, language learning system – all stemming from the initial design of the XXXXXXXX Classic system, which is now selling in 12 countries.”

XXXXXXXXXX: “The device is CE marked and has FDA approval for USA sales. To date, our first orders total a few thousand Melio Leg bags valued at around £75K, which have been sold into 3 countries, Saudi Arabia, Australia and Hong Kong.”

XXXXXX: “The impact of this work has been extremely positive and has been a contributory factor to the company’s growth at home and abroad.”