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# Assessing the Effectiveness of Design-led Innovation Support for SMEs

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## Abstract

This paper aims to understand the effectiveness of design-led methods and approaches to support small and medium size enterprises (SMEs) with innovation, and how their needs are fulfilled by support instruments through investigating the activities of “design-led innovation centres”(DICs) that have been established in the UK. These Centres promote design practice and facilitate design driven methods to improve innovation processes within SMEs. This study examines the content, motivations, methods, procedures and general principles of these centres to find out what appears valuable and what does not seem useful within a facilitated innovation process.

The data referred to in this paper were collected through a series of interviews undertaken with individuals representing DICs, SMEs, design consultants and government agencies. This paper presents several results derived from different experiences and the opinions of respondents. It was found that DICs offer a process-oriented approach to help SMEs to identify their problems and encourage them to build an innovation culture for continuous growth, whereas SMEs have a product oriented approach for pursuing innovation. This mind-set difference affects how the value is perceived and influences their communication and expectations. The findings of this study are as follows; tangible outputs such as detailed, well-tailored design briefs are considered as more effective; secondly, deeper interventions through long-term partnership help embed design into company culture. Finally, for the effectiveness of DIC support, having established criteria to select which SMEs to work with is important. These criteria may include financial readiness, curiosity, motivation and commitment for innovation.

These findings may inform innovation support programmes and help improve the efficiency and the effectiveness of their provision.

**Keywords:** design-led innovation, SMEs, design mentoring

## Introduction and Background

This paper deals with the problem of finding ways to assist SMEs with innovation for economic growth and to establish effectiveness of design as a tool for business innovation. Despite many efforts that have been made during the last few decades to stimulate SMEs to realise innovations, there still is a lack of knowledge about the nature and extent of SME support needs and the mechanisms for delivering it effectively (Nauwelaers & Wintjes, 2002). This paper, therefore, investigates how design provision fulfils the needs of SMEs and assists the route to innovation through investigating the activities of UK based “design-led innovation centres”(DICs). SMEs<sup>1</sup> make up the largest proportion of all businesses in the UK (BIS, 2010), which is why this research is of particular relevance.

The relationship between innovation, continuous growth and competitiveness in the market has been widely addressed by numerous researchers (Rosenberg, 1976; Mowery & Rosenberg, 1979; Cavusgil & Yavas, 1984; Samli, 1985; Porter, 1988; Grosse, 1996; Freeman, 1997). SMEs are confronted with particular problems constraining their innovation activities. Barriers to innovation are grouped into internal and external barriers (Piatier, 1984), which are a result of inadequate internal resources and expertise and environmental factors; such as limited budget for investment, limited access to skilled labour, problems in carrying out marketing, project management, bureaucratic hurdles, and the trouble finding “suitable” partners to collaborate with (Mohnen & Rosa, 1999; Ylinenpää, 1998; Acs & Audretsch, 1990; Freel, 2000). Nieuwenhuis *et al.* (1999) state that SMEs need to collaborate with external knowledge sources since they usually do not possess large internal knowledge bases.

Various platforms and funding bodies aim to link industry and academia to achieve sustainable economic growth through knowledge exchange (Scottish Funding Council, 2012; Technology Strategy Board, 2012a; NESTA, 2012). There are several programmes that have emerged to support innovation, to address challenges faced by SMEs, and to make SMEs more competitive by providing academic expertise. SMEs have been encouraged to make use of funding schemes and to utilise the services of knowledge centres.

Non-departmental governmental organisations often have different strategies and procedures to support businesses in diverse fields and may not have a design focus (Technology Strategy Board, 2012b). SMEs working with high technology have a better chance to be supported by government than the ones operating with low technology. Design and design-led innovation are sometimes neglected while supporting SMEs innovation. For instance, an informed expert commented that within SMART: SCOTLAND<sup>2</sup>, 100 companies out of approximately 130 that apply each year are awarded funding to support technically challenging, commercially focussed

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<sup>1</sup> Enterprises qualify as SMEs if they employ less than 250 headcount and have a turnover less than 50 million (European Commission, 2009)

<sup>2</sup> Smart Scotland is an award scheme for SMEs provided by the Scottish Enterprise <http://www.scottish-enterprise.com/fund-your-business/innovation-and-rd-grants/smart-scotland.aspx>.

R&D projects. He<sup>3</sup> underlined that the programme promotes “*technical innovation*” rather than what he called “*design innovation*”. Design is related to, but also different from, innovation. This research does not investigate this relationship but looks at how design-led support can assist innovation in small businesses.

The Design Council, formerly a non-departmental public body of the Department for Business, Innovation and Skills (Design Council, 2012) aims to promote design and drive awareness of how design operates within the business context. It plans to improve the competitiveness of companies by the strategic use of design and presents design as the link between creativity and innovation (Cox Review, 2005). The Designing Demand Programme (2008) of the Design Council is a leading example adopted by many DICs. The term “Design-led Innovation Centre” (DIC) in this study describes university-based design and innovation centres that introduce design methods and thinking to achieve innovation and sustainable structural changes in SMEs. The Sharing Experience Europe (SEE) Platform (2012) presents a large collection of case studies that reflects the experiences of design programmes and practices, design provision and promotion.

These programmes give access to expertise and knowledge that might otherwise be unavailable to them. For instance, SMEs are often not an active participant of the design process while working with design consultancies, which might cause alienation within the process. SMEs might experience a lack of control over the design process. This need, being involved in the process, was mentioned in an interview conducted with a design consultant who pointed out that companies that are informed throughout the process feel more satisfied regardless of the design outcome. Another design consultant reflected on his experience during the interview that when a new product designed for an SME is not used strategically in relation to corporate identity and not emphasised commercially, it then does not bring any good results to the market. He underlined that it should not be perceived as a fault of the design consultant<sup>4</sup>. There is a need for companies to gain a holistic understanding of design to strengthen their competitiveness. DICs propose to increase SMEs’ capabilities and skills in innovation and design by making them part of the process.

DIC programmes build on the observation that small companies often lack a strategic and holistic perspective that brings together a new product development, corporate identity, customer communication and service delivery. In addition a DIC respondent indicated that SMEs are often not sure how to work with design consultancies. They might think they need a new logo or a website for their companies, but in reality they need to define their corporate identity first by questioning their assumptions and uncovering their true needs. DICs are usually not actively involved in undertaking actual design work, instead they serve as brokers of design by carrying

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<sup>4</sup> For ease of writing and reading, “he” or “his” is used regardless of gender of the interviewee throughout the paper to protect confidentiality.

<sup>4</sup> In this study, design consultant or design consultancy is used to describe external designers who provide a professional design service for the creation and implementation of new products, services, or materials for the development and communication of corporate identities.

out design audits and identifying problems and market opportunities which aim to generate a demand to acquire further design expertise, such as working with a design consultancy or recruiting an in-house designer.

DICs employ numerous methods to help SMEs with their product development process. Successful case studies are published on websites and found in reports, however it is often difficult to extract the knowledge from those case studies revealing what appears valuable and what does not seem useful within a facilitated innovation process. It is not clear to what extent innovation activities undertaken by a specific SME will be considered successful or not? The present study therefore undertakes a series of interviews with DICs to deeply examine the content, procedures and general principles of their interventions. The interviews conducted with SMEs aim to uncover the impact of design interventions. How the research was undertaken and how the data were obtained is explained in the next section. The Research Findings Section presents how the DIC model works, it discusses the process and outcomes of interventions and it explores the impacts on SMEs. The final section offers conclusions that may inform innovation support programmes and help improve the efficiency and effectiveness of their provision.

## Research Design

The research follows a qualitative research methodology and an interpretative phenomenological paradigm. The paper assembles the primary data result from the conducted interviews and observations. The review of the literature, including case studies, policy report and web sites has helped to scope the topic and provide an overview of the operation of design and innovation centres. The interview technique was selected for pursuing in depth information (Denzin 1978; Spradley, 1979; Patton, 1980) about the effectiveness of design interventions run by DICs. For this study, twenty-two interviews were undertaken using a semi-structured interview schedule. The interviews were conducted in over a ten-month period in 2012, fifteen of them conducted face-to-face, six of them by phone and one via Skype. Each interview was 30-90 minutes in duration. To study DICs, six representatives were interviewed about their experience in working with SMEs. The interviewees were design associates, project managers and directors with either a business background or design background working within DICs in the UK. To gather perspectives from SMEs, directors or owners of eight British SMEs were interviewed, who either have worked with these centres or with external designers within the last five years. The companies were selected from different commercial sectors. To understand different stakeholders with an interest in innovation support, six design consultancies and two representatives from government agencies<sup>5</sup> were also interviewed (Figure 1).

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<sup>5</sup> Government agency in this study means non-departmental public body encourages economic development, enterprise, innovation and investment in business.

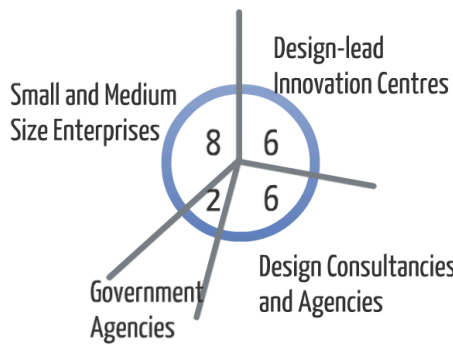


Figure 1 Number of interviews per different stakeholders

The data collection process was supported by participant observation that included attendance at workshops, lectures and networking activities during the events. Within eleven observation activities, three of them master class-lectures by designers, two of them DIC workshops, two of them start-up essentials workshops held by business experts and two innovation workshops run by business advisors (Figure 2). Non-designer events were observed in order to understand the differences in approaches and how this can influence the effectiveness of interventions.

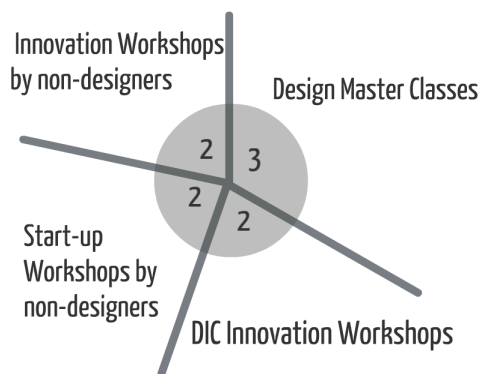


Figure 2 Number of observations

The analysis was undertaken using the thematic analysis method, at an interpretative level (Boyatzis, 1998). First, the data was summarised and organised to show patterns in semantic content, then the content was examined to identify the underlying ideas, assumptions, and conceptualisations. This thematic analysis method allowed the research to theorise the significance of the patterns and their broader meanings and implications in relation to previous literature (Patton, 1990). This approach allows the researchers to categorise common and repetitive themes that appeared in the interviews but not to disregard themes that appeared only once if they are considered to be important in relation to context (Patton, 1990). The data was categorised into several key themes: nature of the interventions, methods and tools, effect of the funding framework on the interventions, participation of the SMEs, difficulties and problems encountered, and understanding of design needs in the company.

In terms of limitations of our study, interpretation is an ongoing and evolving task and data collection is still ongoing with SMEs and government agencies thus the findings presented in this paper are to be considered as preliminary.

## Research Findings

This section describes how DICs work by presenting their content, activities, resources and outputs. In order to describe DIC activities, process and analysis clearly, findings are grouped into several subheadings, which reflects the interview structure, re-occurring themes and important topics derived from the review of the literature. These subheadings are; delivery format, the leading notions, tools and methods, outputs, follow-up, evaluation, selection of participants, funding framework, and integration of design in the company. Each subheading is discussed through the interview findings and observations on the basis of what is found to be successful or unsuccessful, and how it contributes to design and innovation processes within SMEs.

### The Nature of Interventions and Delivery Methods

The DICs incorporate workshops, advisory meetings, telephone support, and networking activities as part of their interventions. Workshops can be considered as the predominant activity and are in two formats: “one-to-many” and “one-to-one”. The one-to-many workshop aims to gather many companies to introduce design and creative thinking. It utilises interactive and visual activities and usually takes from two hours to half a day, which is effective in terms of driving design awareness, introducing a new perspective to companies, and reaching a large number of SMEs. A One-to-one workshop or an advisory support is delivered to a single company, and is more tailored to individual company needs. It often takes two days, but sometimes can support a company up to five days. Designers aim to fully understand and explore the company culture and values, product potential, and market opportunity to work with them most effectively. These meetings, which can be held in the company or offsite, involve visual and hands on activities such as sketching and quick prototyping of ideas.

Interviews revealed that workshops are predominantly planned (including scripts and visuals) and facilitated by designers and individuals with business experience working in DICs. These workshops adopt an experiential learning approach encouraging peer group learning. These workshops might provide a refreshing and concentrated experience that is often significantly different from the company’s everyday activities. It was observed that SMEs enjoy participating in workshops. DICs indicated that a design perspective, which is participatory, non-hierarchical, encouraging and confidence building, benefits SMEs. DICs emphasise that even a company with an integrated innovation strategy might benefit from a new perspective. Creative insights might result from the engagement of contributors with different backgrounds and experience. Based on the observations at workshops by designers and non-designers, the design perspective allows more room for collaboration, networking and reflection by its hands-on, group activities. One SME mentioned that the workshop experience brought a new perspective to the employees who attended the workshop with its collaborative and open learning content. Observations showed that networking activities that allowed SMEs to share their experiences were found to be useful.

Therefore, interventions that enable and trigger open discussion, and that encourage questions and answers on mutual topics are considered a good approach for SMEs.

## The Theoretical Approaches of DICs

DICs pursue a research-based theoretical approach. Their understanding of innovation is often design-led rather than technology push, or “non technology push” (Liem & Sanders, 2011). Design thinking, human centred design and co-design are some of the common approaches referred to by DICs. Sustainability (covering eco-design and green design) has been observed in addition to these approaches giving an additional focus or sometimes the main emphasis that informs the interventions. The approach is derived from the philosophy underpinning the organisation in which DICs are based. Although the respondents interviewed from the DICs pursue different approaches only minor differences were apparent. Both design thinking and human-centred design underpin the collaboration approach with stakeholders. In addition visualisation and prototyping of ideas were commonly used. DICs have often a participatory mind-set, they usually design with SMEs to transfer their knowledge. These approaches might place an emphasis on methods to enable the analysis of user needs and experience, to achieve their innovation goals, which often generate incremental improvements in their product line. Incremental innovation and smaller design steps are usually preferred by the majority of SMEs interviewed, because they are reluctant to take risk and diverge from their traditional markets.

Design thinking followers were also asked about the helpfulness of design thinking to illustrate the value of design actions. The question was asked based on the fact that there is an ongoing academic debate on the effectiveness of design thinking (Norman, 2010). They provided contrasting yet equally reasonable views on the matter. A DIC respondent pointed out that design thinking comprises a wide range of techniques that best suits the workshop format.

Another one declared that,

*“ [...] I think it is a dreadful term. The rhetoric behind it is again lovely. You have got very persuasive writers about it, Tim Brown, Roger Martin, David Kelly, they are all very persuasive about what design can do. But thinking is completely wrong because the whole point of design thinking is about doing. [...] It is not really about thinking, actual thought processes. [...] What happens in the neurological level is not really articulated in the literature, so I think design doing and design practice they don't sound glamorous but they are better representations of what design can do.”*

## Design Tools and Methods

Various techniques of problem definition, idea generation, and quick prototyping are used in workshops and one-to-one advisory support sessions. Some examples of these tools and methods are brainstorming (Osborn, 1963), customer journey mapping (Engne, 2012), and 5Whys (Bulsuk, 2009). Two of the Centres that were interviewed developed their own tools based on existing methods. However another two DIC interviewees did not emphasise the



importance of techniques and methods and even found it difficult to name the tools they use. DICs often focus on identifying the root of the problems, and questioning existing assumptions. Hence they prefer methods that defragment problems into components and reveal cause and effect relationships. Questioning techniques like 5-Whys (Bulsuk, 2009) were mentioned as a useful method by two interviewees. In addition, simple well-known tools are predominantly preferred. Almost all DICs use Brainstorming method (Osborn, 1963). Those that focus on sustainable design mentioned that they use specific technical tools to evaluate how sustainable SMEs are, for instance, life-cycle analysis (Environmental Protection Agency, 2012), and quick carbon calculator (Carbon footprint, 2012). One DIC respondent indicated the selection of the tools depends on the individual needs of the SMEs, he commented,

*“It’s about developing that relationship with that company first of all, finding out what their problem root really is.”*

It was reported by two DICs that the level of engagement in using tools might differ for each company depending on the comprehension of an individual. One DIC contact indicated that tools which have formal rigid structures, or not very collaborative, are difficult to engage in. For example, TRIZ (Altshuller, 1996) was mentioned. TRIZ is largely used as a problem-solving tool, but the workshops often focus on identifying problems. In addition, tools such as TRIZ and Six Sigma (Hoerl, 1998) are advanced problem solving methods requiring a high level of experience to use them, for instance referring to Six Sigma, “black belt”-“green belt” are terms used to illustrate the level of expertise using these methods (Hoerl, 2001). A widely accepted view underlines that these tools need expert facilitation to be effective thus SMEs might find it difficult to integrate them into their innovation process without the help of an expert facilitator. A DIC respondent pointed out that although many companies are competing to patent their own tools, there are already hundreds of tools in the market. Some of them are more intuitive and tactile and nicely packaged, but they share a great deal of commonality, he indicated, *“these techniques are just to help facilitate people’s thinking”*.

## Bespoke Design Interventions

The construction of these workshops may reflect the academic style they were written in. A DIC contact defined them as *“structured learning journey of companies”* based on *“more of an academic teaching model”*, however the majority of DIC interviewees stated that the workshops were specifically tailored for a business audience in terms of language and structure.

One DIC interviewee stated that companies found it difficult to contextualise the workshop content and apply it to their existing problems. Another DIC correspondent indicated that the workshop organisers should be *“careful not to make them too generic because then they just become another off-site training day.”* A respondent stated better results were achieved, when one-to-one workshop briefs are written in collaboration with the company. Another DIC respondent indicated that the more workshops tailored to the company field of interest and requirements, the better results

achieved, but to the cost of more time and planning. SMEs are not only different in size, sector, technology and R&D level, age/lifecycle and geographical location, but also in their individual dynamic, and informal knowledge (Tödtling–Schönhofer *et al.*, 2011; Nauwelaers & Wintjes, 2002). Therefore, “one size fits all” type workshops, or talks based on anecdotal best practices may not be easily transferable to SMEs’ problems.

## Outputs Following Design Interventions

DIC interventions produce a design brief and specifications, and a design audit report, which highlights problems affecting SMEs that can be used for seeking further expertise. A well-constructed and detailed design brief is a useful and tangible outcome for SMEs, helping them to communicate their needs with design consultancies more effectively. A majority of design consultancies interviewed pointed out that identifying what company actually need is very demanding within a limited time. In addition, a good design brief ensures the design output (a logo, a website, or a new product/service) fulfils the company needs and contributes to the bigger company strategy.

These interventions usually generate actionable ideas “based on quantity, not quality”. For instance, after a one-to-one workshop a company may have over 30 ideas. Having a great number of ideas might be very valuable to bring new opportunities, expand the company’s limited existence in the market and stimulates confidence in the company, but converting those ideas into commercial opportunities might be still difficult in practice, and would require further expertise. An SME during the workshop indicated that finding ideas is not the most challenging part of realisation of innovation, in his words, “*Ideas come from everywhere*”. He mentioned developing and bringing ideas to the market and making them commercial are more critical.

## Action, Reflection and Follow-up

Metaphorically, workshops are like soap bubbles, very glamorous but they do not last very long. Workshops can be highly interactive and sophisticated, but for maximum benefits the participants need to apply further and immediate effort in order to implement their learning and embed it into the company culture. These interventions are sometimes missing the follow-up necessary for the action-reflection cycle. It was suggested by a DIC respondent that it would be better to hold several workshops distributed over a longer period rather than 2 days to generate long-term impact for the company.

The critical question is what comes next after SMEs receive the DIC intervention and how they take the initiated work forward. Some DICs offer an additional service to realise the actual design work on the condition that SMEs need to cover the cost themselves. Although it seems feasible for SMEs to progress work with the same DIC, which can also contribute to the follow-up process, interviews uncovered that SMEs rarely continue working together with the original DIC. The majority of the interviewees revealed that SMEs do not want to take the risk to work with designers who do not have previous work in the specific field in which the SME operates. Some

other DICs provide a bridge between SMEs and design consultancies to take work forward. However, SMEs may not have allocated budget to invest in further expertise. Yet, a model that offers incentives for the SMEs to take this initial intervention further was observed. The government funded business agency, following the support of DIC, provides financial incentives for SMEs that covers 50% of the cost of engaging a design consultancy. However this practice is not widespread in the practice of DICs and not widely supported by funding bodies as one of the interviews with a representative from a government funded business support agency revealed.

This paper recognises the value of a step-by-step and holistic approach in helping SMEs and recommends that a further step can be included in the funding framework, which is “post-design support” (See Figure 3). The current activities of DICs can be referred to as “pre-design support” that covers the design audit and mentoring stages that guide SMEs to pursue innovation and encourage them to carry out the initiated work. “Post-design support” is a follow-up collaboration between an SME and a DIC. This support captures the reflections from SMEs in their innovation journey providing further expertise to create new design outputs. This step-by-step approach proposes to support companies towards growth.

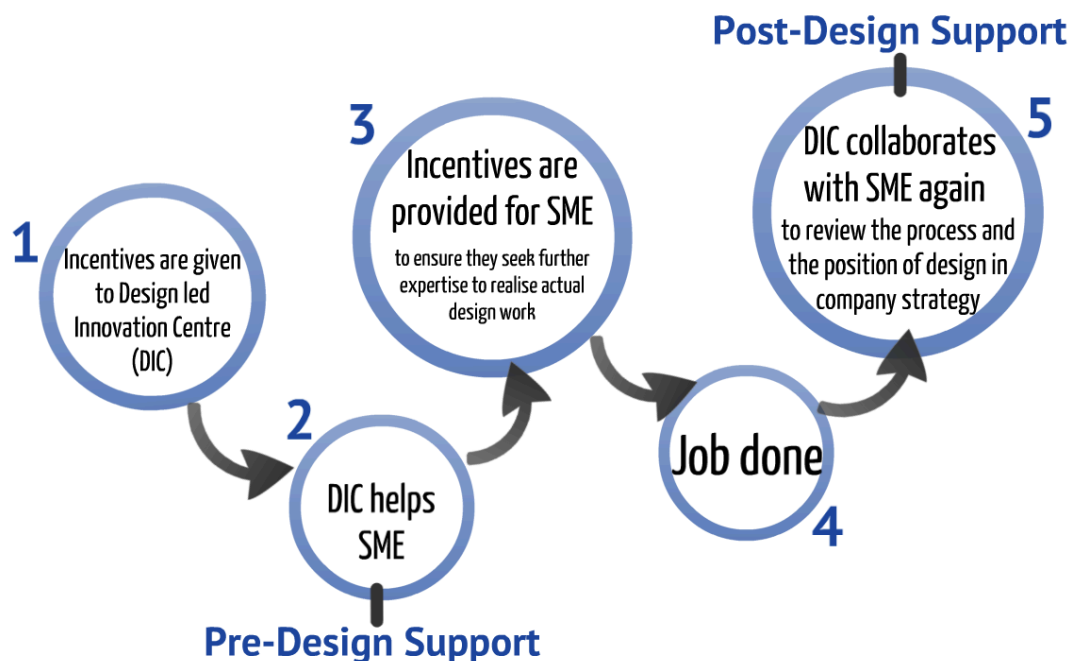


Figure 3. Holistic and integrated DIC work framework

### Measuring the Design Interventions

The majority (3 out of 8) of SMEs evaluated the impact of design interventions through financial indicators. Satisfaction of the SMEs is also another indicator but cannot be empirically measured which sometimes results in approximate analysis. For example, an SME stated,

*“Being happy is our measure,[...], looking at the website and rest of the material and saying that looks professional to me, therefore I have the confidence to present it to other people, it (design outcome) is doing its job by making us believe our brand is better than competition and we believe it”*

Measuring the design outcomes is complex by its nature. An SME responded on how he measures the design outcomes:

*“Well I guess it happens so little that if I can see improvement in functionality and particularly with regard to in terms of reference and objectives then it would be seen as success, if there is no achievement it would be failure but I don’t measure it in a linear scale”.*

It was also observed that it is difficult to isolate DICs interventions from ongoing business activities, which makes it hard to measure the impact of interventions and to quantify the value through financial indicators alone. DICs therefore need to find better ways to indicate to SMEs the value of their interventions.

### Selection of Participants and Focus of Support

SMEs are eligible to participate in DIC workshops. Participation in these subsidised workshops depends on company interest and commitment. These programmes sometimes aim at high participant numbers, for example, a DIC based at Cranfield University plans to interact with 1,000 small businesses over three years (C4D, 2012). The reason behind aiming for a large number of SMEs may result from the fact that quantifying the innovation support is difficult to achieve and the number of contacted SMEs is an empirical piece of data that is easily quantifiable. Yet, the question remains whether this mass targeted approach is well tailored to SMEs’ needs. One DIC respondent indicated that attracting interest to the centre is difficult, and delivering activities to a large number of SMEs is appreciated by funding providers, therefore DICs sometimes have no criterion for selecting participants. However, a lack of established principles may result in DICs ending up working with companies that do not need design-led support, or that are not ready for pursuing innovation or do not have the budget to take work further. Four DICs underlined the importance of having established criteria to select participant SMEs, and the criteria offered by the two respondents included financial readiness, curiosity, motivation and commitment.

DICs sometimes focus on particular sectors, such as food, or renewable energy but often they work across sectors. With interviews revealing that, these sector specific interventions may result from the funding framework or the Centre’s own decision. One DIC respondent indicated that better results were achieved when the Centre focused on one particular sector or one type of design activity, such as packaging or branding. The focus helped them communicate their support more easily with SMEs.

Focusing on a region is also observed but none of the respondents found it important in relation to how the support was delivered. The geographic region as the focus for activity results from the funding framework.

Although DICs target non-design companies, sometimes design companies participate in the workshops, but their involvement is not reported as particularly beneficial. A respondent from a

product design company participated in the workshops claimed he did not learn anything new, or anything he does not know, the workshop just re-emphasised particular issues.

## Funding Framework

Funding frameworks usually define and limit the time period, main activities, general principles for implementation and the measures for evaluation that inform DIC activities. Even though DICs may prefer to give more extended support for SMEs, or monitor them for further evaluation, it may not happen if these interventions are not included in the framework. This affects the flexibility that the DICs may have while working with SMEs.

From the interviews, it was reported that the time allocated for a project is very short and does not support the achievement of long-term results. The funding provided, covers a 3-year time period. It was reported that significant time is required to form the centre and generate publicity.

Designers voiced strong reactions to the issue of time frame, as the following quote illustrates:

*“A whole year goes before you really get going and then you actually need a year and half of time. Because the final six-month is wrapping the project up, doing all the analysis of the impact. So you really have got a year and a half window of operations. So the models that are more targeted and much longer interventions I think are hugely beneficial”.*

Another DIC interviewee, on the other hand, found a 3-year period adequate to achieve results, but acknowledged it is challenging and requires a high level of planning. One DIC respondent noted that operating within a University context might add organisational delays to centre set-up and operations.

One DIC respondent pointed to a dilemma about the workshop model, he stated that when a workshop is free, SMEs may register but they may not attend on the day. When it requires a fee, although reasonable and affordable, SMEs concentrate on the return of investment and may not register for the workshop. Another design associate mentioned the difficulty of convincing individuals to attend a two-day advisory support event within their very busy schedule. It is also difficult for companies to focus on workshops for an entire day without being distracted although this is vital if concrete results are to be achieved.

Consequently, it is suggested that alternative funding frameworks may be necessary to make better use of human-centred design. Construction of these frameworks is very much related to the mind-set of the policy makers. This issue was illustrated in 2009 by the European Commission survey that aimed to identify barriers preventing the use of 'design as a driver of user-centred innovation' which revealed that the most significant barrier considered by 78% of respondent was the 'lack of awareness and understanding of the potential of design among policy-makers' (European Commission, 2009).

## Integration of Design into the Company Strategy

Creating an innovation culture within a company requires a great deal of investment and commitment. All eight SMEs interviewed that have received design-led interventions, seemingly

have a basic understanding of design. Yet, some of them (3 out of 8) refuted that a significant cultural change derived from design-led innovation had occurred in the company's culture. In addition, many SMEs presented an understanding of design that goes beyond style and form, acknowledged the value of design in improving their business capabilities. Yet, none of them seemed to have a holistic understanding of design. There was hardly any mention in the SME interviews illustrating that they consider design as a business management tool or use it strategically to improve the company's positioning of their relationship with their customers. Almost all of the companies design appears to be at the very end of the product development project. Product design was not considered as a way to successfully innovate. The majority (6 out of 8) of SMEs are aware of the value of recognising customers' needs and trying to bring their customers' feedback in the innovation process. Six respondents reported that they often do not have a systematic method for implementing customer feedbacks to innovate and it is hard to recognise their approach as being human-centred.

## Conclusion

This paper has described the nature of DIC interventions, discussed the effectiveness of a design-led innovation model. It recognises the level of diversity among SMEs. Each of them has a different strategy, driving forces, barriers preventing change, capabilities, and differing attitudes towards innovation. In addition, there exist several uncertainties and huge risks attached to innovation. Subsequently, achieving one specific and permanent model that is valid for each and every situation is very difficult. Yet, this study presents several results derived from different experiences and the opinions of respondents. These findings may inform innovation support programmes and help improve the efficiency and effectiveness of their provision.

The DICs explored in this research seemed to promote design and raise awareness of its importance through a process oriented, systematic approach with the aim of bringing a novel perspective and fresh inputs to companies. They identify business issues by reviewing a company holistically. They provide a design management function, which coordinates product development and commercialisation and user experience. They utilise a human-centred perspective to enrich the innovation processes. In contrast, it was observed that the SMEs interviewed were usually goal-oriented with the value almost always evaluated against financial data. They focused on results rather than processes and they conveyed a desire for immediate solutions to their problems. This favours an innovation support approach with a strong focus on practicality, which could be met by workshops that are easily distinguished from standard company training, and provide tangible outputs such as detailed design briefs tailored to each individual SME. These briefs can contribute to future SME-design consultancy collaborations. Another preferred tangible outcome could be assisting SMEs with funding applications and innovation vouchers, an approach adopted and in use by some of the Centres interviewed, with the grants provided enabling SMEs to invest in design and innovation.

Building an innovation culture requires a great deal of time. Unfortunately the short duration of these support projects fail to create a long-term impact. Deeper interventions through long-term partnerships (post-design support) may contribute to embed design into company strategy and to build an innovation culture. Forms of long-term partnership may also include designers in residence, knowledge transfer partnerships (KTPs) or student placements that can be monitored and supervised by Centres. Quality rather than quantity can be pursued by, for example, targeting a small number of SMEs instead of aiming to reach hundreds of them within a limited period of time.

Existing government funding frameworks may have room for improvement. An integrated funding framework may include incentives for SMEs to acquire further expertise. It also contributes to adopt a long-term holistic approach. It may not cover only design audits and monitoring, pre-design-support, but also enhance the capabilities of SMEs using design by providing post-design-support.

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