Design-Driven Innovation: Why it Matters for SME Competitiveness

How does design-driven innovation add value for SMEs?

How can the design process be used as a tool for innovation?

How well is design-driven innovation embraced?

How can Ireland develop its SME's design-driven innovation capability?

Northern & Western Regional Assembly

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European Commission

Introduction

The Northern and Western Regional Assembly has been funded by the European Commission to develop awareness and raise the levels of understanding of the benefits of applying design-driven innovation in Ireland.

The report sets out to illustrate the potential added-value to the Irish economy by adding another dimension to its eco-system of innovation supports and while also bringing this innovation process to the attention of SMEs.

The publication of this report coincides with Irish Design (ID) 2015, a year-long Government backed initiative exploring and promoting Irish design in all forms. The initiative aims to promote Ireland as a hub for design excellence and encourage investment in design as a key driver of competitiveness and innovation. ID 2015 is a key component of the Government's Action Plan for Jobs.

This report will contribute to this debate and brings forward a bank of evidence and new research to support the need for a greater application of design-driven innovation amongst Ireland's SMEs to develop their competitiveness and growth potential.

Key Findings

01
The Design Process is Now Widely Recognised as a Tool of Innovation.

02
Investment in Design-Driven Innovation Processes by Governments and Firms Across Europe and the World is Yielding Increased Growth, Employment and Competitiveness for SMEs.

03
An Opportunity Exists in Ireland to Change Mindsets about What it Means to Apply Design-Thinking Principles to Business Development and Innovation.

04
Lessons from Other Countries Indicate that Supports to Irish SMEs could be Enhanced by the Addition of Design-Driven Support Programmes.

05
Some SMEs in Ireland are Successfully Applying the Design-Driven Approach to Grow, Export and Evolve.

06
Hidden Design is a Key Factor when Considering Policy and Supports for Design-Driven Innovation.

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“Design – which is most commonly understood as a product of a certain quality and the process of crafting theses products is now internationally recognised as part of a knowledge-intensive field characterised by innovation, multidisciplinary and strategic processes”

Danish Enterprise and Construction Authority (2011). The Vision of the Danish Design 2020 Committee. P.11.

Objective:
Explain the global shift towards
design-driven innovation practices

The Design Process

Never before has innovation been so important to the Irish economy. It is well established that innovation is a key driver of organisational competitive advantage and SMEs are a crucial part of the national innovation system. The task of finding new and sustainable sources of growth requires our innovation effort to be more disciplined and productive than ever before.

Being successful at innovation is not accidental. Rigour in pursuing opportunities that match significant customer need and developing related products or services quickly, at the right price and fit for purpose is essential.

The ability to continuously transform knowledge and ideas into new products, services, processes, and systems for the benefit of the firm and its stakeholders or to possess 'innovation capability' is a key requisite for business success.

Building an innovative capability requires a framework with vision and strategy supported by knowledge and competence and the associated organisational structures, managerial systems, processes and mindset (see chapter 3 for further details). The application of a design-driven approach fosters organisational learning through the integration of design-thinking. It has been proven that when businesses harness designer-like thinking across the entire business model they cultivate dynamic cultures, more desirable products and services, faster growth and passionate customers. It is now time for Ireland to embrace this approach.

Design-driven innovation has become increasing recognised and supported by a growing number of countries (e.g. Australia, Belgium, Czech Republic, Denmark, Estonia, Finland, Hong Kong, Korea, New Zealand, Norway, Sweden, UK) and more recently the European Commission as a key enabler of international business success and as a vital source of competitive advantage.

Programmes and strategies have been put in place internationally to develop competitive advantage, by export-orientated economies and as key enablers of innovation strategies.

In October 2010, the European Commission included design as a priority in the new Europe 2020 Flagship Strategy 'Innovation Union' stating that: "Although some European countries are world leaders in design, others lack a robust design infrastructure and design capability in companies and engineering schools. This systemic gap has largely gone unnoticed but must now be tackled."[1]

Ireland needs to recognise that design should no longer be simply understood in isolation as the process of developing a product or relate the term narrowly to items of a certain quality. Rather the term 'design' should also be understood and associated with strategic management techniques and processes which have become a significant tool of innovation around the world. While the application of design in this strategic way remains less developed in Ireland there is a real opportunity for Ireland's SMEs and policy makers to now learn from and build upon the success of others and by making design central to business and innovation strategies.

1
European Commission (2010). Europe 2020 Flagship Initiative Innovation Union, COM(2010)546, Brussels, P.183.

In 2009, the European Commission found that the "awareness raising and design promotion"[2] (as a tool of innovation) was deemed the most useful public initiative to support design. The report is funded by the Commission through the European Design Innovation Initiative in order to raise awareness and understanding in Ireland.

"Design in America isn't about form but innovation, in the guise of new products and services."[3]

The authors of this report have focused on the potential benefits of targeting supports and raising awareness among Ireland's SMEs from the greater application of a strategic approach to design.[4]

The importance of having a healthy exporting indigenous SME sector cannot be underestimated. Indigenous firms tend to be head-quartered in Ireland and tend to keep high level functions in the country. Thus, these companies require a broad range of high-level skills and services to support their businesses. The arguments for a strong indigenous business sector are compelling however the key challenge is how to speed up their internationalisation process and enhance their innovative capabilities and capacities.

Ireland has undertaken a sustained and concentrated approach to developing the innovation performance of the enterprise sector (and the strengthening of the overall innovation ecosystem) in particular over the last 15 years. Enterprise Ireland, the government agency responsible for the development and growth of Irish enterprises on global markets, has been to the forefront of this programme of investment with supports provided across a range of areas such as;

- In-Company Supports (R&D Fund, HPSU R&D Equity Funds);
- Collaborative Supports (Innovation Partnerships, Innovation Vouchers, Technology Centres Programme, New Frontiers Programme, Technology Gateways and International Collaboration Funding); and
- Realising Commercial Potential (Campus Incubation Centres, Commercialisation Fund and Technology Transfer Strengthening Initiatives).

Other supports are provided by Local Enterprise Offices, which provide a range of complementary initiatives to support people who want to start up or grow a business.

The authors have not evaluated the benefits and impact of these measures (and others across the innovation support agencies) but rather have highlighted the potential additional benefits of the introduction of a complementary approach focused on encouraging design-driven innovation in Irish firms. Design-driven innovation should not be viewed in isolation as a solution or 'silver-bullet' for the domestic and global challenges facing our enterprise development, but instead should be considered a further tool in the innovation ecosystem.

A key consideration also is the need to recognise hidden design [5], i.e. the in-house design that occurs outside of the design speciality sector. For example among European countries, the United Kingdom has the largest specialty design sector in gross value added terms, according to structural business statistics [6] followed by Italy, Germany, France and Sweden. But this is clearly not the sole sector that produces design outputs as its main product. The engineering and architectural sector (NACE Rev2: 71.1) is approximately ten times the size of the design specialty sector and in this category, Germany is the country with the largest engineering and architectural sector in value added terms. [7]

Further insights from research conducted from an informal survey-based consultation with the international design community by the OECD [8] identified how design as a tool of innovation is viewed by practitioners:

Design as a User-Centred, Creative Development Activity Driving Innovation: This highlights the role of design integrating the development and implementation of innovations. This represents an inversion of the linear model of innovation, where usage considerations drive creative efforts to ensure the implementation of ideas as potentially radical innovations.

2
European Commission (2009). Results of the Public Consultation on Design as a driver of user-centred innovation, Brussels, P.47.

3
Nussbaum, B. (2004). The Power of Design. Business Week. January 5, 2005.

4
Reflecting the aims of the Competitiveness and Innovation Framework 2007-2013 which focuses its supports on European SMEs.5
Galindo-Reuda, F. and Millot F. (2015). "Measuring Design and its Role in Innovation", OCED Science, Technology and Industry Working Papers, 2015, OECD Publishing, P.11.

6
Eurostat. Annual detailed enterprise statistics for services (NACE Rev. 2). Extracted February 2014.

7
Ibid

8
Galindo-Reuda, F. and Millot F. (2015). "Measuring Design and its Role in Innovation", OCED Science, Technology and Industry Working Papers, 2015, OECD Publishing, P.8.

Design as an Organisation or Business Capability: Respondents placed an emphasis on the skills resources and strategies required for innovation. Ultimately this brings together concepts of design as a set of skills, in-house or outsourced, and as enabling efficiency in production and use in strategic decision making. The implication is the integration of design into core business operations.

Design as a Link between the Innovation Activity of the Firm and the Market: This dimension galvanizes the role of design described as a key activity in the preparation of product and process innovations, and in efforts to modify the appearance and perception of existing goods and services.

Measuring the Level of Design Activity – the Case of Denmark

The report uses these dimensions to highlight the approach taken by Denmark in their application of supports to enhance design-driven innovation and the development of their understanding of the level of design activity (design ladder). Being one of the first countries in the world to utilise design strategically in their innovation system warrants further review.

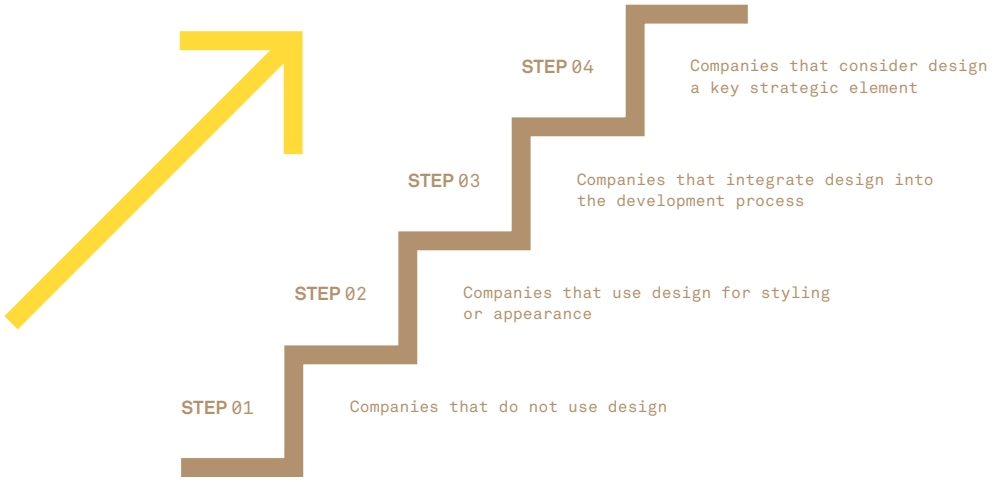
Evidence from Denmark[9] shows that their SMEs are innovative (in making product, process and organizational innovations), but the innovations mainly takes the form of incremental changes within low tech industries. Low or medium R&D-intensity does not, however, mean that the production is not knowledge-intensive. In fact, production in many of the industries characterizing Denmark's so-called low and medium-tech production is based upon extensive knowledge inputs related to a high degree of change and flexibility in firms' use of resources. This includes a rapid diffusion of new technologies and frequent incremental product innovation that combines a high level of competence in industrial design with advanced organizational techniques and marketing methods. The innovations often reflect interaction between skilled labour, engineers, and marketing people.

Ladder models of design propose that there is a range of roles of design that are stepped from the bottom-up from no design use to more integrated and sophisticated applications of design by firms.

9
The Danish Model and the Globalizing Learning Economy, Bengt-Åke Lundvall, March 2009.

The Design Ladder was developed by the Danish Design Centre in 2003 as a tool to measure the level of design activity in Danish businesses. The Ladder, used as a framework for a survey, was the first step in developing a method to assess the economic benefits of design in Denmark. The Design Ladder also serves as a model for explaining to companies that design is more than merely product styling; meaning that companies can reflect on their own way to incorporate design into their business know-how.

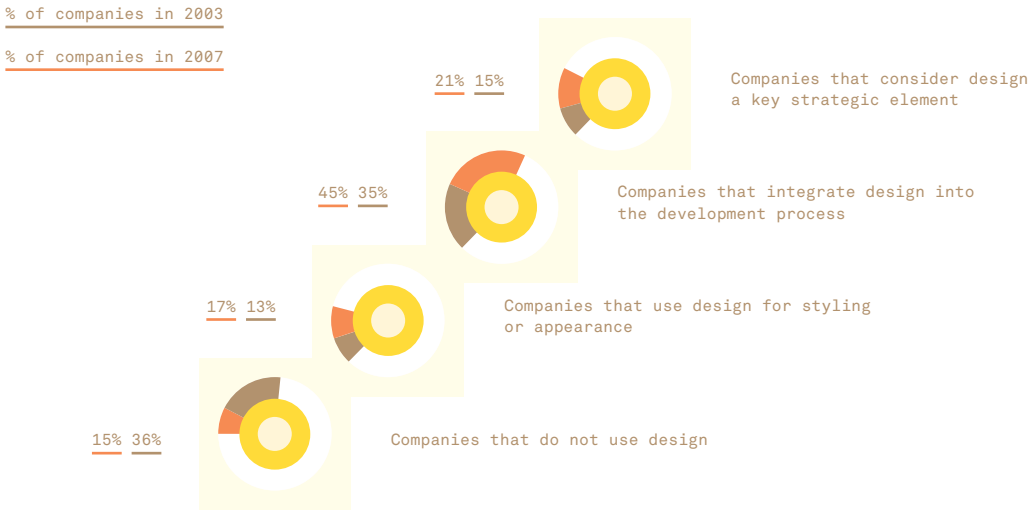
The Design Ladder is based on the principle that the extent to which design may enhance innovation and competitiveness depends on a company's use of design. The following levels were identified:



The higher a company is ranked on the Design Ladder, the greater strategic importance it attributes to design (Stage 4 being the highest). It will be important therefore to get a complete understanding of where Ireland sits on this ladder and to evaluate its progression.

Building on their first design programme in 1997, the Danish government adopted a four-year national design policy in 2003 as one of five new strategic initiatives to promote economic development under the programme "Denmark in the Culture and Experience Economy."

To review impact companies were benchmarked in 2003 and again in 2007 against the Design Ladder criteria. By indexing the companies according to the four profiles, the Design Ladder provides an assessment of how many companies actually moved up a rung on the ladder over the course of four years. The result revealed that, between 2003 and 2007, the distribution of Danish companies at stage three of design maturity rose from 35% to 45% and the number of companies at stage four rose from 15% to 20%.



“Design pays off. Companies that adopt a comprehensive approach to design make more money and generate more exports than companies that do not use design.”[10]

It is time for the Irish SMEs to become more dynamic and innovative across all levels of development. A greater awareness and adoption of a design-driven innovation approach and design-thinking can impact positively on economic growth and job creation in Irish SMEs.

10
Danish National Agency for Enterprise and Housing (2003). The Economic Effects of Design, P.3.

Case Study Images:
Right: Mcor Technologies
Case Study – Page 42

Bottom: Anord Control Systems
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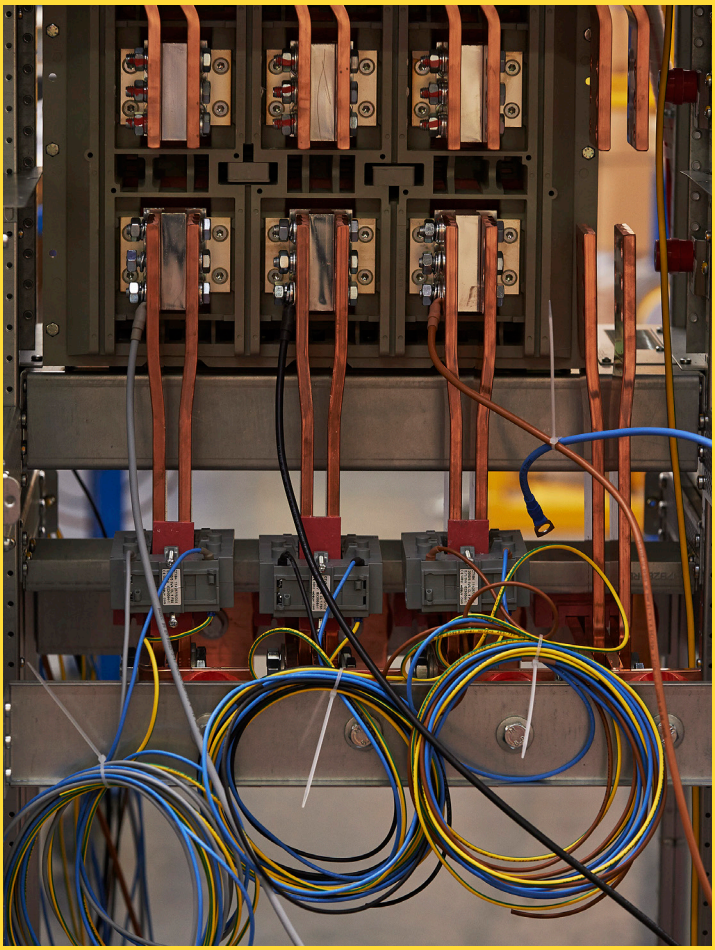


“The results are compelling: companies that invest in design tend to be more innovative, more profitable and grow faster than those who do not. There is a strong positive correlation between the use of design and national competitiveness”

EU Commission (2009). Design as a Driver of User-Centred Innovation. P.2.

Objective:
Demonstrate the positive ROI from investment in design-driven innovation

The Returns

Design has been proven as a source of competitiveness for all firms. It has also been shown that there is a direct correlation between the use of design and overall national competitiveness of countries.

Data from across Europe and around the world demonstrates that companies that use design are more profitable, innovative and export orientated than companies that do not. In addition, where design is an integral part of the innovation process, the return on investment is greater than when design is only used for styling.

The economic impact of design is based on factors such as: [11]

- Strategic capability to respond to current challenges and people's needs in the right way at the right time;
- Value creation based on intangibles and increasing the mass of IPR (copyrights and industrial property rights);
- Creation of distinct and attractive products and services along with a higher price paid for them; and
- Cost savings generated through the means of design.

However economic impact is not unconditional but dependent on factors such as industrial evolution, design practice and the ease with which product design can be imitated. [12]

Denmark

In its Community Innovation Survey in 2010, Statistics Denmark included a set of questions on design for the first time. These questions provided a practical review of the ladder-style model of design, i.e. the extent of the sophistication and integration of the design function within a firm and its impact on the economic outcomes of the firm. The micro-data has subsequently become a case-study of the OECD Secretariat [13] in collaboration with Statistics Denmark. The overall results of the analysis support the validation of the 'ladder' model. [14]

Design Integration has Robust Positive Correlations with a Firm's Economic Outcomes, especially Value Added and Productivity growth: Over the 3-year period of the survey, design integrated firms are found to have on average a 9.1% higher employment growth rate, a 18.7% higher added value rate and a 10.4% higher productivity rate than firms of similar size within their own sectors.

Design Integration tends to have a Positive Effect on the Success of Innovative Products: The percentage of innovative turnover of product innovating firms is 9 times higher in firms using design as an integrated element; and

11
Finish Ministry of Employment and the Economy and the Ministry of Education and Culture (2012). Design Finland Programme. P.8.

12
Gemser, G. & Wijnberg, N. (2003). The economic significance of industrial design awards: A conceptual framework. Design Management Journal – Academic Review, 2 (1), P.61-71.

13
Galindo-Reuda, F. and Millot F. (2015). "Measuring Design and its Role in Innovation", OCED Science, Technology and Industry Working Papers, 2015, OECD Publishing.

14
Ibid P.8.

Design integration is highly correlated with innovation outcomes, particularly product and innovations, including new-to-market innovations: The probability of introducing a product (marketing) innovation is 24% (31%) higher for firms where design is integration.

An earlier study by the Danish Design Centre of Danish companies, found that using strategic design resulted in additional growth of just under 250% compared with companies that do not use strategic design. Furthermore, companies investing in strategic design enjoyed an average export ratio of 34% of turnover, compared with 18% in companies that do not use design. [15]

UK

The UK Design Council [16] has shown for every £1 invested in strategic design:

- Design Boosts Exports: businesses can expect a return of £5 in increased exports;
- Design Increases Turnover: businesses can expect over £20 in increased revenue; and
- Design Leads to Profit: businesses can expect £4 in net operating profit.

It also found that strategic design strengthened businesses by: [17]

- Accelerating new ideas to market;
- Creating new products and services that have transformed existing markets or opened up new ones; and
- Establishing improved or new processes for product and service development to more effectively support innovation activity.

15
Danish Design Centre (2007) 'Facts and Insights about Design Motivations and Barriers', Copenhagen, P.3.

16
Design Council. (2012) 'Design delivers for business. A summary of evidence from the Design Council's Design Leadership Programme', London, P.2.

17
Ibid. P.2.

New Zealand[18]

The New Zealand Institute of Economic Research (ZNIES)[19] proved that there is a correlation between overall competitiveness and the use of strategic design. This was done by a quantitative analysis of the World Economic Forum's Global Competitiveness Report and a 'design ranking' study by the ZNIES. This study identified and isolated those indicators relevant to the application of design (extent of branding; capacity for innovation; uniqueness of product designs; the extent of marketing; and the production process sophistication). Led by Finland, the USA and Germany the analysis, showed, with the exception of Korea, that of the 25 best performing all countries in terms of design were also ranked in the top 25 in terms of overall competitiveness.

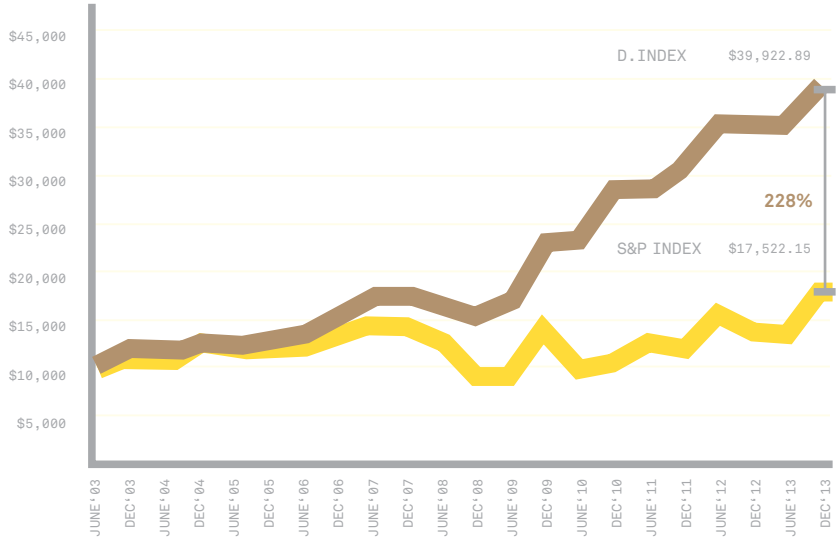
Design-Centric Organisations:

Apple
Coca-Cola
Ford
Herman Miller
IBM
Intuit
Newell-Rubbermaid
Nike
Procter & Gamble
Starbucks
Starwood
Steelcase
Target
Walt Disney
Whirlpool

USA

The Design Management Institute (DMI) Design Value Index[20] which was developed in 2013 tracks 'the value of select publicly held companies (in America) that meet the DMI design management criteria and monitors the impact of their investment in design and innovation over time'[21] compared to Standard and Poor's (S&P) 500 companies. The Index found that between 2003 and 2013 the performance of 15 America design-driven companies outperformed the S&P 500 by 228%.

DMI Design Value Index



18
See the SEE Project Case Study Library www.seeplatform.eu/casestudy.asp

19
New Zealand Institute of Economic Research (2003). Building a case for added value through design. Wellington: New Zealand

20
Westcott et al (2013). The DMI Design Value Scorecard: A New Design Measurement and Management Model, Design Management Review, Vol. 23, Issue 4, P.10-16.

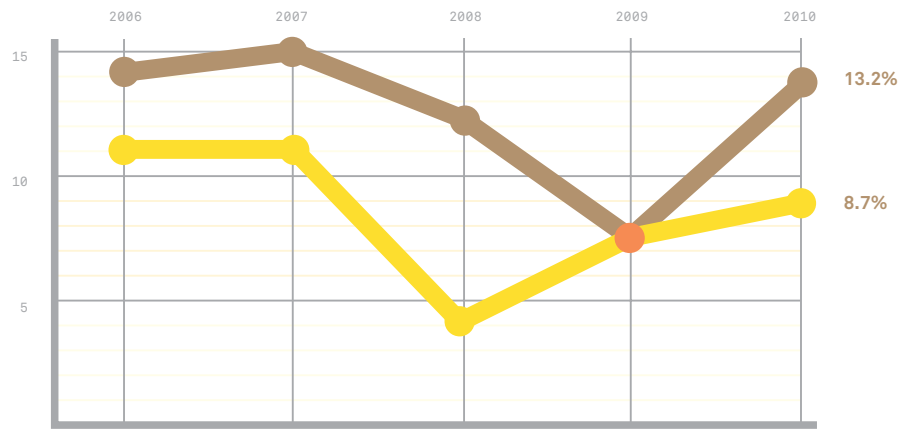
21
Ibid P.10.

Sweden

Research commissioned in 2008 by the Swedish Industrial Design Foundation [22] targeting both service businesses and firms in the manufacturing sector to understand the impact of investment in strategic design had on profitability. The Foundation found that the profitability of companies investing in strategic design on a continuous basis was more than 50% greater than those that had not invested.

This research was followed up by Teknikföretagen, an employers' organsiation for Swedish engineering companies in 2011 on its member companies that had particpated in the 2008 study. "Companies that use design in a strategic and innovative way are clearly more profitable than those that don't. The positive difference is even more pronounced when we compare their profit margins." [23]

Teknikföretagen Profitability Research 2006 – 2010

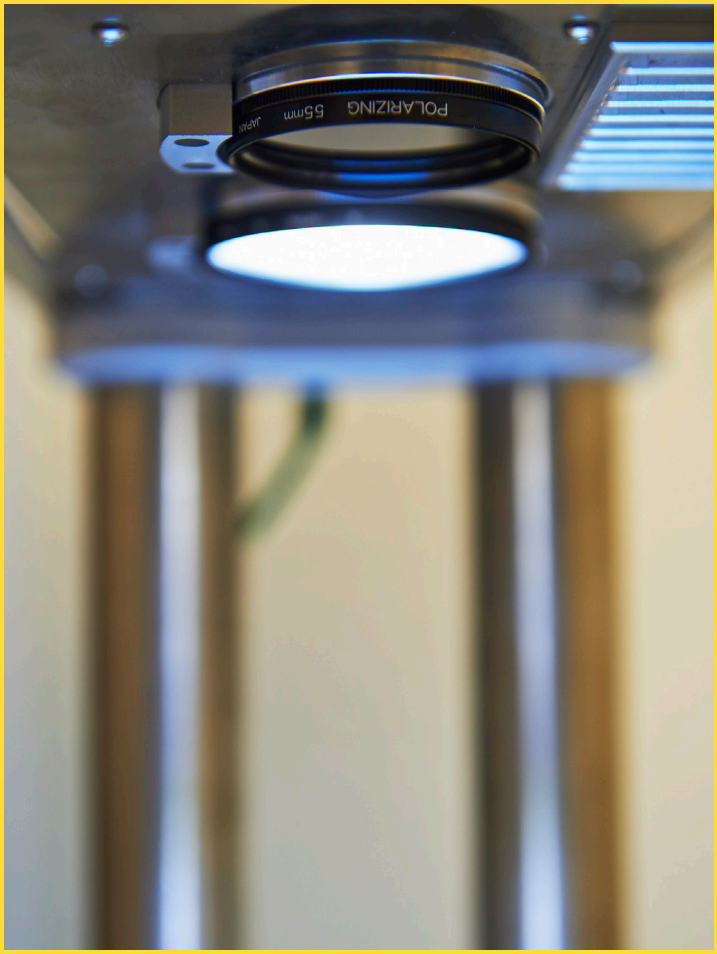


22
Swedish Industrial Design Foundation (2008). Measurement 2008: Swedish Companies on Design.

23
www.svid.se/en/The-benefit-of-design/Analysis-Companies-that-invest-in-design-are-more-profitable/ Quote by Teknikföretagen's chief economist Anders Rune, who conducted the analysis.

Case Study Images:
Right: Cidran Imaging
Case Study – Page 46

Bottom: Forest Produce
Case Study – Page 40



“Design capability is about employing vision, process, creativity and technical skill to develop products, services and brands that capture the imagination of customers throughout the world”

Department of Industry and Regional Development (2003). Success by Design: A Report and Strategic Plan from the New Zealand Design Taskforce. P.14.

Objective:
Show the design-driven innovation methodology for SMEs

Building Design-Driven Capability

At the level of the firm innovation is seen as the driver for rapid and profitable growth as it can deliver improved competitive positioning, higher customer satisfaction and decreased costs. Companies see innovation as a growth multiplier and there is a clear correlation between innovation and growth.[24]

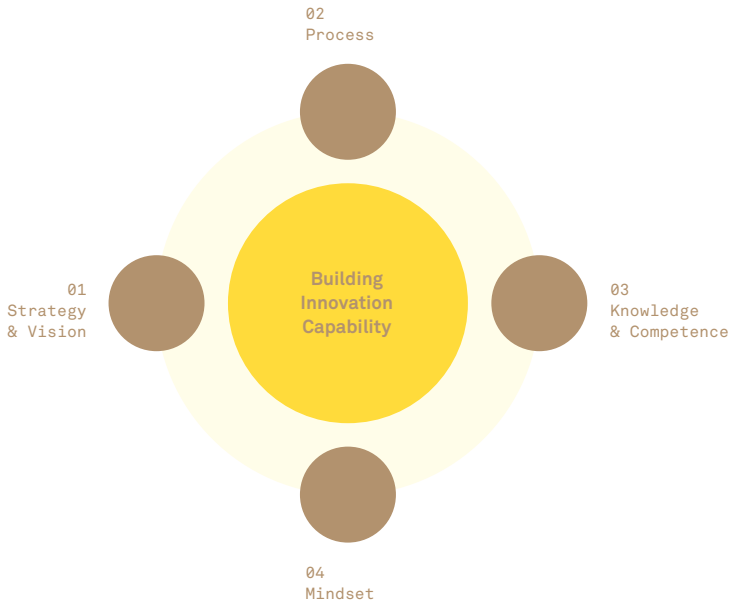
However, innovation is not without its challenges and the biggest issue facing companies is how to build an innovation capability that will continuously produce innovative ideas that can be taken to market quickly in a scalable way.

24
PWC (2013). Breakthrough Innovation and Growth.

Building Innovation Capability - A Framework

Any initiative to increase the number of innovative SMEs will need to use tried and proven innovation building capability based on a solid innovation framework adapted to suit the Irish situation. The Framework below shows a suitable innovation capability framework with four components of process, knowledge and competence and mindset guided by the vision and strategy of the firm.

Each of the four components plays an important role in developing an innovation capability within the firm. A company must have a sound strategy with a shared vision of where the company is going. Additionally the company needs to have solid business processes such as organisation structures and managerial systems accompanied by knowledge and competence in their particular innovation space. The glue that maintains this innovation system is the mindset or culture and values of the firm.



Innovation Capability Framework[25]

25
Adapted from: Carlgren, L., Elmquist, M. and Rauth, I. (2014). Design Thinking: Exploring Values and Effects from an Innovation Capability Perspective, Design Journal, Vol. 17, No. 3, P.403-424.

01

Strategy & Vision

Strategy articulates the firms preferred environment and the type of organisation that it is striving to become.[26] Strategy involves creativity, vision, generating a competitive advantage and recognising opportunities. The strategy must be supported by a shared vision across the organisation that defines the company direction and provides guidance for all staff in what they should do.

02

Process

Companies need management systems and structures with associated processes to enable and encourage an innovation capability to develop and grow. Innovation capability building is a learning activity that is incremental in nature but it needs the right environment to foster creative and innovative behaviour that will develop and flourish.

03

Knowledge & Competence

Succeeding at business innovation involves the well-functioning and well managed contribution of capable, trained and motivated people. The people bring the talent and the willingness to learn and a learning organisation encourages thought leadership, problem solving best practice and creative thinking.

04

Mindset

The main barriers[27] to innovation are perceived to be norms and values prevailing in the organization and the lack of strategic direction. Attitude to mistakes, tolerance of ambiguity employee empowerment and how decisions are made are all important aspects of an innovative culture and mindset of the firm.

26
Itami. H. (1997) Mobilizing Invisible Assets, Cambridge, MA, Harvard University Press.

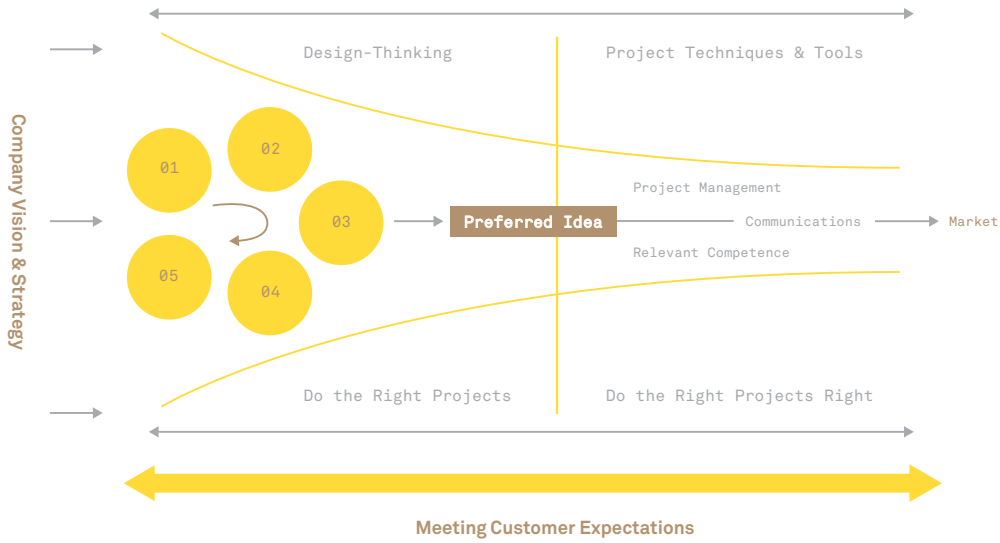
27
Francis, D and Bessant, J. (2005) Targeting innovation and implications for capability development. Technovation, Vol.25, No.3, P.171–183.

Design-Driven Innovation Methodology

An innovation capability by itself will not guarantee success. These capabilities need to be focused and harnessed to achieve specific company goals. Firms need structured methodologies that use best practice tools within an applied learning process. The figure below shows a design-driven innovation approach that builds an integrated innovation business capability by aligning the company vision and strategy with its customers.

The first step in the process is to ensure that the firm's strategy is aligned with its customers' needs and expectations. This critical starting point of the innovation process relies significantly on the thinking, practices and tools of design, related to opportunity identification, idea generation and selection. Selecting the right projects involves a rigorous focus on solving an important customer problem, evaluating the business case and the company's capability to successfully execute the project work involved. This is an evidence-based approach that can be thought of as the front end of innovation that uses design-thinking as the process.

Design-Driven Innovation



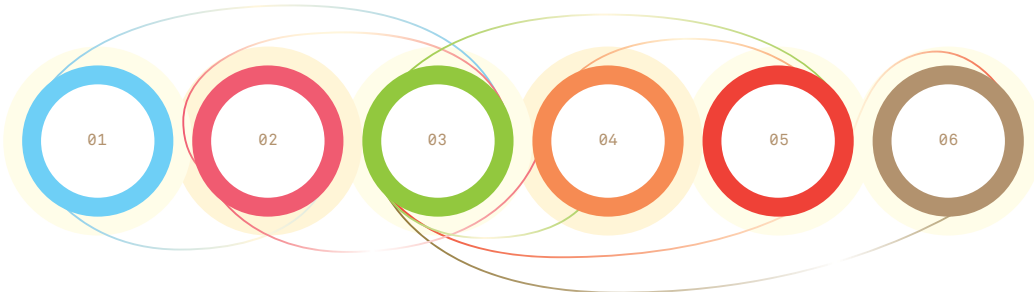
01 Understand the problem
02 Observe users
03 Define insights
04 Ideate & prototype
05 Test

Design-thinking has emerged as a multidisciplinary, human-centred innovation approach influenced by the ways designers think and work. It includes aspects such as feasibility and viability, and one of its core aspects is the creativity that emerges from the tensions among these various constraints.[28] However, design-thinking is more than just a process or tool. It is an interactive activity that plays an important role in improving the innovation capability of the firm and it helps to change the mindset and culture of the staff. Thus it plays a twin role in innovation capability building.

It is important to note that design as an innovation methodology is a practice rooted process and way of thinking that can bring about innovative results. In this way it is different from design in other contexts such as product design.

The following figures illustrates the design-thinking process as practiced by the the d. (design) School a hub for innovators at Stanford University.[29]

Design-Thinking Process



01 Understand >
02 Observe >
03 Point of view >
04 Ideate >
05 Prototype >
06 Test

28
Brown, T. (2008) Design-Thinking. Harvard Business Review, Vol.86, No.6, P.84–92.

29
Source Stanford d. School 2009.

The second step in the process is to bring this product or service to market or ‘doing the right project right’. This activity is fraught with difficulties and again must be carried out in a structured way to be successful. Firms must deliver product or services to customers at the right price, the right quality, at the right time and with the right service. This requires companies to be proficient in program management, communication and specific expertise associated with their offering.

Thus firms must be competent in all aspects of their business if they are to succeed. The end-to-end design-driven innovation methodology provides the necessary processes, tools, techniques and learnings to cover both the front and back end of the innovation process.

Communications

The purpose and vision of the organisation acts a guide when developing concepts, analysing experiences, defining goals, asking critical questions, discovering communication gaps, identifying opportunities and generating new insights. Therefore, it is important that design-driven innovations are not viewed in isolation but are seen as part of the greater company vision. Thus, it is important to communicate the company message effectively to its staff and to its customers.

“Policy-makers and other SMEs need to understand that design gives companies a sustainable competitive advantage and enables them to compete on global markets and will help create more local jobs to sustain communities”

Sean Blaney,
Managing Director, Quad-X.

Objective:
Highlight successful design-driven
innovation SMEs on the island of Ireland

Irish Design-Driven SMEs

The purpose of the case studies was to conduct an intensive evaluation of six SMEs across a range of sectors. The case study method allowed for the histories and stories of the firm to be told in a personal way, for example, stories and anecdotes about how the company interacts with the marketplace can be used to get a better understanding of the innovative thinking and behaviour that is in play.

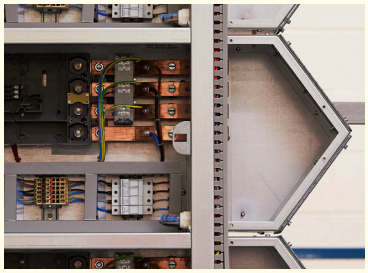
Case studies were carried out as part of the research. Four companies were selected from Ireland and two from Northern Ireland. The criteria for the selecting the companies were that the companies must be;

- Indigenous (ROI/NI);
- SMEs (more than 10 employees);
- Explore a Range of Sectors e.g., Software, Medical, Natural Resources, Engineering;
- Exporting; and
- Illustrate a Clear use of Design in Company SMEs.

Each company was visited by a CIRCA Group Europe researcher and key company personal were interviewed.

Case Studies

ANORD CONTROL SYSTEMS LTD
Power Infrastructure



“Design is a translational tool for Innovation where the customer is always involved.”

Anthony Nordon,
Chairman, Anord Control Systems

FOREST PRODUCE LTD
Forestry

“Design is seen as the ‘critical factor’ that has got us to where we are.”

Jim Costello,
CEO and Company Founder,
Forest Produce

MCOR TECHNOLOGIES
3-D Printing

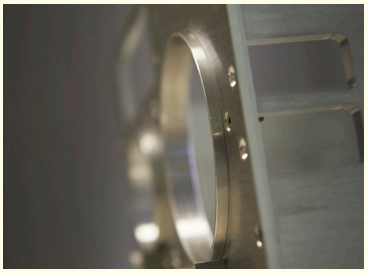
The R&D structure required to ensure an efficient and effective innovation process depended hugely on design-thinking across all disciplines.

QUAD-X LTD
Manufacture of ATV & Quad Equipment

“Policy-makers need to understand that design gives companies a sustainable competitive advantage and enables them to compete on global markets and will help create more local jobs to sustain communities.”

Sean Blaney,
CEO, Quad-X

CIRDAN IMAGING LTD
Medical Devices/Informatics



“In Cirdan’s business the regulatory authorities are very much aware that good design of medical devices is an imperative.”

Stephen Dunniece,
Technical Director and Systems
Design Engineer, Cidram Imaging

AEROGEN LTD
Medical Devices/Drug Delivery

Design as a tool for the integration of product and process.

Anthony Nordon, Chairman
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Background

Anthony Nordon founded Anord Electric Ltd in 1971 after he left the ESB. Based in Dundalk, Co Louth, Anord served the switchgear needs of the electrical industry in Ireland.

Anord built up a reputation for delivering a high quality product at competitive prices. The company was quite successful with over 30 employees but further growth was limited as the company was seen as a basic assembly shop with a limited design capability.

A decision by a UK water supply company to use variable speed drives for the water pumping system presented an opportunity to Anord. There was no control system on the market that could drive these pumps but Anord's track record of quality, reliability and service played a key role in convincing the contractor to give the control system design job to the company.

This was a strategic transformation point as it moved them from a basic assembly operation to a full design and product development service. The decision made by Anthony to develop an in-house design capability has yielded significant results for Anord enabling them to expand into export markets and win more complex projects.

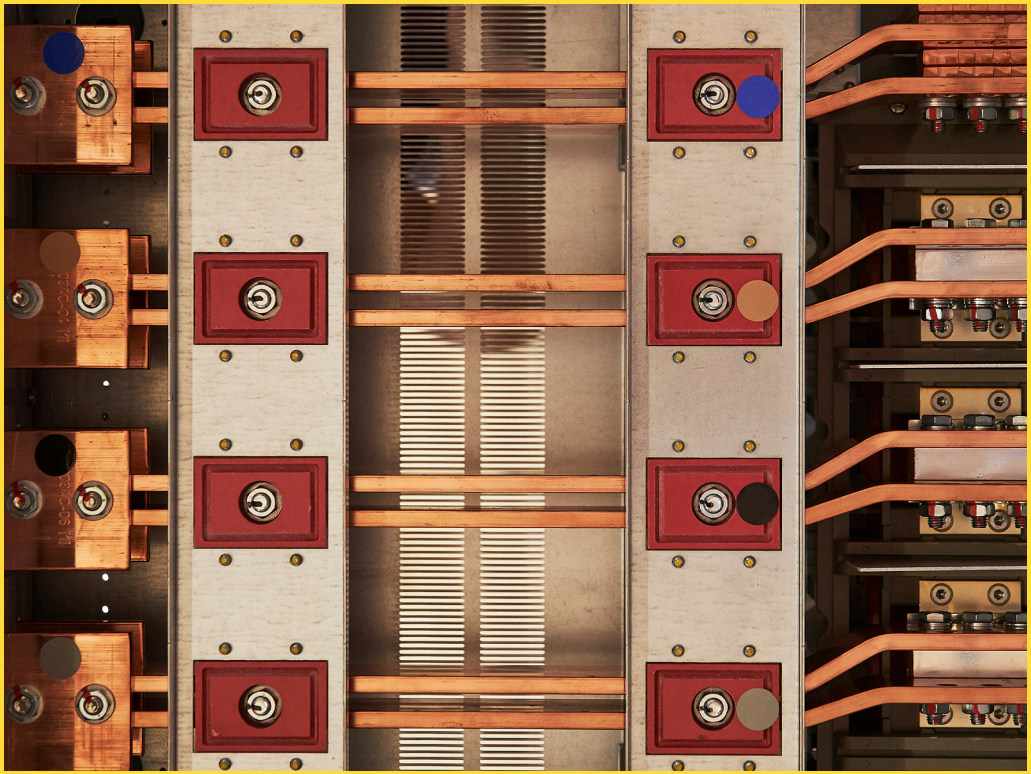
Anord now employs about 90 people in Ireland and it has expanded into the USA where it has opened a new factory to serve the USA and Canadian markets.

Lessons from Anord Control Systems: The Benefits of Developing in-house Design-Driven Innovation Capability

This case study shows how design was used at a critical point in the growth of the company to move the company to the next stage of its development. It is the element that differentiates them from their competitors and enables them to continually innovate in a fast changing environment. This approach has enabled the company to compete for business from all the major multinationals in Ireland and abroad. In addition it informed their major and costly transition from basic manufacturing to product design.

The following takeaway points from the case are important:

- Anord identified a design opportunity and realised that if they could complete the job successfully, new markets would be opened up to the company:
- Anord recognised that they would need a design resource to carry out the work and they hired a designer;
- Customers are looking for effective solutions to meet their needs and Anord have found that introducing designers early on in the sales process helps enormously in winning new business;
- Anord have used design to differentiate themselves and create a competitive advantage; and
- Anord continue to use design strategically to continue along their growth path.



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Background

Forest Produce has been supplying foliage to wholesalers, supermarkets and florists throughout Europe for two decades from their base in Tralee, County Kerry. The company employs over 50 staff and it supports a number of additional jobs by utilising growers in Kerry and Wexford.

Jim Costello the company founder recognised the importance of product design early on and he decided he needed to invest in this area and as a result he hired a Dutch designer who was experienced in the global foliage and flower business. This belief in design paid off as the company's turnover increased significantly when Forest Produce began offering innovative designs based on customers' needs.

There have been major rationalisations within the sector with a focus on cost reduction but Forest Produce has survived this industry turmoil and they are finding that their innovatively designed products gives then a clear competitive advantage. The differentiating factor that design brings to their business is still opening up new opportunities particularly in continental Europe where major supermarkets are now looking for uniquely designed product to meet their customers' needs.

Forest Produce has dealt with many challenges and it continues to develop and expand into additional markets. They are leading the way with their scented and glittered quality foliage and 95% of their products are exported. However the company's fundamental belief in design as the driver of their success has not been diluted and design is now fully embedded in the company.

Lessons from Forest Produce: The Benefits of Hiring a Qualified Designer and Using Design as a Strategic Way of Encouraging Innovation

This case study shows how design was used as a key component of the Forest Produce business strategy. Forest Produce has become known for its innovative design which the company uses to differentiate itself from the competition. Jim Costello recognised from the start that design would provide the competitive advantage that was required to compete in export markets.

The following takeaway points from the case are important:

Forest Produce knew from the outset that the majority of their business would have to be exported and recognised that they would have to develop a competitive advantage if he was to compete in export markets:

Forest Produce identified that this innovation would be realised through the design process;

The hiring of a world class designer illustrated their faith in the design process even though it was expensive and perceived as potentially risky decision at the time; and

Forest Produce are now using design to develop a competitive advantage in their operation and administrative processes.

Forest Produce Ltd

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Background

Dr. Conor MacCormack first discovered 3D printing in 1986, when he was a secondary student in Ireland watching a BBC special. It was while earning his doctorate degree at Trinity College Dublin that he saw first-hand the limitations on the use of the technology related mainly to the rising cost of the model making consumables.

Conor and his brother, Fintan set out to invent a 3D printer with such a low operating cost that the technology could be accessible to everyone. 3D printing technology can be produced in plastics, plaster, photopolymers, metal and, occasionally, food. Mcor added one more material to the list namely paper. This led to their development of the Selective Deposition Lamination (SDL) or paper 3D printing in 2003.

The developmental process required that the printer would be an easy to use robust design. That it would provide fitness for purpose across a range of demanding usage settings, without the toxic fumes users of other 3D printers were exposed to. Further innovation challenges including enhancing the working system including software, mechanical, electrical, electronics and industrial design.

Mcor has continued to develop and has received several business and technology awards. By 2012 the company was in full production with a presence in the USA and by December of that year it had launched a full colour 3D printer on the market called the Mcor IRIS.

The R&D structure required to ensure an efficient and effective innovation process depended hugely on design-thinking across all disciplines.

Lessons from Mcor Technologies: The Benefits of 'Design-Thinking'

The approach by Mcor was to invent a 3D printing system that would use a commonly available cheap material such that the use of the technology could be opened up to a much wider user population. This vision together with the wider ambition drove this project to succeed and in the process overcome several difficult design problems.

Although their application was necessary to make the product at the right price, ensure compliance with EU directive law and ensure its fitness for purpose the results of the application of highly sophisticated thinking, techniques and tools of design are not directly obvious to customers. Ironically what is obvious to customers is the industrial design input (styling) although this is the least significant design intervention. The following takeaway points from the case are important:

- Mcor were driven by the belief that they could design and manufacture a better 3D printer than was currently available, while making it accessible and more affordable to a wider market;
- Design-thinking was utilised across all disciplines in the innovation process;
- Mcor used a structured design process to overcome significant technical problems; and
- Mcor also used industrial design to make the product more appealing to customers.

Mcor Technologies Ltd

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Background

Sean Blaney while he was studying for a degree in manufacturing systems, he established in 1993 'The Quad Shop', in his father's farm buildings in Ahoghill, Co Antrim, to repair Quad Bikes. During this period Sean identified aspects of the current designs that could be improved.

Under the name Blaney Motor Company, he set to work designing an improved quad bike which was sold to dealers across Europe. However by the mid-noughties, Chinese manufacturers had taken over the European market. In response Sean established Quad-X in 2005 and focused upon designing more than 100 innovative all-terrain vehicle attachments for quad vehicles and tractors. Examples of products include aerators, hedge cutters, bale shredders and many more.

The company now employs over 40 staff and about 50% of them are graduates of different disciplines with a strong contingent of engineering designers.

The company is currently building a new factory and will create an additional 20 jobs. The success of Quad-X is based on its ability to innovate and use its design expertise to develop new products. Over 50% their products have being designed in the last three years and over 95% of its products are exported to 16 countries.

Lessons from Quad-X: How design expertise can help the innovation process

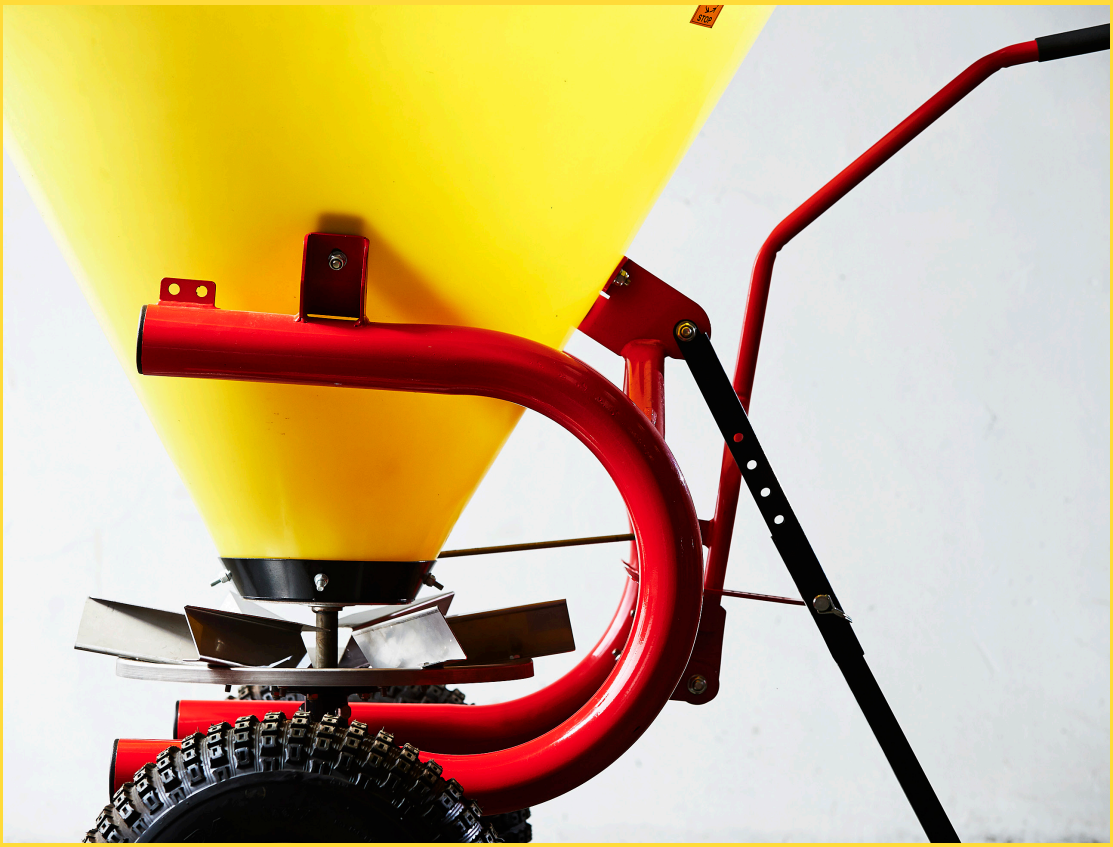
This case study shows how Quad-X identified aspects of the design of an existing product that they could improve and he set out to redesign the product himself. This activity taught Quad-X about the importance of design and how it was used to work with customers to get the best product design. This design-thinking approach led Quad-X to continue to design and develop products that meet target customer needs.

The success of Quad-X is based on the company's ability to innovate and use its design expertise to develop new products.

Over 50% of Quad-X's products have been designed in the last three years and over 95% of its products are exported to 16 countries.

The following takeaway points from the case are important:

- Quad-X identified a product improvement need and they set out to meet this need by designing a better product;
- Quad-X identified the importance of getting potential customers involved in developing product specifications;
- Quad-X now have a significant design team that are continuously innovating and designing new products; and
- Quad-X use industrial design to improve the appearance of the product.



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Background

Located in Lisburn, county Antrim, Cirdan Imaging Ltd is an early growth company specialising in novel medical devices and medical informatics software. The company started in 2010 and now employs 20 people, the majority of whom are highly qualified in engineering, science and technology.

Using in-house expertise in high performance camera and image processing technology they are developing new imaging modalities using x-ray, near infra-red and visible light wavelengths to enhance medical diagnosis techniques.

The company partners with researchers, clinicians and other companies across the innovation value chain from co-design of the customer experience to industrial and engineering design of the functional equipment. The company carries out high value mechanical, electrical, electronic and software design work to meet demanding customer performance and usability criteria. Through outsourcing industrial design and manufacturing work Cirdan plays an important role in growing employment and high value industrial skills in Ireland.

Lessons from Cirdan Imaging: 'Hidden Design' Key to Development

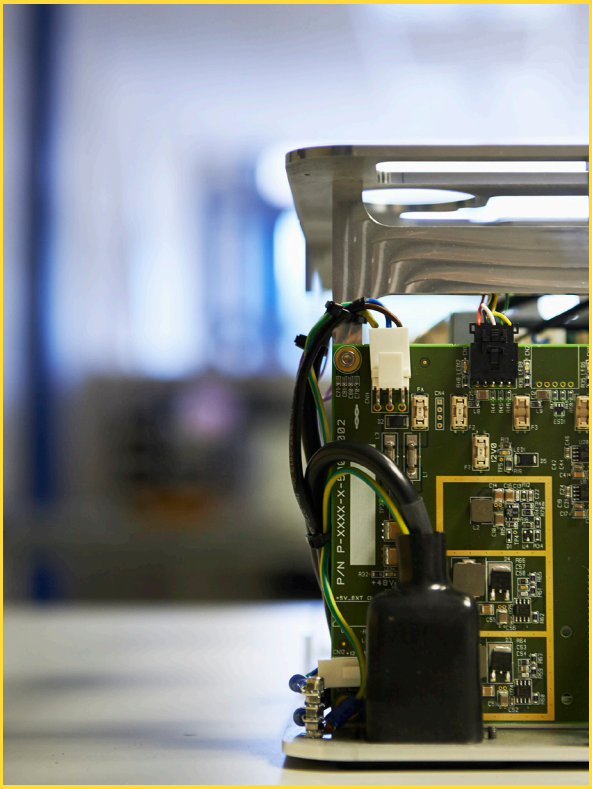
Cirdan established that there was a strong customer need for their products which was supported by a strong business case. The translation of the customer need into viable solutions required sophisticated imaging technology development and integration and the concomitant use of sophisticated design tools.

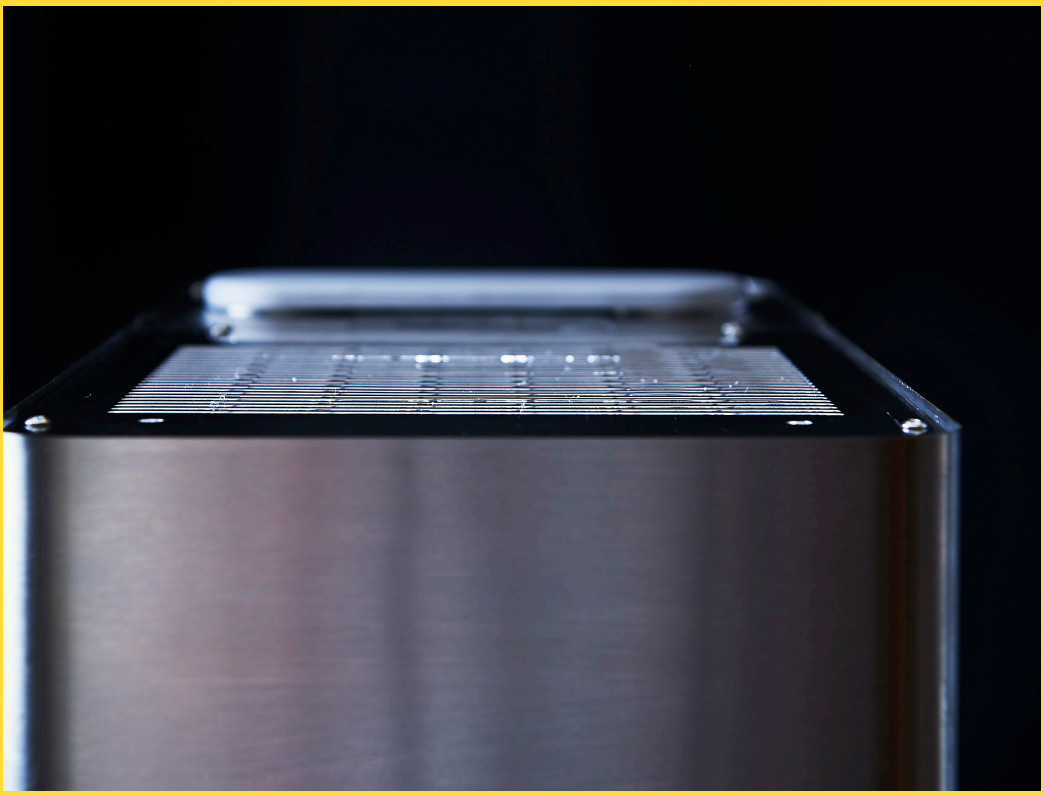
The application of design tools and principles in this highly regulated high tech environment to achieve advanced products without identifying it as design is an excellent example of how 'hidden design' plays a major role in bringing products to market. This is a common feature of design in high value innovations particularly where science and technology excellence are required to deliver a product.

In general people have a poor perception of many of the design functions that work together to provide the whole product and this view may prevent firms taking advantage of the potential for the accumulation of designer capability which provides the basis for continuously improving product design.

The following takeaway points from the case are important:

- Cidran identified a specific customer need and they set out to serve that need;
- Cidran established the business case for their drug delivery product;
- Cidran needed to apply a high level of science and technology to design and develop the product; and
- Cidran applied sophisticated design tools but did not describe their work as design, an excellent example of 'hidden design' within an SME.





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Background

Aerogen, a medical device company based in Galway re-emerged as an Irish owned company in 2007 following a managerial buy out led by John Power. The company's products are protected by over 40 patents and are sold in 65 countries worldwide with 96% of sales for export markets. The focus of the case study is on the company's decision to bring the assembly of its aerosol generator along with its main product line the Aeroneb Solo™ nebuliser back from China to Ireland. The company utilises its proprietary aerosol platform to produce a range of pulmonary drug delivery products. Its vibrating mesh technology creates tightly controlled micron sized aerosol particles which deliver medications to the lung. This involved collaboration with strategic partners (Molex) which began in 2007 and involved significant commitment from Molex for process re-development and automation of the nebulizer core assembly.

Partnership was also important through research and development with the University of Limerick as part of an Innovation Partnership Scheme supported by Enterprise Ireland. Collectively the program focused on design for manufacture optimisation, resulting in reduced product to product variability and higher yields. An important factor in bringing manufacturing back to Ireland was recognition of the benefits of co-locating product development and process development. A major benefit of co-location is that much new product development comes out of process development. The ability to increase yields and reduce variation can lead to the development of enhanced products and a new price point.

Lessons from Aerogen: The Use of Design as a Tool for the Integration of Product and Process

The use of design by Aerogen as a tool for the integration of their product and process produced the following benefits:

- Lower manufacturing and logistic costs due to process automation;
- Improved product quality and increased customer satisfaction.
- Shorter lead times; and
- Reduced working capital

The following takeaway points from the case are important:

- Aerogen identified a specific customer need and they set out to serve that need;
- The company established the business case for their drug delivery product;
- The company needed to apply a high level of science and technology to design and develop their product and process; and
- Aerogen did not describe their work as design, a good example of 'hidden design'.

Aerogen Ltd

“As SMEs in Australia strive to recognise, assimilate and apply design-led innovation, they face the challenge of absorptive capacity. It is only through recognition that this is a widespread issue that we can take action ... so SMEs may fully reap the benefits from adoption of design-led innovation”

Bucolog, Sam (2014). Design for Manufacturing Competitiveness: Prepared for the Australian Government Department of Industry. P.10.

Objective:
Illustrate the current understanding
of design-driven innovation in Ireland

Strategic Design in Ireland

New Research into Design-Driven Innovation in Ireland and Northern Ireland

The aim of this research was to get an insight into how well design-driven innovation is understood, applied and deemed relevant by those involved in policy-making, design education and innovating SMEs on the Island of Ireland. The main conclusions are set out below. The research carried out by the CIRCA Group Europe using a combination of phone and face-to-face interviews, an expert workshop focusing on design-driven innovation and six case studies (see appendix for interviewees and workshop attendees).

Interviews with key informants

A series of 23 extensive interviews were undertaken with people representing key groups of people:

- Public Sector and Education – including policy-makers and policy advisors
- Industry Stakeholders
- Development Agencies and Government Departments in Ireland and Northern Ireland

Key Findings

There is a self-fulfilling context for design-thinking/ strategic design in Ireland – SMEs don't appreciate the value of design, few business people learn about design, busy SMEs take new ideas on board slowly, there are a relatively small number of initiatives that focus on design-driven innovation by State Agencies in Ireland (however there has been a Design Service operated by Invest NI in Northern Ireland at some level since the mid-1990s) and few graduates entrepreneurs undertake even basic courses on design processes.

The design industry was found to be fragmented and not doing a good job at selling itself. The sector had a narrow focus with a limited experience of the design process for innovation.

Based on these findings the challenge will therefore be to change attitudes to design-driven innovation in the future.

The main conclusions from the interviews were focused around four key areas:

01

Awareness:

Most respondents agreed that there was a poor awareness of design-driven innovation process for business and that the scope of design was generally poorly appreciated or understood compared to other countries. Furthermore there are few examples of Irish design-driven companies that are publicly known.

02

Design Policy:

Industrialists were not up-to-date on what was happening design in European policy, some people in the State Agencies were. Most respondents believed that there was lowered priority towards design by policy-makers, due to the lack of appreciation of its importance. Most respondents believed that there was no convincing economic and social arguments being made that would convince policy-makers.

03

Innovation and Design:

All respondents rated the importance of design to improve innovation with the highest rating value – they saw design as potentially important in growing companies and increasing jobs. There was a lower appreciation for the importance of design in internationalising companies. The educational respondents were familiar with design-thinking, but few policy advisors and industrialists were.

04

Initial Education:

It was felt that the education system was not producing rounded designers that understand business adequately, one which was not bridging the gap between different disciplines/faculties, and was also not producing graduates with adequate practical experience.

Expert Workshop Conclusions

A one-day expert workshop on 'Design-Driven Innovation' was held on June 12th at the Wood Quay Venue in Dublin City Council's facilitated by the CIRCA Group Europe. The participants were presented with the initial findings of the research which reflected upon the outcome of the interviews and global evidence around the move to embrace design-driven innovation processes. Two breakout sessions were facilitated addressing two key overarching questions.

Do you believe there is a 'design-gap' in innovation and is design important for innovation?

The conclusion of the groups was:

- That the internationalisation of significantly more SMEs is essential to create sustainable Irish jobs and economic growth and design-driven innovation has a role to play;
- That innovation is a key part of internationalisation and company growth;
- That design-thinking/process is an essential component of rigorous, disciplined innovation particularly for medium to hi-tech companies;
- That design is also very important for new service innovation where customer experience is a key component;
- Design is part of the innovation ecosystem and can be part of all stages in the innovation process; and
- Design has a definite economic impact, although evidence is difficult to quantify precisely.

Who and how can these challenges be address?

- The major challenge identified was the changing of mindsets;
- A programme by Governments/agencies in Ireland similar to what is happening in Northern Ireland and New Zealand was advocated; and
- Changes in design education were described as essential for Jobs and Business performance.

“A number of countries have systematically started to invest in design as part of their innovation policy. More than before design is associated with user-driven innovation activities by companies”

Finish Ministry of Employment and the Economy and the Ministry of Education and Culture (2012). Design Finland Programme. P. 8.

Objective:
Identify best practice examples to learn from design-driven innovation

Support Programmes

Design-driven innovation support programmes which are targeted at SMEs are usually framed by national, regional or local government policies and strategies and driven by either enterprise departments, national design councils/design centers or design promotion institutes. These offerings range from consulting or advisory services, on-site mentoring, matchmaking between designers and businesses, education and training and dissemination of information about the economic value of design.

"Introducing design-thinking as an overarching approach within companies is one way in which Invest Northern Ireland (and the Department of Enterprise, Trade and Investment) is influencing companies in Northern Ireland to help increase their productivity, reduce costs and improve their competitiveness." [30]

30
P.4 http://secure.investni.com/static/library/invest-ni/documents/design-service-evaluation-august-2011.pdf

The rationale for design promotion and design-led innovation strategies by governments include: [31]

- To develop competitive advantage for national industries (Competitive Advantage);
- In open-market countries where there is a particular reliance upon export-orientated economies e.g. New Zealand (Export-Orientated Economies);
- Where market failure is evident and intervention is necessary, in the case where the allocation of goods and services by the free market is not efficient and effective i.e. low export performance of SMEs (Market Failure); and
- Where design has been integrated as part of national and regional innovation policies and recognised as crucial to the exploitation of new ideas for business and employment growth (Part of Innovation Strategies).

The comprehensive work of Raulik-Murphy (2010), [32] completed to understand the lessons from successful and unsuccessful strategies for design promotion and policies, provides us with an important guide to developing design support programmes. The author highlights in particular the work of Dumas [33] in her review of the UK Design Council's [34] 50th anniversary in which her key criticism lies in the lesson that "preaching good design is not enough."

In particular Raulik-Murphy emphasises that the key element for a successful design programme includes practical demonstration and actual experience of the use of design for business advantage. [35] This message is vitally important for the development of support programmes in Ireland, indeed, "experience shows that smaller companies do not respond well to generalised awareness programmes... SMEs need to be reached on a local basis, with active support and practical demonstration of the benefits on offer." [36]

31
Summarised in Rualik-Murphy, G. A Comparative Analysis of Strategies for Design Promotion in Different National Contexts. Ph.D Thesis. The University of Wales: UK. P.48-49

32
Rualik-Murphy, G. A Comparative Analysis of Strategies for Design Promotion in Different National Contexts. Ph.D Thesis. The University of Wales: UK.

33
Dumas, A. (1996). From Icon to Beacon: The New British Design Council and the Global Economy. Design Management Journal, Vol.7, No.3, P.10-14.

34
The British Design Council was opened in 1944.

35
Rualik-Murphy, G. (2010). A Comparative Analysis of Strategies for Design Promotion in Different National Contexts. Ph.D Thesis. The University of Wales: UK. P.31.

36
Cox, G. (2005). Cox Review of Creativity in Business: Building on UK's Strengths. London UK: HM Treasury.

This chapter will highlight the origin, details and impact of design-driven innovation programmes from around the world these will include:

Denmark: Design 360° + Design Boost Programmes

New Zealand: Better by Design Programme

Northern Ireland: Design Service Programme

UK: Design Leadership/Designing Demand Programme

Norway: Design-Driven Innovation Programme

Wales: Service Design Programme

Ireland: Innovation by Design Programme

Belgium: SME Wallet Programme

All Ireland: Innovation Challenge Programme

Design 360° + Design Boost
Country: Denmark
Funded by: Ministry for Business and Growth
Investment: €290,000 (2010-2012)
Run by: Danish Design Centre

Background

The world's first national design policy was launched by Denmark in 1997 to increase awareness amongst Danish SMEs of the value of design.[37] Denmark has subsequently produced its fourth national policy on design and is a world leader and exponent of design-driven innovation.

Programme

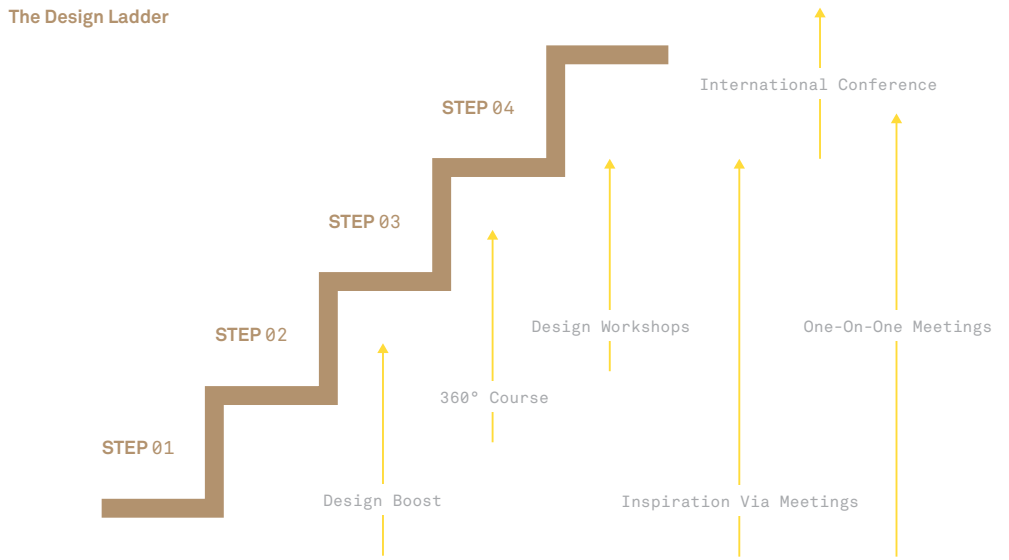
It is the aim of the Danes to move Danish companies up the Design Ladder, from non-design to strategy to maximise the returns from the application of design. Denmark has been going this through a wide range of programmes over almost two decades. This report has chosen to highlight two programmes to achieve this namely, Design 360° and Design Boost.

37
Scherfig, C., Brunander, M. and Melander, C. 2010. From the World's First Design Policy to the World's Best Design Policy. Vol.21, No.4, P.6-14.

For companies already familiar with design, 360° Design was an in-depth course focusing on business development and design strategy. 360° Design focused on improving the use of design through business development and cohesion, namely design strategy. Twelve to fifteen companies, with two employees each, participate in workshops over three to four days. Meetings aim to create a 'design strategy mindset' that opens up to new possibilities. Business development strategies are created to identify the opportunities offered by a design approach and what steps are needed to implement the necessary changes. Companies are introduced to a number of designers from which they can select one to work with in implementing the new strategy. The programme targeted Design Ladder step 3 businesses. A total of 40 companies went through the programme contributing €1,350 per company. The total investment by the Danish Government was €200,000.

Design Boost was a short intensive program that aimed to introduce companies to design. Design Boost takes five companies with two employees each (one of which must be a CEO or senior manager) on three half-day workshops over a two-week period. The main objective is to convey the value of design. For the initial meeting, all companies work together in a single workshop. This varied, small number of participants creates a dynamic, informal atmosphere and activities concentrate on applying design to specific challenges. For the second meeting, businesses are partnered with three different design companies representing product design, service design and graphic design. This meeting offers an opportunity for companies to ask specific questions around design in relation to their own activity. For the final workshop, companies are brought back together into a single group and create customised plans of action for the future. The programme targeted Design Ladder step 1 and 2 businesses. A total of 40 companies went through the programee contributing €1,000 per company. The total investment by the Danish Government was €90,000.

These examples give a quick overview of programmes strategically placed to develop Denmark's innovation capacity and the take-up of design based on the Design Ladder.



Better by Design Programme [38]
Country: New Zealand
Funded by: New Zealand Trade and Enterprise
Investment: NZ$5million per annum (approx. €3.8m) (ongoing)
Run by: Better by Design (Operating within New Zealand Trade and Enterprise)

Background

Better by Design was established in 2004 to inspire New Zealand's best companies to global market excellence through design. This emerged from the outcome of a national Design Taskforce initiative to develop a strategy and propose measures through the successful application of design to export businesses. Funding was allocated via the government's economic development agency New Zealand Trade and Design to enable New Zealand export companies to increase their international competitiveness by integrating design holistically throughout their business. Better by Design has worked with more than 150 companies since 2004 and the programme is funded by a combination of central government funding, fees generated through the provision of executive education and co-funding by client companies.

38
Text adapted by the authors from the SEE Project Case Study Library www.seeplatform.eu/casestudy.asp

Programme
A programme was developed that offered a range of services to assist high-potential export companies to integrate design into all aspects of their operations, from strategy, brand, culture through to new product and service development, executive education for CEOs and co-funding for design-related projects.

Keeping through to its mantra of Design for the Bottom Line, success is measured in strictly commercial terms. Evaluations criteria include attitude change (measured by a CEO survey), behaviour change (the employment of designers, investment in R&D and implementation of design processes), performance change (measured by increases in margins, revenues and exports) and economic impact (net economic benefit).

Quantitative research carried out in 2008 among Better by Design clients revealed a 119% increase in investment in design, an average increase in exports of 37.5%, and an increase in the percentage of revenue earned from exports from 48% to 61%.

"Better by Design is successful because it has a clear purpose, ambitious targets and a focused approach", says Judith Thompson Better by Design Director, "We select participant companies very carefully and only engage with CEOs committed to integrating design fully in their company. A further success factor is the unique structure of the public-private partnership at the core of our operating model."

Given the size of New Zealand's domestic economy and its lack of scale and critical mass, helping export businesses access new ideas to create higher-value products and services has become the centrepiece of the government's policy for innovation and business assistance. Introducing a design culture and a pervasive attitude of courage and innovation is critical if businesses are to success internationally.

Design Service Programme
Country: Northern Ireland
Funded by: Department of Enterprise, Trade and Investment
Investment: £2.4m (2008-2011) £3.5m (2012-2015)
Run by: Invest Northern Ireland

Background

Invest Northern Ireland (NI), Northern Ireland's regional business development agency is part of the Department of Enterprise, Trade and Investment, manages the country's Design Service Programme. Since 2008 there have been two significant phases of funding. In 2011 and 2014, independent evaluations of these two funding periods indicated a significant positive net return on the Design Service investments set out above.

Programme

The Design Service has been delivering support for strategic design since 2008 in Northern Ireland via the provision of four service elements:

Design Awareness: Promoting the strategic importance of Design through events, conferences and road shows;

Design Advice: Enabled through the Design Advice Service (DAS) and design clinics;

Design Capability: Main and Mini Design Development Programs (DDPs) and Design Manager Resource (DMR); and

Design Supports: Policy and strategic advice/input provided to Invest NI, wider NI Government its partners and stakeholders.

This report will highlight two programmes aimed at developing design capability.

The Main Design Development Programme (DDP)

The Main DDP seeks to develop businesses understanding of the importance of design in developing commercial success. In doing so, the programme aims to provide an introductory insight into the value of design and offers participants an opportunity to work with experienced design mentors and professionals on their own design project. The programme is typically delivered over a 4 to 5 month period and is delivered through the provision of:

Group Workshops: Each business attends group workshops/ sessions, containing circa 15 NI businesses, which seek to promote better understanding of design in terms of strategy and applied knowledge. The workshops also seek to provide businesses with the opportunity to network with one-another to discuss design-related issues and share good practice. Workshops were typically facilitated by 2 trainers;

Mentoring Support: Each business is provided with 3 days mentoring from a design mentor, to develop a design brief/project which will ultimately be implemented by the business; and

Consultancy Support: Each business receives 7 days consultancy support, from a suitably experienced design consultant, to support the implementation of the design project. The consultancy support is distinct from the mentoring support and is delivered by a separate provider, drawn from an Invest NI design consultant framework.

Participation in this programme costs Invest NI companies £500 per company.

The Mini Design Development Programme (DPP)
Similar to the Main DDP, the Mini DDP seeks to provide an introductory insight into the value of design and offers participants an opportunity to work with experienced design mentors and professionals on their own small scale and group projects. In doing so, the aim of the Mini Programme is to inspire and create an understanding within businesses of the importance of design in developing commercial success. The programme is delivered through three elements:

2 half-day group workshops (typically consisting of up to 15 businesses) which seeks to highlight the importance of design and the potential benefits that it can bring;

1 mentoring day per client business to support the development of a design brief/project to meet the businesses specific design needs that it can bring; and

Provision of 3 days of one-to-one design consultancy support to support the implementation of the design brief/project.

The Programme is delivered over an 8 week period and often tailored for groups or businesses with common design needs (e.g. sectoral groups, groups operating in same geographic areas, collaborative groups, supply chain groups, trade bodies, consortiums, etc.). The Mini DDP is available to Invest NI Clients at a cost of £250 (+VAT) (per business). The Mini DDP is also seen as a precursor to the Main DDP programme.

Design Leadership/Designing Demand Programme
Country: UK
Funded by: Department for Business, Innovation and Skills
Investment: £1.3m per year (2007-ongoing)
Run by: Design Council UK

Background

The Design Leadership Programme was set up following a review of creativity in business commissioned by the Chancellor of the Exchequer and the then Design Council Chairman Sir George Cox. The Cox Review [39] published in 2005, identified the need for urgent action if UK businesses are to compete with rivals in fast-emerging global economies. The review, endorsed by the Chancellor, recommended support for the Design Council's programme and called for it to be made available across the UK to help SMEs use design as a business tool.

Programme

The programme builds capabilities in UK's SMEs' to understand how they can use design strategically and effectively within their business. It takes a 'learning by doing' approach whereby coaching enables the business to identify where design can best meet their goals and then supports them in implementing tangible projects that meet these goals. The programme is delivered through Design Associates. They are design management professionals with expertise across all design disciplines and offer independent advice while adhering to a strict code of practice.

39
Cox, G. (2005) Cox Review of Creativity in Business: Building on UK's Strengths. London UK: HM Treasury.

The Design Leadership Programme offers three levels of support: Light touch intervention (two days) for small/micro businesses with limited resources but growth potential. They get:

- Taken through a design-led process to develop a strategy;
- Identification of a business-critical design project; and
- Development of a brief to implement independently at some future point.

This package of support is delivered over a short period of time (e.g., a couple of months depending on the pace at which the business wishes to work). It comprises two days of Design Associate support. This includes one-to-one time with a Design Associate and a half day group activity (workshop) which the business attends with a number of others engaged on the same programme (similar to framework with 1-2-1 delivery).

One project intervention (five days) for more established businesses with some resources to invest. They get:

- Delivery that is entirely 1-2-1 (including half day framework session);
- Delivery over an extended period of time (usually around six months) and comprises five days of Design Associate support;
- One business-critical project identified a brief developed with them;
- Design Associate helps them identify the right designers to implement the project; and
- Light touch 'client-side' support through the implementation.

The cost of the project implementation (i.e. working with a design agency etc) – depending on type, scale etc, is met in its entirety by the client, hence this level of support being for businesses with some money to invest. The aim is to help clients understand how to manage design effectively within their business. Multiple project intervention (10 days) is for larger, more mature businesses with multiple challenges and with the resources to invest in realising their ideas with the support of a Design Associate. The outcome will be several design projects implemented.

The full costs of the Design Leadership Programme range from £2,000 to £10,000, depending on the needs and scale of the business. Design Council offers a 50% subsidy to qualifying businesses, reducing costs to £1,000, £2,500 or £5,000. Since 2007 it has supported over 4000 SMEs, and intensively coached over 1000 of these to use design as a business development tool. An evaluation of this programme in 2012 found that it: [40]

Created 918 FTE jobs

Safeguarded 1,543 jobs

Generated £96.3m in additional revenues, £66.5m Gross Value Added and £43.9m Net Value Added (NVA)

This translates into an average national return of £5.67 GVA and £3.75 NVA for every £1 of public money invested in the regional delivery of the programme.

Design-Driven Innovation Programme
Country: Norway
Funded by: Ministry of Trade and Employment
Investment: €8m to-date (2008-ongoing)
Run by: The Norwegian Centre for Design and Architecture

Background

The need to strengthen innovation is high on the political agenda in Norway, the financial crisis has highlighted the vulnerability of industries and generated debate about future scenarios whereby the country can no longer rely on income from the North Sea oil and gas. Data from the European Scoreboard (2009) and Statistics Norway (2007) found that the level of innovation in Norwegian businesses is low compared to other EU countries, with few companies introducing new or substantially changed products and a tendency for the same companies to be innovative.

40
Eden Partners (2012). Design Demand National Evaluation 2007-2012.

A study in 2009 by the Norwegian Design Council (now The Norwegian Centre for Design and Architecture) showed that companies that use design-driven innovation demonstrate twice the level of innovation, leading to four times as many patent applications. Following the publication of a white paper on innovation and to address the low innovation rate and market failure, the Design Council was given the mandate by the Ministry to develop a business-oriented programme to increase design-driven innovation.[41]

Programme

Research had shown that where design was being used, it was often at the final stages of product development, simply to style an object to make it more appealing to customers.

The Design-Driven Innovation Programme was set up to encourage a different approach. Its aim was to bring design into the very beginning of product or service development – the idea-generation phase. The Design-Driven Innovation Programme specifically targets this phase, supporting businesses to translate information about their users into practical concepts and opportunities.

> "The potential for design-driven innovation that focused on a methodical and user-focused approach to the ideas phase is great, but few businesses applied this methodology in Norway." [42]

41
Norwegian Ministry of Trade and Industry (2008-2009). An Innovative and Sustainable Norway. Short Version of the White Paper, Report No.7 to the Storting. P.13.

42
www.norskdesign.no/the-programme/category9108.html

The programme aims to leave companies with concepts that are ready to be commercially developed. The ultimate goal is for these concepts to reach the market as innovative new products and service. During the programme the funded organisation are supported in:

User Research: learning how to uncover the needs of use;

Identifying Opportunities: turning user insights into design concept; and

Idea Clarification: using design methods and industry expertise to choose a concept to be developed and implementation.

Following the 2014 call for applications a total of 740 applications for funding across 90 distinct sectors was received. As of 2014, they have provided support to 103 organisations working in industries as diverse as aerospace, insurance and fishing. Once the value had been demonstrated, in most cases the initial modest funding by the Norwegian Design Council was followed up by significant R&D investment by the companies themselves. Companies involved emphasise that this investment would not have been made without the initial support from the programme.

Service Design Programme

Country: Wales
Funded by: Welsh Assembly Government
Investment: £1.2m (2010-2013)
Run by: National Centre for Product Design and Development Research (PDR), Cardiff Metropolitan University, Wales

Background

In 2009, findings from an Engineering Employers' Federation report [43] revealed that services account for between 15% and 20% of total revenue earned by UK manufacturers (compared with 66% across UK industry as a whole). The report also identified that these services tend to focus on fixing products, ongoing maintenance, marketing and sales, for example, rather than a strategic move towards 'servitisation'.

43 Engineers Employers Federation (2009). Manufacturing in Wales: Building a Balanced Economy on a Secure Manufacturing Base.

Intriguingly, a survey conducted in 2010 by the same organisation showed that the number of companies introducing or planning to introduce service innovation would jump from 17% to 48%, highlighting the rise in interest in services from manufacturers.

This shift from products to services provides clear opportunities for service designers who can support manufacturers in realising their aims. Design offers a clear path for businesses to add value to their offer, servitise their products or even adopt new service-based business models. The Service Design Programme for Wales set out to capitalise on this shift and demonstrate how service design can help companies achieve this, kick-starting a demand for design-led service innovation.

Programme

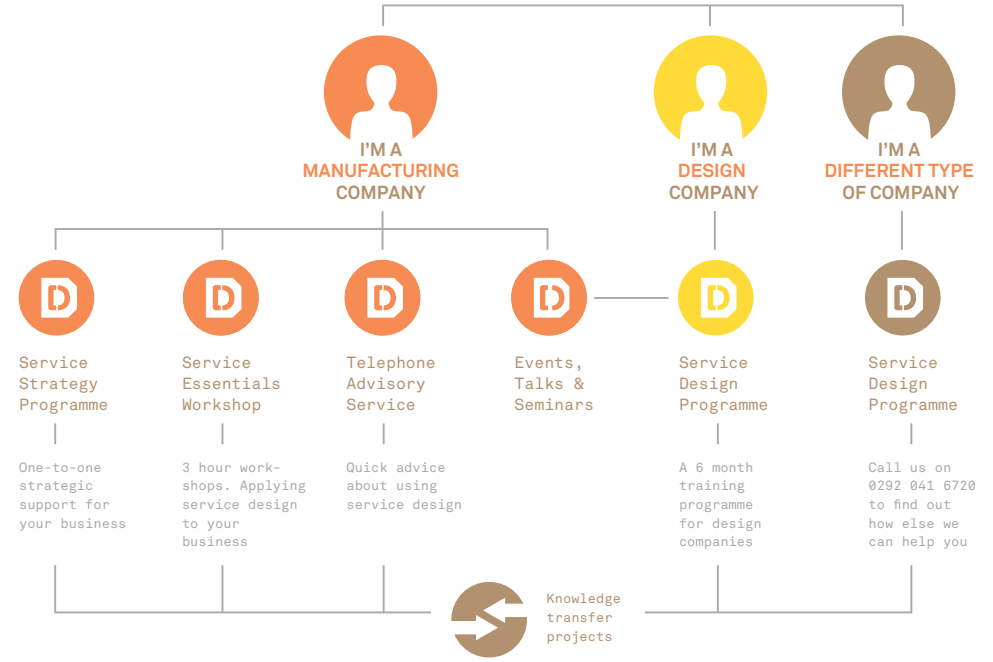
The Service Design Programme was developed and delivered by PDR on behalf of the Welsh Assembly Government and uses service design as a tool for economic growth within the advanced materials and manufacturing sector.

The Service Design Programme began in July 2010 and ran until May 2013. The programme was set up to address both supply and demand by creating demand among Welsh manufacturers and expertise in service design among Welsh designers. The programme worked at a strategic level with 90 companies or 'The 90'. The programme's key performance indicators are made up of a balance of delivery indicators (number of seminars and diagnostic interviews) and impact indicators (new services launched, R&D investment induced and jobs created). Combined, these indicators have a significant impact on both behaviour and practice within a business.

The model of business support developed is based on a four-step process: Events, Telephone Advisory Service, Service Essentials Workshop and the Service Strategy Programme. In order to create meaningful impact on a business it is important to engage it over a longer period of time. The shift from products to services is as much about a change in management culture as it is about a change in business practice.

The Service Design Programme also works with the design sector in Wales to create a ‘supply’ of service design expertise, ensuring that once companies have received their funded support local service design expertise is available to deliver the work. Although there are some exceptions to the rule, most companies accessing government support for innovation are SMEs or micro-businesses. It is these businesses that lack the critical resources to contract service design expertise or develop an in-house capability that value design support programmes the most. As well as being open to support, these SMEs also have a great amount of potential as shifts in mindset, approach and business model are easier to implement within smaller companies.

Service Design Programme – Offer Diagram



Innovation by Design
Country: Ireland
Funded by: Enterprise Ireland
Applied Research Enhancement Scheme
Investment: €121,000 (2007-2008)
Run by: Centre for Design Innovation,
Institute of Technology Sligo

Background
Initially funded under the Enterprise Ireland Applied Research Enhancement Scheme from January 2006 to December 2009 the Centre for Design Innovation (CDI) based at the Institute of Technology, Sligo specialises in design-driven innovation for both the private and public sector in product and service design.

Programme
Innovation by Design was a mentor-led programme based on best practice in Europe and the US, operating from June 2007 to September 2008. Developed by the CDI, the programme involved five SMEs across a range of sectors – software, manufacturing and services – based in the northwest of Ireland. Each company participated in a tailored programme that enabled them to develop innovative products and services and to generate competitive advantage well beyond the end of their involvement in the programme.

Two Design Associates from the CDI with extensive experience in design support, industry and research engaged with the companies at various points to facilitate the programme's aims and objectives. The 18-month programme had a total budget of €120,000. The cost to each company was €1,500, for which it received two network days, three workshops and 5–7 days of mentoring sessions. The real cost was around €10,000 per company. The network events occurred roughly every three months, including workshops on specific issues such as branding or product development, and an online site was created to manage communications and provide a digital forum for the organisations to communicate at any time. In these activities, the non-competitive network was crucial and of unique value.

Within 15 months each company applied a design approach to understanding customers' needs first, which is key to identifying the right ideas to commercialise.

Avenue Moulding mapped its service offering, developed a well-received quick-start mould manual for its customers and engaged with a new design firm.

Connacht Gold engaged with Institute of Technology Sligo design students and staff to develop a range for 12-month and 5-year product concepts. Elements of the work have been incorporated in new product marketing.

Infacta compled a rebranding programme of its company and has hired a full-time designer.

Mantis Cranes made over two dozen design modifications to a developing crane and implemented a new product-development process.

Ireland West Airport made adjustments to its check-in and queuing procedures, as well as fixing an issue with its luggage trolleys and developing concepts for new, sustainable and better-designed trolleys to enhance the passenger experience.

According to Felim McNeela, Managing Director of Avenue Moulding, "The benefits really became clear to us when we began doing user-centred design. It related specifically to ourselves and the problems that we have had". The five case studies generated from the companies that participated are relevant to a broad range of SMEs. Although there are lessons to be learned from multinationals like Apple and Toyota, regional case studies of similar size and scope have greater resonance.

It was recommended that a follow-on programme be created to build on the initial success; help fund larger-scale projects; and integrate design processes and tools holistically throughout each organisation's structure to move them towards a design culture. This however has not materialised to-date however the CDI has continued since 2010 to be involved in projects for both the public and private sector up to the value of €2.2m and continued to respond to industry through Enterprise Ireland's Innovation Voucher Scheme.[44]

44
FP7 €1.6m, INTERREG €0.6m and more than 25 Innovation Vouchers.

SME Wallet Programme
Country: Belgium (Flanders Region)
Funded by: Enterprise Flanders
Investment: €202,500 (2013-ongoing)
Run by: Design Flanders

Background

Design Flanders is part of Enterprise Flanders a government agency charged with developing the economy and enterprises in Flanders, the Dutch-speaking northern part of Belgium. One of the core functions of Design Flanders is to encourage companies to incorporate design in their operations, one way they achieve this is through their SME Wallet programme.

Programme

The SME Wallet is a business support delivered by Enterprise Flanders. It enables SMEs in Flanders to obtain subsidies of between €100 and €25,000 for training, advice, technology watch, advice on internationalization, coaching and strategic advice. In Spring 2013, design management was introduced as an eligible cost as part of 'strategic advice' by the Flemish Minister-President and Minister of Economic Affairs, Kris Peeters. Design management has been recognised by policy-makers as a tool for companies to support the uptake and integration of design as a strategic tool for growth. Now companies can access a minimum subsidy via Design Flanders of €7,500 and a maximum of €25,000 for design management expertise. Smaller projects can also be subsidised and the threshold for strategic advice will be reduced. The aim of including design management in the strategic advice pillar is to encourage companies to integrate the design expertise throughout their company.

Innovation Challenge Programme
Country: Ireland and Northern Ireland
Funded by: InterTradeIreland
Investment: €1.5m (2011-2016)
Run by: InterTradeIreland

Background
The 2009 report 'Management Matters in Northern Ireland and Republic of Ireland' highlighted a significant gap between the average management practice scores of manufacturing firms in both Ireland and Northern Ireland and those in the countries with the best management practices. This and additional research from InterTradeIreland's All-island Business Monitor survey pointed to a lack of strategic planning around how innovation can contribute to business growth.

The Challenge Programme was established to address a significant factor affecting innovative capability by implementing a programme that will embed the key thinking, practices and tools for a disciplined approach to innovation. This includes a focus on the design-process.

Programme
The Challenge programme is aimed at ambitious companies with more than 10 employees and operates in 3 stages:

Briefing events: potential participants will hear about the tools and techniques used in the Challenge Programme which can be taken away and used by the business. The purpose of this stage is to give confidence, insights and encouragement to business leaders, to demonstrate that with the right mindset, tools, skills and expert mentoring – businesses can be transformed.

Workshops: Participants will take on the 'challenge' by applying the new learning, tools and techniques to their own company situation. Interested companies will then be asked to submit a growth plan and compete for the intensive 1-to-1 in-company innovation project. Winning companies will be selected to take part in the in-company mentoring stage.

In-company mentoring: Companies benefit from a specialist in-company mentoring programme to guide them through delivery of their plan. This consists of up to six days of 1-to-1 assistance (on their premises) at a pace and in a way that works for them to:

- Develop an effective business plan to incorporate innovation at the core and improve business management, planning and strategic decision making;
- Create additional ideas that can be developed in the future;
- Learn and apply a rapid commercialisation process to ideas using techniques that minimise time, money and risk; and
- Create a strong culture of innovation and improve innovation management in the company.

In the last 2 years, InterTradeIreland has helped more than 20 companies transform their business in just 9 months by exploiting a highly profitable route to significant business growth.

“New Zealand must develop its design capability in order to grow its international competitiveness. There is compelling evidence that businesses are more successful when they employ design as a strategic discipline”

Department of Industry and Regional Development (2003). Success by Design: A Report and Strategic Plan from the New Zealand Design Taskforce. P.14.

Actions

This chapter sets out a range of actions to develop the application, adoption and awareness of design-driven innovation amongst Irish-owned SMEs. These actions are set out based on the opportunities identified in the research for the Irish cases and are also linked to identified best practice approaches from around the world.

Ireland has an opportunity to begin this process and to move its SMEs along the design ladder as Denmark did to a more strategic and developmental application of the design process.

Short Term Actions

Identified Opportunities	Recommendations	Responsible Organisation(s)
01 Increase the Competitiveness and Growth of Irish-owned SMEs through the Greater Application of Design-Driven Innovation Processes	Establish a Pilot Design-Driven Innovation Support Programme for Irish-owned SMEs / Learn from Best Practices Programmes e.g. 'Better by Design' New Zealand / Evaluate Impact of Supports	Department of Enterprise, Jobs and Innovation / Enterprise Ireland / Local Enterprise Offices
02 Raise Awareness of the Potential Benefits of Design-Driven Innovation Amongst Irish-owned SMEs	Establish an Awareness Raising Programme e.g. Denmark's Design Ice-Breaker Scheme	Irish Design 2015 / Enterprise Ireland / Local Enterprise Offices
03 Develop a Greater Understanding of the Application of Design-Driven Innovation amongst Irish-owned SMEs	Benchmark Irish owned SMEs against the Design Ladder Methodology Or Develop Ireland's Community Innovation Survey to Include Relevant Question on the Application of Design	CSO - Enterprise Ireland / Department of Enterprise, Innovation & Jobs / Irish Design 2015

Medium Term Actions

Identified Opportunities	Recommendations	Responsible Organisation(s)
01 Develop a National Strategy to Accelerate the Application of Design-Driven Innovation Processes	Broaden the envisaged Strategy for the Design Sector under the Government's Action Plan for Jobs to Include a Focus on Developing Design-Driven Innovation Processes	Department of Enterprise, Jobs and Innovation / Enterprise Ireland / Design and Craft Council of Ireland
02 Recognition of Design as a Key Tool to Drive Innovation Performance in Ireland	The Successor to the Strategy for Science, Technology and Innovation 2006-2013 should Recognise and Integrate Design-Driven Innovation Practices / Design-Thinking Represents a Potential Additional Dimension to Ireland's Tools of Innovation	Department of Enterprise, Jobs and Innovation / Enterprise Ireland / IDA / Science Foundation Ireland / Higher Education Authority / Irish Research Council
03 Broaden the Role of The Advisory and Development Services	Business Supports in Ireland should Include the Provision of Mentoring Supports from Design Management Professionals e.g. See Design Council UK and Design Flanders Programmes	Enterprise Ireland / Local Enterprise Offices
04 Increase the Number of Design-Driven Innovation Courses across Higher Level Education	Undertake the Measures Required to Integrate Design-Driven Innovation Process Training in both Design Programmes and across Other Degree Programmes and Further Education	Higher Education Authority / Third Level Institutes / Education and Training Boards

Long Term Actions

Identified Opportunities	Recommendations	Responsible Organisation(s)
01 Increase Exposure to Design Processes in Primary and Secondary Education	Develop an the Integration of Design-Thinking Programmes in both Primary and Secondary Education in Ireland	Department of Education and Skills / Irish Design 2015
02 Encourage the Promotion and Application of Design-Driven Innovation Processes in the Public Procurement System	Develop a Programme to Reward Design-Thinking Solutions in the Public Procurement Process	National Procurement Office / Public Bodies / SMEs
03 Develop a Network of Centres of Design Innovation Across Ireland to Support Local Industry	Build Upon the Centre for Design Innovation Template at IT Sligo to Create a Regional Network	Third Level Institutions / Local Enterprise Offices

“From our research and experiences, we anticipate that in the build up to 2020, design will be integrated more holistically within innovation policies and smart specialization strategies”

Anna Whicher, Head of Policy, PDR, Wales
Speaking at the SEE Project Final Conference,
Flemish Parliament, Brussels, February 10th 2015.

Appendices

Appendix 1: Attendees at Expert Workshop on Design-driven Innovation

June 12th Wood Quay Venues, Dublin Civic Offices

Richard Christie, Head of Design & Commercialisation Services, Invest Northern Ireland

/

Eddie Cummins, Assistant Director, The CIRCA Group Europe

/

Frank Devitt, Senior Lecturer, Design Innovation, Maynooth University

/

Calre Dunne, Assistant Secretary General, Department of Jobs, Enterprise & Innovation

/

Gerry Finn, Director, Northern & Western Regional Assembly

/

Áine Fox, Senior Executive, IMDA, IBEC

/

Aidan Gough, Strategy & Policy Director, InterTradeIreland

/

Bob Gray, Director, Red&Grey Design & Undergraduate Lecturer, National College of Art & Design

/

Jim Green, Managing Director, Keenan Systems

/

Ali Grehan, Dublin City Architect, Dublin City Council & Founder of PIVOT Dublin

/

Karen Hennessy, CEO, Design & Crafts Council of Ireland

/

Patrick Lawlor, Senior Consultant, The CIRCA Group Europe

Laura Magahy, CEO MCO Projects, Executive Chair Irish Design 2015 & Chair of the Design & Crafts Council of Ireland

/

Bernadette McGahon, Science & Technology Manager, InterTrade Ireland

/

Mark Murray, Product Designer, Dolmen

/

Adrian O'Donoghue, Policy & Research Officer, Northern & Western Regional Assembly

/

Breda O'Toole, Head of Regional Business Development Manager, IDA

/

Sean Purcell, Senior Executive Officer, Local Enterprise Office, Dublin City Council

/

Linzi Ryan, Senior Design Research Associate, Centre for Design Innovation, IT Sligo

/

Barry Sheehan, Head of Design, Dublin Institute of Technology

/

David Tormey, Senior Lecturer & Researcher, Centre for Design Innovation, School of Design & Engineering, IT Sligo

/

Brendan Wafer, Managing Director, The CIRCA Group Europe

Appendix 2: Interviewees

Sean Blaney, Managing Director, Quad-X

/

Maurice Buckley, CEO, National Standards Authority of Ireland

/

Gareth Coady, Managing Director, Bluebridge Technology

/

Jim Costello, Managing Director, Forest Produce

/

Gerald Craddock, Chief Officer, Centre for Excellence in Universal Design, National Disability Authority

/

Richard Christie, Head of Design & Commercialisation Services, Invest Northern Ireland

/

Frank Devitt, Senior Lecturer, Design Innovation, Maynooth University

/

Clare Dunne, Assistant Secretary General, Department of Enterprise, Trade and Employment

/

Stephen Dunniece, Technical Director & Systems Design Engineer, Cirdan Imaging

/

Tom Edgar, Head of Consultancy at Queen's University Belfast

/

Ali Grehan, Dublin City Architect, Dublin City Council & Founder of PIVOT Dublin.

/

Denis Hayes, Managing Director, Industry, Research & Development Group

/

Brendan Hogan, Director of Engineering, Aerogen

Sean McNulty, CEO, Dolmen Design and Innovation Consultants

/

Deirdre McCormack, Chief Marketing Officer, Mcor Technologies

/

Danny McCoy, CEO, IBEC

/

Stephen McGowan, Director of Strategic Delivery, Department of Culture, Arts and Leisure

/

Alex Milton, Programme Director, Irish Design 2015

/

Anthony Nordon, Chairman, Anord Control Systems

/

Peter Reilly, R&D Director, Valeo Vision Systems

/

Linzi Ryan, Design Research Associate, Centre for Design Innovation, Institute of Technology Sligo

/

Barry Sheehan, Head of Design, Dublin Institute of Technology

/

David Tormey, Senior Lecturer & Researcher, Centre for Design Innovation, School of Design & Engineering, IT Sligo

Appendix 3: Meetings Held

Louise Allen, Head of Innovation Programmes, Design and Crafts Council of Ireland
/
Brendan Coogan, Assistant Principal, Economic Division, Department of Finance
/
Neil Cooney, Senior Economist/Policy Adviser, Enterprise Ireland
/
Eugene Forde, Department of Enterprise, Trade and Employment
/
Karen Hennessy, Chief Executive, Design and Crafts Council of Ireland
/
Stephen Hughes, Manger Construction, Timber and Consumer, Enterprise Ireland
/
Chantelle Kiernan, Scientific & Innovation Advisor, IDA
/
Laura Magahy, CEO MCO Projects, Executive Chair Irish Design 2015 & Chair of the Design & Crafts Council of Ireland
/
John Moran, Former Secretary General, Department of Finance

Appendix 4: Consultees

Annelies Thoelen, International Project Manager, Design Flanders
/
John Hatrick-Smith, Design Catalyst, Better by Design, New Zealand Trade and Enterprise
/
Yvonne Harris, Research & Evaluation Manager, Design Council UK
/
Laura Lee, Professor of Architecture, Carnegie Mellon University
/
Christina Melander, Senior Project Manager, Design and Innovation, Danish Design Centre
/
Inés Pelaez, Innovation & Design Strategy, Barcelona Design Centre
/
Sara Graham, Head of Skills Academy, Northern Ireland
/
Paul Thurston, Head of Service Design, PDR, Cardiff
/
Helga Willems, International Projects, Design Flanders

Centre for
Design Innovation