WP3 - PRE TEST OF PARAMETERS TO MEASURE DESIGN AS AN ECONOMIC FACTOR OF PRODUCTION

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WP3: Pre test of parameters to measure design as an economic factor of production

Work package 2 will result in a draft questionnaire which aims to enable consistent and reliable measurement of design inputs (e.g. investment), intermediate outputs (e.g. new products) and final outputs (e.g. revenue).

WP 3 will seek to pre-test this draft questionnaire to ensure that the concepts, explanations and definitions are robust and consistently understood across the 6 partner nations. This robustness is especially important as previous attempts to define design in a way which enables measurement in the Community Innovation Survey have been unsuccessful when trialled in different nations.

In each country, responses from 25 companies will be sought. In order to evaluate the clarity and robustness of the questions, this sample will be broken into two. In the first instance, the questionnaire will be delivered face-to-face to enable respondents to provide feedback on the clarity of wording and their understanding of the concepts described. The remaining 20 responses will be provided either by email or online survey, with questions included to capture the feedback from the respondents on the clarity of the concepts and difficulties in completing the questions.

To enable comparison of results between countries, care will be taken to capture results from firms with similar profiles where possible. It is anticipated that results from this phase will have two implications:

- Firstly, the draft questions from WP2 will be evaluated and refined

- Secondly, an initial comparison of design as an economic factor of production in the six countries will be produced.

capabilities.

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Appendices

1. Summary

This report presents findings from WP3 of the Euro Design project.

WP3 took the conceptual foundations articulated in WP1 and WP2 as a basis for trialling alternative questions on design. The aim was to identify ways in which firms might be asked about design that would result in data which might go some way to helping quantify the benefits of design as an economic factor of production. It was not the aim of this study to provide data to demonstrate the economic value of design.

Questions were trialled in four stages, each one informing the next. Data was collected from firms in the countries of all six project partners to enable consideration of the robustness of questions across national boundaries. A cognitive-test approach was applied to determine whether respondents were able to understand the concepts introduced and whether they felt able to provide reliable data.

This first round of questions demonstrated that current questions in the Community Innovation Survey do not match respondents' perceptions of design as a part of innovation. Therefore, independent questions on design are needed.

Trials highlighted the inherent difficulties in asking about design, which is acknowledged to be a 'slippery concept' to define. Our proposed definition of design as the integration of functional, social and emotional utilities has proven successful as an underpinning logic to questions, but less successful when used directly in questions.

As a result of these various rounds of testing, 3 questions proved to be both successful at generating useful data on design as an economic factor of production and were also judged to be understandable and possible to answer in testing. Question 1 asks for a comparison of innovations against competition along a number of dimensions. Question 2 examines the introduction of different types of innovation. Question 3 explores whether the design resources used are in-house, outsourced or a combination of both.

2.   Approach

The aim of this part of the study was to develop new questions relating to design that implement the broad definitions of design conceptualised in work packages 1 and 2.
It was not the goal of this work package to collect quantitative data regarding design. However, in testing a range of different questions, it was necessary to use these questions to gather data.

The approach used to test alternative question forms was a process known as cognitive testing. Thus, the study is not concerned with the actual responses to questions and is instead interested in whether the informants understood the questions and to what extent they were able to provide a reliable answer. Thus, in gathering responses, we were explicitly concerned with determining whether respondents felt questions were based on concepts which were clear, whether wording was unambiguous and whether questions could be answered simply.
We were interested in whether data was readily available and to what extent respondents had confidence in their ability to answer. Cognitive testing can also be used to provide insight into how questions might be changed or adapted in order to avoid measurement errors.

This approach to cognitive testing was felt to be especially important given the acknowledged challenges in providing definitions of design which translate in a consistent way between nations and between firms of different types.

Using this approach, it is possible to gather comparatively rich insights into the viability of alternative question formats, with a comparatively small sample size.

The study was conducted over 4 test stages. At each stage, alternative questions and question forms were posed. At the end of each stage, a process of reflection informed the generation of new or revised questions to be tested further in the next stage.
The number of respondents at each stage are summarised in table 1.

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	Test 1 Questionnaire V1	Test 2 Questionnaire V2	Test 3 Questionnaire V3	Test 4 Questionnaire V4
Denmark	5	-	-	10
Sweden	5	4	-	1
Hungary	5	-	3	15
Spain	5	5	4	20
UK	-	-	32	24
Austria	5		3	16

Table 1: respondents at each stage of question testing

The questionnaires used at each stage are reproduced in the appendix.

Stages 1 and 2 were all conducted through either face to face interviews or telephone interviews in each country. For stage 3, an online version of the questionnaire was trialled in the UK, and face to face interviews were conducted in other nations. For the final test, data was collected using an online questionnaire, in order to gain a larger number of responses.

All face to face or telephone interviews typically took up to an hour, and wherever possible, interviews were recorded to enable reflection and transcription (where necessary) after the meeting. Recording also enabled an efficient interview, with no interruption.

Choice of firm was left to the decision of each local partner. Choices were based on a combination of factors, including ease of access, industry and likelihood of interest in the topic. Wherever possible, the ambition was that the firms should be reflective of local industry, in terms of size and sector. The firms thus span a wide range of sector and size. At the start of each interview, the purpose and structure of the interview was explained. All interviewees had a script to guide them.

3.   Test 1: Questionnaire V1

The first version of the questionnaire included a wide set of alternative approaches to asking about design, in addition to some questions from the existing Community Innovation Survey (CIS) as a benchmark. As far as possible, new questions were framed in a way which matches existing questions in the CIS.

These questions were tested through face to face interviews in five companies each in Spain, Hungary, Denmark, Austria and Sweden. A summary report was provided for each nation, reflecting on the ease of understanding and ability to answer each question.

3.1   Results

A summary of feedback from each country will be presented first, followed by a synthesis of feedback for each question. Finally, the implications of the questionnaire as a whole will be discussed.

Austria

There were five respondents from five firms. The interviewees were all top/decision makers in their companies (2 CEOs, 1 product development manager and 1 marketing director/manager. None of the companies had a design director.

All of the companies were reluctant to spend time on a questionnaire which is at a testing stage, rather than a "real" (final) questionnaire; with the possibility to give quick yes/no answers or to give some figures and percentages.

Two out of the five companies had not previously heard about the CIS.

Respondents felt that the questionnaire was too long and preferred providing answers to matrix or binary (Y/N) questions, rather than providing numbers or percentages. Numerical responses to questions were all very rough estimates.

Respondents felt there were inconsistencies in language which resulted in confusion over the definition of terms. They had no clear understanding of either service or process innovation. They felt that clearer definitions at the beginning would have been helpful.

Respondents felt the questions were geared more towards product innovation (although they had different views on how this was defined). There was no consistency on the perception of design within innovation and innovation was seen as product oriented and/or technology driven.

Respondents generally preferred the newly formulated questions in comparison with the existing CIS questions, but there were still issues with comprehension.

Denmark

There were five respondents from five firms. Questionnaires were first sent by mail and participants were asked to phone back or answer vie email mail. Participants included a design manager in a consulting firm, a product manager in a furniture company, a consultant in a Fablab who creates 3D models, a former design director in a large company and a director of TV dramas.

All respondents had concerns over the amount of time that the questionnaire would take. Some were also unsure about how to understand the stated aim of 'seeking to understand the most effective way to measure the contribution of design to economic value creation'. Criticism was being voiced on the questionnaire lacking an assessment on whether an economic contribution has been created.

There was a lot of confusion about the definition of design used to create the questionnaire and what precisely it embraced (e.g. architecture, material products, advertising or signage, as well as numerous other specialties).

Many respondents voiced suspicion on how we could be sure we would send the questionnaire to the right person e.g. in a large medical company? Results were therefore not seen as very sound.

A couple of the participants stated that they could not find themselves/their company in the questions. Questions were being raised on what kind of industries the questionnaire was intended to cover. One participant said it seems it was only intended for industrial firms and would e.g. not take into consideration multiple stakeholders.

Respondents felt that the questionnaire was not able to take into account the different concepts of innovation (or design) that people might have. They also felt that the line between innovation and design is possibly blurred and arbitrary. However, they acknowledged that the focus of the current questions clearly is on innovation without directly linking it to design.

Hungary

There were 5 respondents from 5 firms, all at a senior level.

Companies were in general supportive of the idea of integrating questions on design into the CIS and that of extending the definition of design towards innovation. However, they claimed that before starting to fill out the questionnaire, the proposed new definition of design and also a clear definition of of innovation should be explained in detail. Some companies were doubtful regarding the general goal of the project (measuring design) and therefore there was less willingness to fill out the questionnaire.

Respondents felt that the questionnaire was too long and as a result, time consuming.

Respondents also preferred 'matrix' type of questions instead of percentage and simplistic Y/N questions. Some respondents suggested that simpler language would be preferable, and that when phrasing the questions, more examples would help increase understanding. Respondents felt that many questions were limited to product innovation.

In general, respondents thought that the questions proposed as alternatives to CIS were improved and more effectively captured the role of design. However, at some questions they argued that design is part of the whole innovation process therefore it is difficult to give accurate answers on the percentage of design at each stage of the innovation process.

Spain

There were 5 respondents from 5 firms, all at a senior level.

Amongst respondents, the perception of design and innovation varied, even when first presented with a definition of both. Respondents thus quickly adopted their own concept of innovation (or design) and the answering process became 'conceptually polluted'.

When questions or comments are formulated using the terms of 'technical performance' together with 'aesthetics or emotions', comprehension seemed to improve. This was seen as preferable to using the term 'design'. For many respondents, innovation is viewed narrowly as technological and design is purely about aesthetics.

Comprehension was best when questions are formulated using 'components' rather than using new conceptual terms. For example when asked if the priority of the company is to improve emotional elements of goods, to improve the performance of goods or a combination of both, then comprehension was good. In contrast, respondents found it difficult to state whether design is a priority, according to the definition of design as 'the integration of emotional, social and functional utilites'.

Questions 5.4 (introduction of new products) and 5.5 (how do products compete) might be the most effective questions going forward, but possibly not limited to products.

Sweden

There were 5 respondents from 5 firms, all at a senior level. Interviews lasted between 48 and 68 minutes. Two of the firms produced services, three produced manufactured goods. 3 firms had more than 250 employees, two had between 10-49 employees. 4 of the respondents had no previous knowledge of CIS. Respondents included a Chairman, an Administration assistant, two Innovation Managers and a Design Manager.

There was a general impression of uncertainty regarding what the concept of design contains. As the concept remains 'slippery', wherever a question on design is asked, a definition should be provided. However, the respondents own understanding of design differs and thus, there is a large risk of measurement of different "design" things; even when a definition is provided. However, in questions where design is treated more explicitly, accurate measurement is more likely.

3.2   Comments to specific questions

Comments on specific questions have been synthesised from all responding nations. Please refer to appendix 1 for the questionnaire. Comments from each nation are noted in parentheses (AU=Austria, DK=Denmark, HU=Hungary, SP=Spain, SW=Sweden). In many firms, the The Community Innovation Survey (CIS) was not known or had not been seen before.

Section 1: Defining product innovation and innovation activity
Design was to be understood as being included in the questions on innovation. However, there was confusion in how far 'products' also concern e.g. services and user interfaces. It was being suggested, that the conceptual aspect of products should come more into focus. (DK)

Respondents understood these definitions, but this seemed to be no guarantee that respondents would subsequently answer questions keeping this definition in mind. Design is perceived as being part of this definition, yet it is not obvious (SP).

Respondents generally felt that the definitions were sensible and that design can be viewed as part of innovation (SW).

Innovation was viewed by respondents as closer to technical innovation, and design not fitting into that for them. Respondents viewed the CIS definitions of innovation as not including design (AU).

Q1.2 Innovation Activity CIS: The question is limited to goods and service innovation and does therefore not explicitly capture design (DK). This question is limited to goods and services innovation, so it is about product innovation and not about the other forms of innovation (not mentioned in the title). The question is about innovation, not about design (SP). The question was viewed as not including design (SW).

Q1.3 Innovation Activity Alternative: There were comprehension problems with point (b); changes to experiential or intangible aspects of products/services (HU). Problems with comprehension of point (b); the question was clearer when reformulated using the terms emotion. Respondents felt more comfortable measuring actions or effects such as emotions versus performance than dealing with concepts such as innovation or design. Thus, this question is clearer than current CIS if point (b) is reformulated (SP). Respondents generally find this alternative wording to the question to be more in line with their interpretation of design, although there was still confusing distinguishing between changes of performance and changes of experience (SW).

Section 2: Defining other forms of innovation
There was some confusion between section 1 (product innovation) and section 2 (other forms of innovation) according to CIS. In these definitions, design is limited to products and aesthetics and the boundaries are generally a little blurred (AU).

Q2.1 Process Innovation CIS: Again, the focus here is on innovation, not explicitly design, which leads to confusion (DK). Comprehension is good but the question does not seem to cover design as the respondents understand design (SP). This definition does not encompass design (SW).

Q2.2 Organizational Innovation CIS: Confusion about how far the question captures design as part of innovation (DK). Comprehension was difficult due to fuzzy borders between the options. The question does not cover design (SP). Again, does not cover design or that design is not relevant (SW).

Q2.3 Marketing innovation CIS: Comprehension is good, but astonishment that design here seems to be limited only to aesthetics (DK). Comprehension is good, but design is limited to aesthetics (SP). Design only explicit for changes to product packaging , but respondents also felt that design plays a part in marketing of brands and product placement. The question is also a little unclear whether packaging is part of the product itself. The distinctions between the categories are thus blurred and not clear (SW).

Section 3: Innovation activities

Q3.1 innovation Activities CIS: Very limited concept of design, thus not very effective (DK). Comprehension is good and also ability to retrieve data, but design is limited to products and aesthetics (SP). Mostly easy to answer, but some respondents feel this addresses design as it is for their firm clear (SW).

Q3.2 innovation Activities Alternative: to give percentages is always very difficult to be provided, respondents would prefer a scale of e.g. up to 10%, 10 to 20% etc (AU). Question would be more appropriate if asked about specific kinds of designs and design activities. Responses on questions of percentages will be very flawed, as nothing more than wild guesses (DK). Percentage is difficult to be provided, respondents would prefer a matrix type of question form scaling the importance of design at each activity (HU). Comprehension is good and retrieval is easy except that it is hard to understand the meaning of percentages in the case of acquisitions and training. Percentages provided are guesses not actual measurements that would be hard to provide (SP). Mixed views from respondents, with one feeling it better addresses design than 3.1, and another suggesting that is trying to 'force fit' design within innovation. Respondents found it difficult to allocate proportions as percentages (SW).

Section 4: Innovation investment

Q4.1 Innovation Investment CIS: Comprehension of the question is easy and retrieval is not difficult but it does not capture design (SP). The question does neither effectively cover design activities nor design investment. Provided data might be very flawed as it depends on the person's insight into expenditures. Smaller companies might not distinguish. Respondents also stated that they work very much on a network basis, so there is no way to state in monetary terms the 'innovation investment' (DK). Respondents did not have figures to hand but found the questions mostly clear (SW).

Q4.2 Innovation Investment Alternative: Companies in general could not answer this question as they said that financial data on design expenditure cannot easily be separated as indicated by the questionnaire (HU). Financial data is very difficult to obtained as figures on design expenditure cannot be separated within other expenses of the company. Often employees only work a small percentage of their workhours on design / innovation activities (AU). Data provided would not accurately mirror data on design investments. It might be more accurate if categories would be split (into more than 2 categories). Some knew how much they pay for technologies and services, but how they use this as design device is ill-defined (DK). Comprehension is good and retrieval is possible, using best guesses but actual data is hard to retrieve. Responses would be different than the answers provided under 3.2 about engagement (SP). Polarised responses from Sweden with some respondents finding this an improvement on the CIS question, others disagree. All agreed that providing financial data though is difficult (SW).

Section 5: Some alternative ways of asking about design

Q5.1 Importance of Design: The question is missing a part on what design is in the company and what kind of design activities are being used. One cannot provide accurate data on design using this question. Question is too limited concerning the design aspect, limited to goods and services / performance and functionality (DK). Percentage is difficult to be provided, respondents would prefer Q 5.1. (HU). The question presents some comprehension problems; the question includes components on research, development of goods and services with respect to performance and the development of the intangible or experimental aspect of goods and services. This taxonomy did not make sense to respondents and was thus hard to understand. The inclusion of research added confusion. It is also tautological to ask whether aesthetics are important, as everyone tends to say yes, very (SP). Generally felt to be a clear question, and more intuitive than earlier options. However, there is a paradox in that all respondents will say design is important (SW).

Q5.2 Human Resources for Design: Needs to ask more specifically on what kind of resources are being used. Question on people employed in-house should be specified into full time/part time and comparison to overall number of employees for a more accurate result. (DK) Comprehension was good and retrieval was easy but there were concerns about limiting this just to goods and services. Could possibly introduce data on the total number of employees, or the percentages of employees for each part of the question (SP). Generally straightforward and easy to answer, except where resources are not solely used for design. One respondent noted "Do you have people who are thinking both from an aesthetic standpoint and from a functionality standpoint? ….Which is just going to get lost in so much of this other stuff. This is an interesting question. This makes me pause and reflect about my own organization and who's good at what and do we do enough of this" (SW).

Q5.3 Effort in Designing New Goods and Services: Data provided on design using this question is not estimated to be very accurate. Confusion about what kind of design is to be included in questions that broadly ask about R&D (DK). Again there was a problem when combining a question about design with a question about research. The question is also limited to products (SP). Mixed responses from Sweden, with some respondents finding this

question difficult, others finding it easy. There was some uncertainty about the boundaries between categories (SW).

Q5.4 Introduction of New Products: Design here is limited only to products, which is seen a problem. Many found it hard to answer the questions linked to percentages (DK). Comprehension was good and retrieval easy, but the question is limited to products. Operational profit is difficult to estimate and it might be preferable to ask about product margin (SP). The question is too complicated (one respondent sighed!) and is too difficult to answer (SW).

Q5.5 How do Your Products Compete: It is seen as hard to provide data on design using this question, as it is limited to products (DK). Basis of competition seemed to be hard to tell either they say all products represent the answer 'both' performance and emotions or they mix a lot of answers, which also refers that competition basis is different at different markets (HU). Comprehension was good and retrieval easy. But, again this is limited to products and might also cover process, marketing and organizational innovation. There is the problem that the company may have different strategies for different products, one may be based on cost, another on design. Another issue is that cost may not exclude the other alternatives. It may be good design as well as low cost (SP). Generally viewed as easy to answer and relevant (SW).

Q5.6 Nature of Innovation: It is hard to provide real data for this question (DK). A matrix structure would be helpful or concrete examples for the different answers (HU). Comprehension was good and retrieval not hard if based on perceptions, but not actual data (SP). There was some confusion over this question and the language used with some respondents and the overlap between the concepts difficult to judge (SW).

3.3   Conclusions of test 1

The treatment of design in the existing CIS questions does not match the perceptions of design in the companies interviewed. Attempts to adapt or modify these questions to better include design was mostly viewed as an improvement, but did still not result in consistent approval.

Respondents generally preferred an independent question on design. Of the alternatives tested, matrix/multiple choice questions were preferred and questions asking for values (either absolute or percentages) were not viewed positively. Questions focused on perceived importance are inherently flawed as they become somewhat self-fulfilling; respondents of course view design as important, whether or not this translates into action in the firm.

Respondents understood the essence of the new definition of design, but found questions which tried to implement this in a literal sense difficult to answer.

There is a delicate subtlety in phrasing questions about design that are not perceived to be solely about the creation of new products.

Views on questions were surprisingly consistent across different nations.

4.   Test 2: Questionnaire V2

Based on responses to the first test, questions were modified and new questions were conceived. The revised questionnaire began with a clearer statement regarding our definition of design and did not seek to compare new questions with existing questions in CIS. As a result, we were more free to frame questions in a way that we thought might help.

Questions in section 1 related broadly to the firm's approach to innovation; three alternatives were provided for comparison.

From test 1, we identified that questions relating to competitive positioning and the focus of innovation proved more accessible than questions on investment or resources. Thus, section 2 presented 5 alternative ways of asking about this perspective, based in each case on the underlying conceptual model of design regarding the integration of social, emotional and functional utilities.

A brief question was included on resources for design activities, again using the proposed definition of design, but without explicitly mentioning design. Finally, three alternative questions were including relating to revenue from these activities.

These questions were tested through face to face or telephone interviews in companies in Spain, Sweden and Denmark. A summary report was provided for each nation, reflecting on the ease of understanding and ability to answer each question.

4.1   Results

A summary of feedback from each country will be presented first, followed by a synthesis of feedback for each question. Finally, the implications of the questionnaire as a whole will be discussed.

Sweden

4 interviews were conducted in 4 firms, with senior managers (R&D director, Chief Operating Officer, Administrative Manager, Key Account Manager). Three of the interviews were via telephone and one was conducted face to face. Firms represented a range of sectors, including (Food, Insurance and Web services). The smallest firm had 7 employees and the largest more than 250 employees.

There were many and big problems with both the ability of respondents to comprehend the content of questions and their ability to retrieve reliable data. In part, this is because the questions demanded different data from different people. However, in general one might say

that the ability to easily grasp the intention of the questions is still low. This further demonstrated the inherent difficulties of measuring design using the definition of design as proposed in this project, and that as yet, the questions do not work sufficiently well. This was especially true for the more quantitative questions.

All the respondents were unfamiliar with and had problems understanding the meaning of the introduced design definition. None of the respondents felt that they used design in this manner, which shows that a very clear description of design is absolutely necessary if we are going to get any comparable answers. It also needs to be constantly repeated. However, it should be noted that respondents were positive to the applicability and perspective of the design concept.

Spain

Interviews were conducted with senior managers in four companies. Companies were from a variety of sectors, including electronic payments, printing products, textiles and ceramic home-wares. All interviewees were first emailed the questionnaire with a follow up telephone conversation.

Respondents understood the definition of design proposed and confirmed that this definition is consistent with how they understand design in their firms. The addition of examples to illustrate the definition is helpful.

Questions shall not be drafted following the strategy to first explain the new definition of design and then asking about design (under this new definition).

Respondents indicated that it is helpful to consider whether their innovations focus solely on 'performance', cost or styling; or whether they follow an 'integrated' approach to design. However, respondents confirmed the observation from test 1 that quantitative responses were difficult to provide. Respondents all preferred questions with either binary (yes/no) answers or with qualitative rating (e.g. always/usually/ eventually/ few cases/never) or similar.

Interviewees felt that broad understanding of the aims of the questions was good, as well as the respondent's ability to provide data.

Austria

Interviews were conducted with senior managers in 7 firms. These spanned a range of sectors, including: spectacles, windows, baking machinery, gloves and food. All interview partners were from the top/decision making level of the companies, including CEOs, marketing directors and design managers. Two companies were not prepared to give out financial figures at all due to commercial secrecy.

By not mentioning CIS in this questionnaire, the aims of the interview were much clearer and demanded less explanation. The examples given at the beginning were highly appreciated and made it much easier with subsequent questions.

Y/N questions, rankings and naming of approx. percentages make it much easier in a direct interview situation to get a fast answer. However, it is still not clear that the questions enable real design awareness!

4.2 Comments to specific questions

Comments on specific questions have been synthesised from all responding nations. Please refer to appendix 2 for the questionnaire. Comments from each nation are noted in parentheses (AU=Austria, SP=Spain, SW=Sweden).

### Q1 Incidence of Innovation:

- The three versions of this question were are easily understood. Version (a) was the easier to respond to. Version (c) allowed more precision, but might be better if formulated under qualitative alternatives (e.g. Always, usually etc.). Although this question is not directly about design, it implies the importance of usually low technology intensive innovations (marketing, organizational, service…) (SP).

- This was the easiest section for respondents to reply to. However there remained some uncertainties about what innovation is and what is included. Specifically, quantifying the 'amount' of innovation is difficult, as an organizational change can consist of several "minor" innovations. Is it the main "aggregated" change or should one list all, even the minor ones? Thus, the question might need to be qualified to define the number of "distinct" innovations or the like (SW).

Q2 Character of Innovation:

- The five versions were easily understood. Q2.4 and 2.5 were the preferred versions because they enabled greater precision when answering. However, there were problems when considering cost as a separate alternative, since in the mind of respondents cost is always an issue (SP).

- This section proved complicated for respondents. Despite hearing the definition of design at the start of the interview, they needed to be reminded as the definition didn't necessarily fit with their own preconceived idea of "design". Specifically, some respondents felt the definition to be too abstract. Respondents also found it difficult to grasp the meaning of "integration of utilities", which also tends to become too abstract. Furthermore, there were comments about the questions not being straight forward and trying to cover the real request with other questions (SW).

- Respondents had a hard time to perceive the differences between each of the options. Specifically, they could not easily distinguish between saying yes to the first two items and then the content of the third option (integration) which was considered redundant (SW).

- Respondents reacted to the wording of "technical performance or improved function" which they considered as two different things. One recommended that only improved functionality should be mentioned. Two respondents noted an approval of the wording in 2.5, which included the word design. However one of these reflected that this might be a "learning effect". The better wording would however did change their chosen reply (SW).

Q3 Resources used for design activities:
- This question was believed to be clear and data available (SP).

- The first impression was that this question was possible to answer. But, unfamiliarity with the definition of design made it hard to identify relevant activities and resources. Some test persons expressed their difficulty in understanding what people and activities are referred to in "the integration of both performance/functionality and emotions /experiences". Thus, it was be difficult to retrieve the requested figures, as they did not fully comprehend the definition. An example provided was programmers constructing code for new interfaces; the respondent did not know the extent to which their work was integrating functional and emotional aspects. In general the response was that estimating the amount of specific design activity and the resources associated with this was near impossible (SW).

Q4 Results from design activities:
- Question 4.3 was viewed to be the clearest and thus the easiest to answer. Respondents felt the questions made sense (SP).

- In general the respondents were able to provide a rough estimate as to the size of (the fraction) income to which innovation in general contributed; although they found this to be difficult. However, they considered it to be impossible to determine how much of this was attributed to design as defined (SW).

4.3   Conclusions from test 2

It is clear that there were very different responses to these questions in different nations.

Thus, questions built 'literally' from the definition of design as conceived for this project do not translate consistently to respondents in different regions.

As a result, it is clear that other alternatives should be explored.

5.   Test 3: Questionnaire V3

Questionnaire 3 was developed based on insights from the first two rounds of testing.

We designed the questionnaire around two underlying concepts:
- Firstly, the underlying logic of the questionnaire was the four modes of innovation as described in the Oslo manual; product (goods/services), processes, and marketing methods.

- Secondly, design's role in delivering new functionality/performance, new emotions/experiences and an integration of the two.

We had previously discovered that questions seeking to directly analyse this had not been successful.

Thus, for each type of innovation, we devised questions which sought to ask specifically about the introduction of new innovations, the importance of design in each case and the resources used.

We also added a single question to determine whether firms adopt a technology push or a design led approach to innovation.

Learning from previous questionnaires, we adopted mainly multiple-choice type questions which enabled respondents to tick boxes, rather than provide estimations or quantifiable answers.

Unlike the first two rounds of testing, this time we designed the questionnaire to be used on-line. Each question was followed by a request for feedback on how difficult it was to understand and how difficult it was to provide an answer. In total, 38 responses were received from the UK, 32 of which were complete. 4 responses were received from Spain and 3 from Hungary. In total, 39 responses are included in the analysis.

Results will be presented for each question, followed by a short conclusion. This report will not respond explicitly on the actual responses, unless these help to illustrate an important point regarding ease of understanding or difficulty in answering.

Q1 About the respondents

Respondents were first asked to provide contact details, information about themselves and their firms. This included where possible data on the company size and growth.

28 respondents provided this data, others declined due to commercial sensitivity. 10 of the firms were large firms (>250 employees), 7 micro firms (<10 employees) and 11 were

medium sized enterprises (>10 and <250 employees). The majority of respondents were in a senior role in their firm, including managing directors, heads of product development and technical directors.

Q2 Types of Innovation

This question sought to capture perspectives on the relative priority on different types of innovation. This did not include any specific component regarding design. Product innovation was split to include separate categories of 'goods innovation' and 'service innovation'.

Businesses innovating in services were also more likely to be innovating in processes, marketing methods and organisational methods. Likewise, businesses innovating in marketing methods were also likely to be innovating in organisational methods. There appears to be no direct relationship between firms innovating in goods and other types of innovation.

The majority of respondents felt this question was easy to understand, with a slightly lower number feeling that they were able to provide an answer easily (figure 5.1).
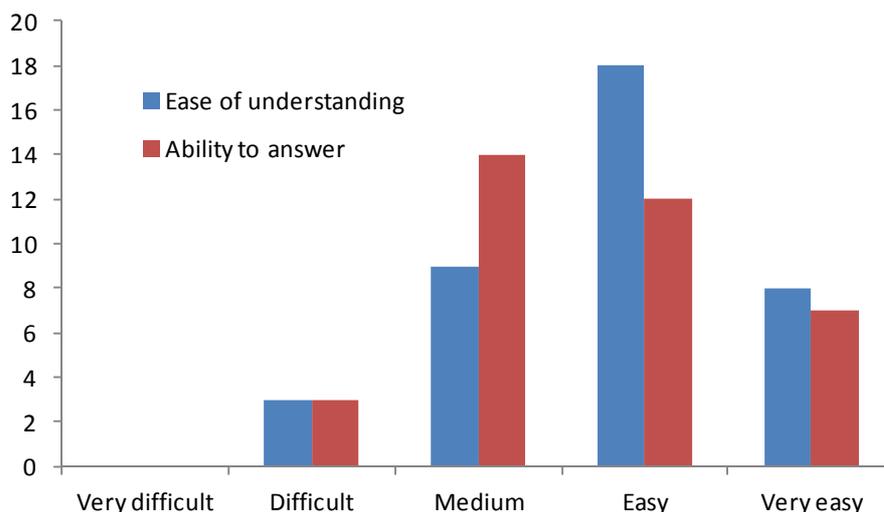
Figure 5.1: percieved difficulty of Q2

In open text, a number of respondents commented that this question produces very generalised results, especially in large organisations. For example, "there are lots of initiatives happening everywhere, all with varying priorities, and I doubt that we even have a system that could compare the importance of different priorities in the different parts of the organisation."

Another respondent noted that this kind of question is likely to result in a lot of 'high priorities'; "if you ask this sort of question of a company that thinks it is innovative it will give you high priority answers."

Some informants wondered about the 'unit of analysis'; "are we answering for the design of "goods" we produce or goods we use? Also - Am I answering the question from the perspective of our company … or my function." Another noted that these types of innovation might not happen in isolation: "I don't see any of the innovation types listed as operating in isolation either, most times they are analogous to one another."

Q3 Introduction of innovations

This question aimed to determine what 'type' of innovation had been launched, with a greater degree of specificity than in question 2. Each major type (goods, services, process, marketing, and organisation) was subdivided into further types of innovation, each with a focus on either performance/technology change or changes in aesthetics/form/experience. Thus, the question sought to gather information regarding the firms approach to innovation from a design perspective.

The most dominant forms of innovation seen was innovation in goods, through either new technology, new uses of technology or improved technology. The least common forms of innovation seen were new pricing methods and reducing the cost of delivery processes. Types of innovation traditionally associated with 'design' such as changes in product form, new brands or changes in user experience are less dominant (table 5.1).

Rank	Type of innovation	Yes	No
1	Goods: New use of existing technology	29	6
2	Goods: Use new technology	26	9
3	Goods: Improve performance/function	24	11
4	Process: enables new goods or services	23	11
5	Marketing: New promotion methods	22	13
6	Goods: Lower costs	21	14
7	Service: improvements (e.g. efficiency)	20	15
8	Services: New to firm	20	15
9	Process: increase quality of production	20	15
10	**Marketing: new brands**	20	15
11	Service: new functionality	19	16
12	Process: reduce cost of production	18	17
13	Process: increase quality of production	18	17
14	**Service: changes in user experience**	17	18
15	**Goods: changes in product form**	15	20
16	Marketing: New placement methods	15	20
17	Process: reduce cost of delivery	14	21
18	Marketing: New pricing methods	12	23

Table 5.1: types of innovations introduced

In general, respondents felt this question was simple to answer and they were able to provide data. A few found it a little difficult (figure 5.2).
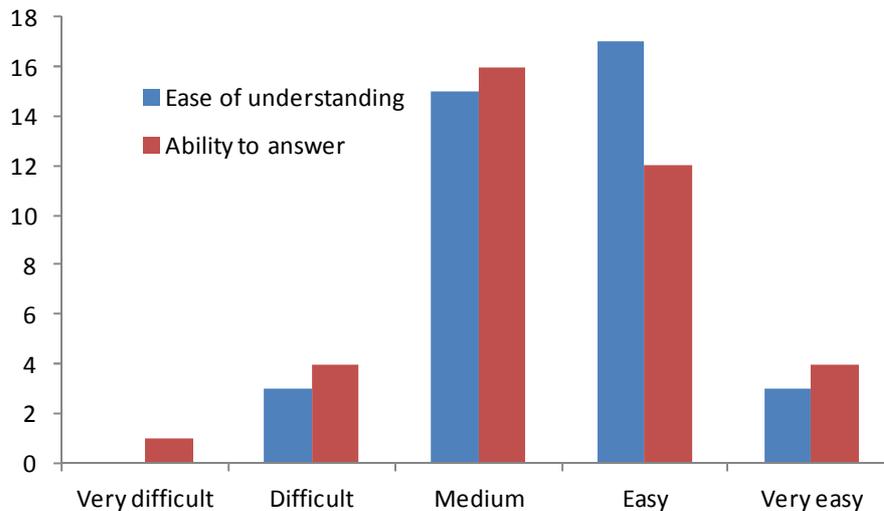
Figure 5.2: percieved difficulty of Q3

One respondent commented that the overall logic of the question still assumes a manufacturing based business model. Another indicated that 'significant' needs to be better defined, as "some of my marketing colleagues think that introducing a new colour purple to the pack is a significant change."

One respondent was not sure what was meant by 'product placement' and suggested not using 'utilise' and replacing it with 'use'.

One respondent commented that this question is a little 'high level'. But another noted that "these questions are better than the previous ones because they are more detailed so it is easier to think of examples."

Finally, one respondent noted that it is difficult to recall work that was completed over 3 years ago.

Q4 Importance of design

This question took the same categories used in question 4 and asked whether design resources are in house, outsourced, a combination of the two or whether no design resources are involved. Examples of different types of design resource were provided.

Respondents typically viewed design to be important across all types of innovation. Results were highest for goods and marketing innovation. Few respondents believed design to be not important in their firm across any of the different types of innovation.

Respondents believed this question to be medium/easy to respond to and understand (figure 5.3). This was qualified with some interesting comments regarding what is being measured.
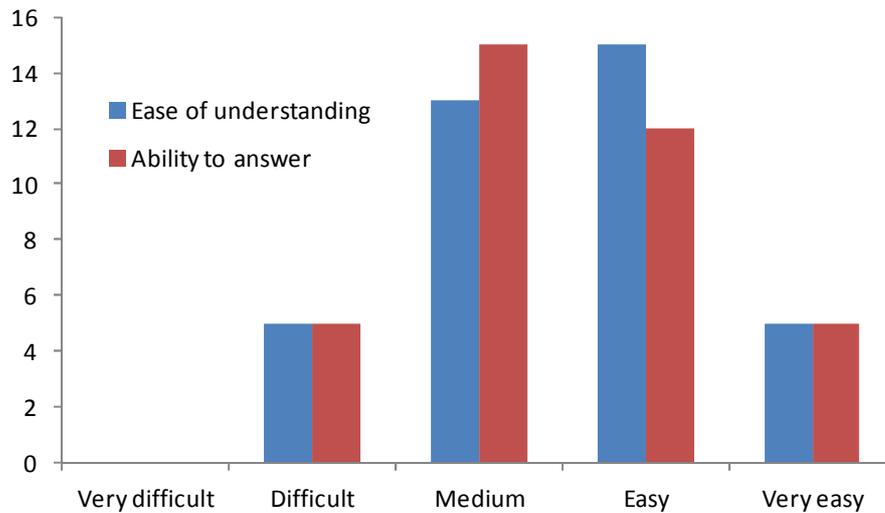
Figure 5.3: percieved difficulty of Q4

Several respondents indicated that it isn't clear what will be learnt, as "design always has a role". Another commented that "design is always important. In everything that I do that is NOT traditionally associated with 'design' … I still feel that the designers approach adds huge value." One more said "trivially, nobody would be wrong if they put 'very important' to all."

Other respondents indicated that this question has limited value and due both the length and use of multiple clauses, needs careful reading.

Other respondents suggested that as the definition of design used is so broad, it includes the whole process for developing products, and thus design is "obviously important for the implementation of an improved product, because the implementation is nothing but 'Design'. Therefore the questions above are really measuring the subject's understanding of the term design relative to your definition, rather than assessing the importance of something which is supposed to be subset of the whole product development process."

Q5 Design resources used for innovation

This question took the same categories used in question 4 and asked whether design resources are in house, outsourced, a combination of the two or whether no design resources are involved. Examples of different types of design resource were provided.
The results show that a majority of firms believe that they use either in house, outsourced or a combination of design resources for all types of innovation (figure 5.2).

		New goods (technology/ function)	New goods (form/ appearance	New services	New processes	New marketing methods
Number of firms using designers	In house	12	15	14	14	11
	Outsourced	1	4	2	1	3
	In house and outsourced	24	15	16	18	19
Number of firms using no design resources		1	3	5	5	5

Table 5.2: design resources for innovation

These results are possibly challenging to interpret. Innovation of new goods focused on technology and new processes are least likely to be outsourced. Innovation focused on form and appearance of goods appears to be most likely to be outsourced.

Respondents generally found this question straightforward to understand and answer (figure 5.4). But, several found the question to be too long and overly complicated, one saying "much shorter please, using simpler language … unnecessarily turgid sub-questions. Cut, cut, cut."

More than one respondent noted that the distinctions provided are not 'binary' and there is overlap between the categories. Thus, one noted that "as we use 'both', I know the answer even if I don't understand the question!"
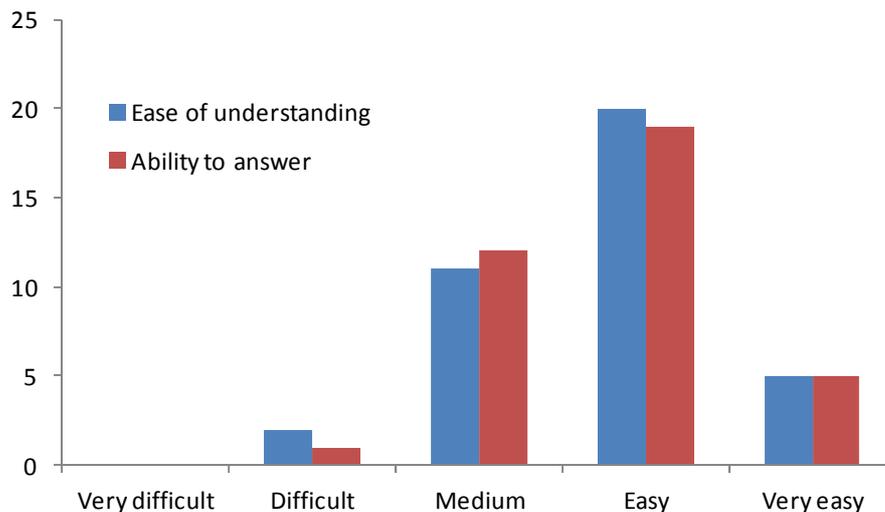

Figure 5.4: percieved difficulty of Q5

Q6 Resources dedicated to design

This was the sole question that sought a more quantitative answer, seeking to identify the number of people employed in a design role and the budget for in house and outsourced design activities.

For designers employed, the specific question asked: asked: "For the year 2012, please provide an estimate of the resources dedicated to design, where design resources are those resources dedicated to integrating technical performance and user experience in innovation activities … Number of people employed in house in a design role."

To this specific question, 23 respondents provided an estimate of the number of designers employed. As a proportion of the total work-force, the number of designers employed ranged from 0% (i.e. no designers) to 75% (i.e. 3 designers out of 4 employees).

However, in the 'about your company' section, a shorter question on designers employed was also asked. The specific wording was "". Here, no explicit definition of design was provided, other than that given at the start of the questionnaire. 31 responses were received to this question, suggesting respondents felt it was easier to answer. There were also some significant differences between the estimates given for each of these questions. Where responses were provided to both questions, results are shown in for comparison in table 5.3. This suggests that the answers to either one or both questions cannot be treated as reliable.

Company	Design resources are those resources dedicated to integrating technical performance and user experience in innovation activities … number of people employed in house in a design role	Number of designers employed in 2012	Difference in estimates
1	10	2	-8
2	5	5	0
3	25	25	0
4	14	14	0
5	1	1	0
6	1	8	7
7	0	0	0
8	40	30	-10
9	25	25	0
10	3	2	-1
11	40	40	0
12	90	200	110
13	1	1	0
14	12	10	-2
15	3	3	0
16	20	20	0
17	3	3	0
18	3	20	17
19	40	190	150
20	7	2	-5
21	3	3	0
22	3	3	0

Table 5.3: estimates of designers employed

Respondents generally found these questions to be difficult to answer (figure 5.5), and possibly the most difficult in the questionnaire. Difficulties arose due to the boundary spanning nature of design and difficulties in accessing information:

- "I doubt that anybody in the company could answer this question without a lot of effort, because of the way that cost centres allocated globally, and that we don't break-down design costs vs. other things."

- "Difficult to understand (estimate design resources on vague activities), very difficult to answer."

- "Virtually impossible to answer because: personally I don't know and data is probably not captured consistently. We have very few (if any) dedicated design employees."

- "A lot of staff have shared roles. Nobody is employed solely for design. We expect our designers to also be involved to some degree with customer sales and marketing etc."

In addition, some respondents found the conceptualisation of design difficult to translate into 'employees':

- "I think many people will struggle to understand this question. I think you are trying ask about "resources dedicated to integrating technical performance *with* user experience", where in your definition the "technical performance" is somehow separable from the "user experience". But I don't think it is. … So, I've answered the questions above in the understanding that all my staff in R&D have to take account of the "user experience", because to ignore it is to develop a bad product.
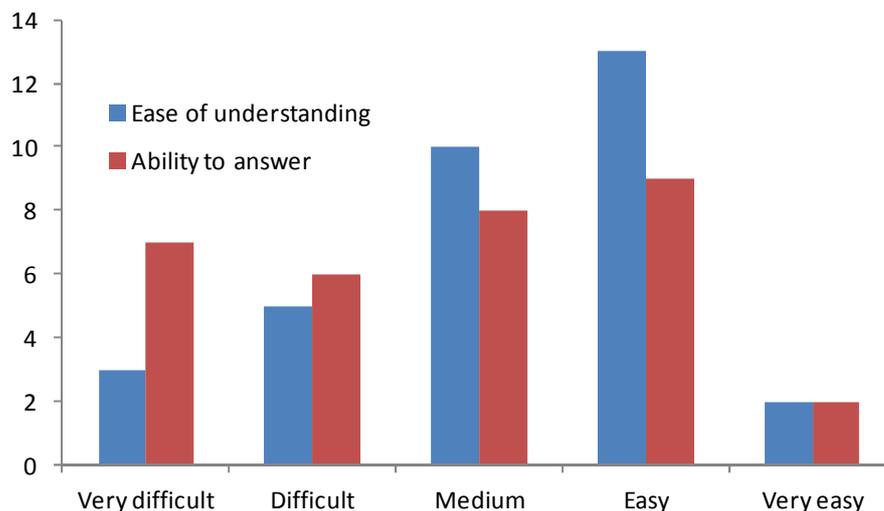

Figure 5.5: perceived difficulty of Q6

Q7 Design as a styling add-on or design as an integrator of experience and performance

This question sought binary responses as to whether the firm follows a 'technology-push' approach to innovation or whether it is 'design led'. 20 firms claimed to be technology push, 24 claimed to be design led and 12 indicated that they do both.

Respondents appeared to find this question both easy to understand and answer (figure 5.6).

However, their comments suggested that although it was simple to tick the boxes, there were significant reasons for questioning the validity of their responses. One respondent noted that the question was "easy to understand and answer, provided (not being a theorist) I have understood correctly ... our innovation is requirements-driven, not innovating for its own sake or having it imposed upon us (which I presume would be 'push')."
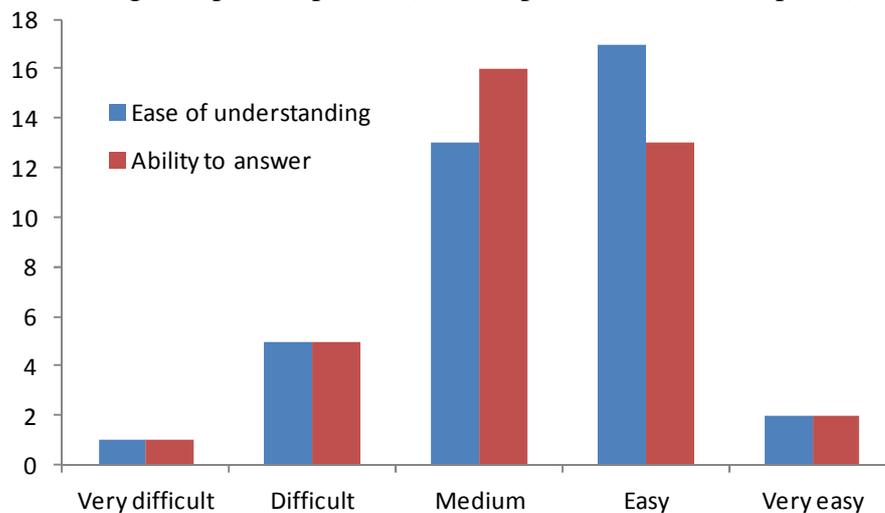
Table 5.6: perceived difficulty of Q7

One respondent thoughtfully noted that by making this distinction, the question undermines or contradicts the definition of design as provided (integrating performance and experience).

Others also thought that these two approaches to innovation are not necessarily mutually exclusive and that "in reality the innovation process is often very different for everyone. … some more alternatives may help to ensure the interviewee knows what they are doing and what they are not doing."

More problematic was a perception that the question introduces bias through its choice of words, "the phrasing of the definitions is a little judgemental, tending to lead the witness. I can think of examples of both approaches - therefore both yes!" Another agreed, saying "the phrase 'as an add-on' feels inappropriate".

Finally, one respondent commented that the question includes "too many 'and/or' components within the questions that may mix people up."

Q8 Relevance of past design activities in today's results

This question sought to directly determine whether design activities can be connected with business performance. As a multiple choice question, respondents were asked about the importance to revenue of innovation projects where design played a role as an integrator.

This question was answered by all respondents, indicating that they found it simply to complete. This was confirmed by their views on whether the question was easy to understand and reply to (figure 5.7). However, in their commentary, several indicated that they had difficulty. For example, one said "[I] don't understand the question. If you are after something very abstract, you have to be very, very clear." Another respondent understood the question, but found it "difficult to answer in a large & highly diverse global company." This sentiment was confirmed by another respondent who noted that it is "difficult to isolate and determine the direct impact of design in this way, but yes very important if the rest of the product mix is also on/above par."
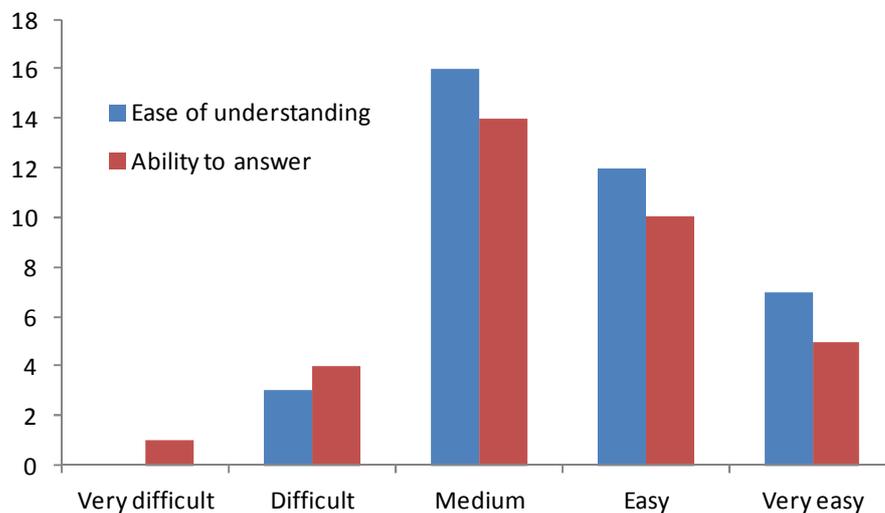
Table 5.7: perceived difficulty of Q8

11 respondents said that the importance of design was 'very high'. 11 said it was 'high' and a further 11 said 'medium'. 5 suggested that design was of low importance to revenue and no respondents indicated 'very low'.

These responses perhaps demonstrate a similar problem as that observed in question 4, where respondents of course perceive design to be self evidently important, regardless of whether this translates into actual activity or capability.

Conclusion from test 3

Responses indicate that likert-scale type questions are simpler to answer than those seeking quantitative evidence. However, the conceptualisations chosen must be straightforward.

Question 5 (in-house or outsourced resources) was perceived as the simplest to understand and answer, although respondents suggested the wording could be simplified.

Question 3, focusing on the introduction of innovations was arguably the most successful in helping identify the companies specific design focus. The number of elements contributed to some respondents finding this question difficult and point towards a simpler version being sensible.

Questions 2 (type of innovation) was also perceived as easy to answer, but provides little useful evidence on design.

Questions 8 (relevance of design to results) and 4 (importance of design) both sought data on 'importance' and whilst comparatively easy to answer, tend to be flawed, as respondents will naturally tend towards a high-importance score.

Question 7 exploring whether firms follow a technology push or design led approach to innovation was generally viewed as being difficult to answer.
Finally, question 6 seeking quantitative data was perceived as the most difficult to answer reliably.

6.   Test 4: Questionnaire V4

Each of the questions on design in the first three test stages were aiming to directly test the viability of the proposed definition of design as the integration of social, emotional and functional utilities. As a simplistic conclusion, this proved difficult, as the terminology did not translate well into easily answerable questions. The cognitive testing demonstrates that despite conceiving a wide array of questions, they are not consistently successful in generating useful data. Questions have included:

- **Design resources**: The cognitive testing has shown that it is difficult to estimate resources (either investment or staff) in a quantitative sense.

- **Importance of design**: cognitive testing has demonstrated that of course people believe design to be important, as it is 'self evident'. However, it is not easy to translate this individual view on importance into reliable data that can be compared against measures of commercial success.

- **Attitude**: again, it is difficult to know whether responses are resulting in what is 'evidently the right thing to say' and thus whether it is really believable.

Thus, for the final round of testing, we returned to first principles, as described below.

Our initial assumption is that firms create economic value when they integrate social, emotional and functional utilities in delivering new (or improved) products and services (figure 6.1)
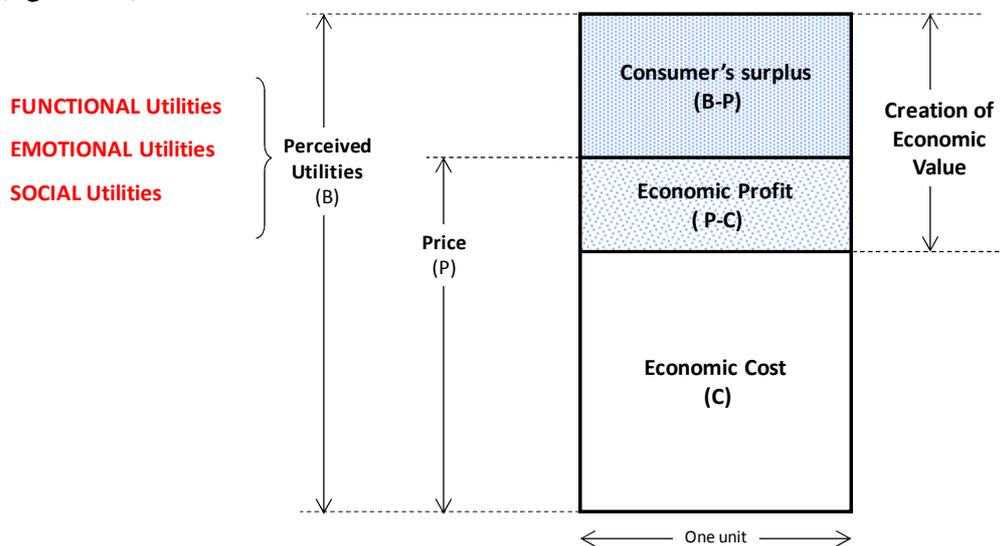
Figure 6.1: economic value creation by design

In addition, we pose the hypothesis that that firms which successfully integrate F,E & S utilities (or in other words, firms that design) might secure higher margins, as expressed in figure 6.2.
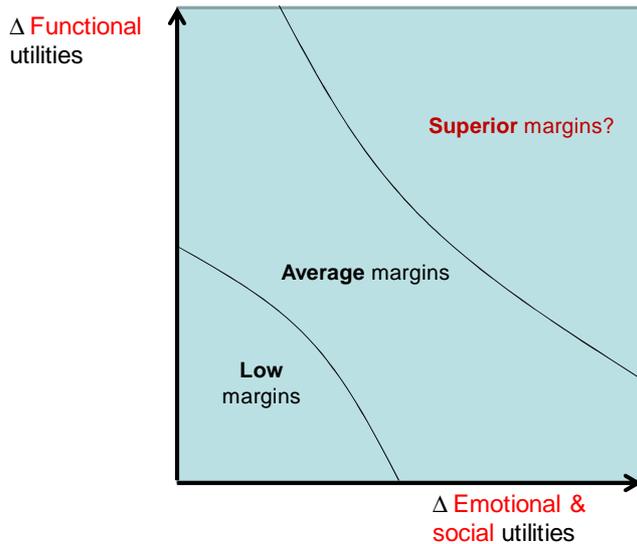
Figure 6.2: superior margins by design?

One implication of figure 6.3, is that different industries will have different shapes of 'frontier', as represented in figure X below.
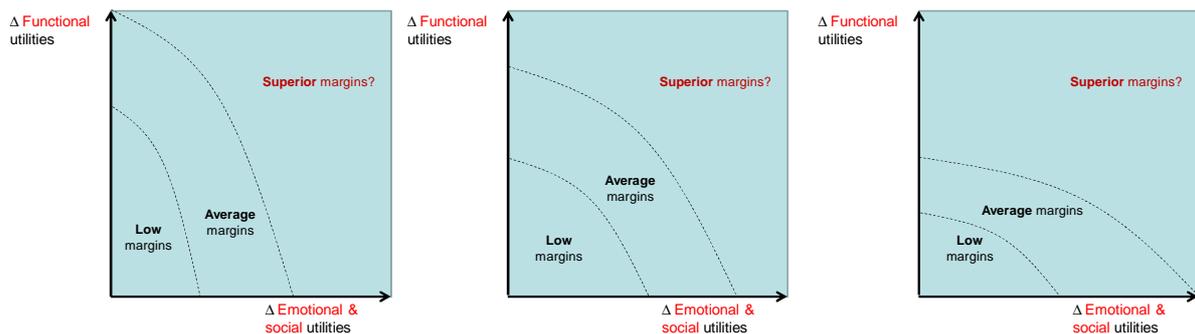
Figure 6.3: superior margins by design?

These working hypotheses are useful in helping frame the type of question that we might wish to ask a large sample of companies. The question must be capable of returning data which enables these hypotheses to be tested. For this, the 'analytical' framework governing how the results might be used must first be considered. This is described below:

6.1   Analytical framework

All companies trade on the basis of offering either products (goods or services –the term product will be used from now on). In offering these products, they compete against other offerings in their market place. To compete, they will seek to differentiate with either Social/Emotional Utilities or Functional Utilities or a combination of both. Our hypothesis is that companies which *design* products that do both are likely to be more successful. It should also be noted that some firms compete through their ability to deliver efficiently and thus

provide undifferentiated products at a lower cost. This is represented graphically in figure 6.4.

Performance in relation to main competitors in the firm's market
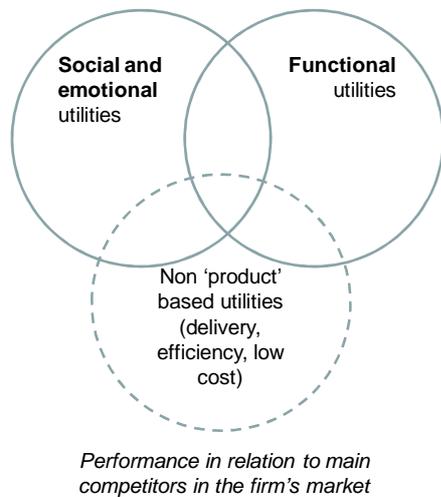
Figure 6.4: Performance in relation to competition

Thus, it is necessary to measure the extent to which a company's products are either 'better' or 'worse' than competitive ones along these dimensions. Returning to our basic hypothesis, we would expect firms whose products sit in the interfaces (i.e. integrating F,E,S utilities) to be more successful than those competing along a single dimension.

The next part of the analytical framework is to be clear about what it is that we are seeking to compare these firms against in order to test some hypotheses. There appear to be two things that would be useful to know. Firstly, whether the firm is 'successful' (e.g. turnover growth, export growth) and secondly, whether the firm's product command a price premium compared with competitive products (figure 6.5).
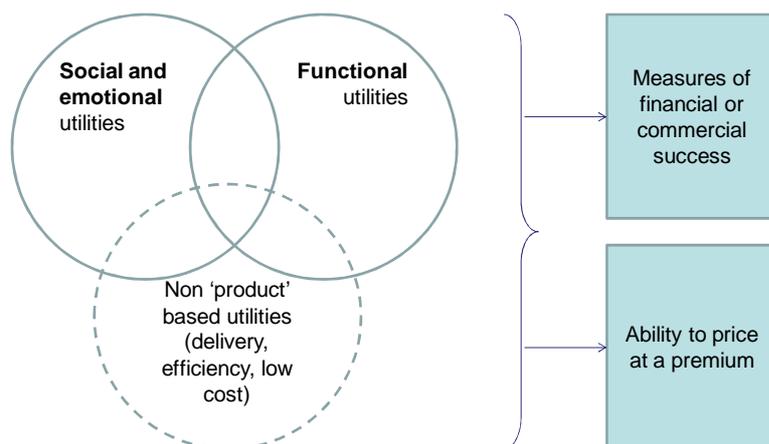
Figure 6.5: Basic analytical framework

Taking this basic analytical framework, there are different 'clusters' of firms, depending upon the way in which their product's compete (figure 6.6). Cluster 'A' for example,

compete primarily through social and emotional utilities. Cluster 'B' compete primarily through functional utilities. Cluster 'D' integrate both social/emotional and functional utilities. For each cluster, we might make a hypothesis about their relationship to both price and company success.
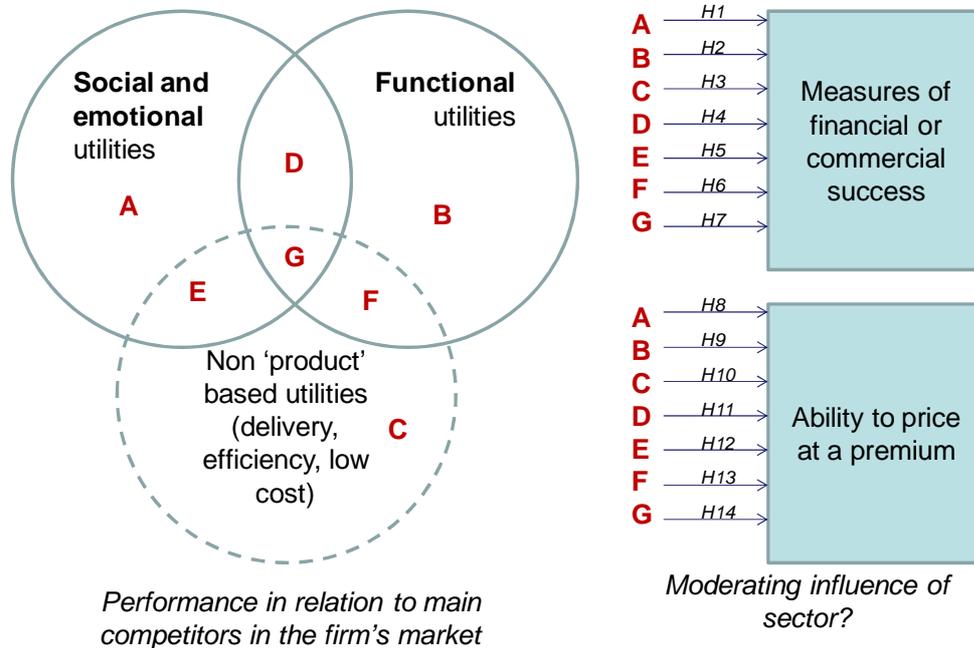
Figure 6.6: Detailed analytical framework

For example, H2 might suggest that there is a positive relationship between firms offering products which have greater functional utilities than competitive offerings. H4 might propose that there is a strongly positive relationship between firms integrating F,E,S utilities and performance. H11 might propose that there is a strongly positive relationship between firms integrating F,E,S and the extent to which price is set at a premium compared to competitive offerings.

The strength of these relationships might also be moderated by the specific industry sector.

6.2   Implications for questions

Questions for the final round of testing were thus built around this conceptual and analytical framework. A positive implication is that the definition of design used in this study underpins the questions, but does not need to be used explicitly in the questions.

In addition to standard questions on company performance, the design related questions therefore ask the following 4 things:
1. To what extent are a firm's new (or improved) products competing based on social/emotional utilities compared with competitive products in their market place? Social and emotional utilities are related to brand, style and appearance of products and services.

2. To what extent are a firm's new (or improved) products competing based on functional utilities compared with competitive products in their market place? Functional utilities are related to technical performance and levels of functionality in products and services.

3. To what extent are a firm's new (or improved) products competing based on cost or delivery efficiency compared with competitive products in their market place?

4. To what extent are a firm's new or improved products able to command a price premium?

The final questionnaire is re-produced in Appendix 4.

6.3   Results from each country

Responses from each country will be presented first, before discussing the implications of feedback as a whole.

Hungary

Responses from 17 firms were collected in Hungary, 15 of which were usable.

- **Understanding**: All firms completed the questionnaire quickly and all the companies uniformly stated that the questions were clear and that they could be understood easily. There was no need for clarification in connection with the questions. As expected, some of the companies were reluctant to answer questions regarding financial data. One firm noted that the questions were too general for their activity. Another firm noted that their answers were possibly influenced by their own biases. Another firm noted that there could be different grounds for comparison and therefore the answers are not always 100 % obvious.

- **Answering**: Responses on ease of providing answers echoed those on understanding, although one respondent noted that it is "difficult to answer without bias."

- **Other comments**: There were no other general comments of relevance.

The interviewers noted that some of the companies might have 'over-positioned' themselves, and that they might be claiming better performance than is seen objectively. To this end, the interviewers reflected on the businesses independently to determine whether their answers accurately reflect the firms.

From the 15 companies 11 can be considered as 'successful' based on turnover and profit data, that is either in turnover or in profits it had slight or significant growth over the last 3 years. 3 of the firms stated that their turnover and profit has been about the same over the last 3 years and one company reported slight reduction in both profits and turnover. Of the 11 successful companies, 3 perceived their new products (goods and services) to be slightly or

significantly better regarding at least 2 of the 3 utilities (Functional, Emotional, Social) and 8 of them perceived their goods to be slightly or significantly better regarding all the 3 utilities. As for the sales prices applied by these 11 companies the below statistics can be drawn:

- 7 applied about the same sales price as competitors;

- 2 applied higher prices (one significantly and one is slightly higher prices);

- 1 applied lower prices;

- 1 said that it is not applicable.

As for the 8 companies successfully integrating functional, social and emotional utilities only 2 of them claimed that their sales price is higher in comparison with competitors; one stated that their price is significantly higher and another one stated that its sales price is slightly higher. From the 3 companies that stated that their turnover and profit has been about the same over the test period, 2 of them said that they can apply higher prices than competitors.

United Kingdom

Responses from 24 firms were collected. 20 of these were usable. One firm had not released any product innovations over the last three years and so did not complete further questions.

- **Understanding**: 9 of the respondents commented that the questions were 'clear', and 'easy to understand'. One noted that the language was clear and another commented that it made sense. 4 respondents suggested that there was some ambiguity, mainly relating to whether they perceived a product innovation as including both goods and services; "It did feel more geared towards physical technology. For web or app developers, whose 'product' is a site or application, some of the questions are less relevant." Another respondent noted that "we offer services and consulting, not products, so I am not sure if the questions where for us." One respondent noted that "it was not always clear what was meant by for example technical performance versus cost or functionality."

- **Answering**: Ten respondents noted that the questions were 'easy to answer' and that they could provide a response quickly and easily. One respondent noted that as a large firm, it is difficult to generalise across a range of products. Another noted that comparison with competitors isn't easy and commented "I wasn't sure if you wanted my perception of my product or a measured comparison using analytics or market data." One respondent also noted that their "competition is not very well defined." One respondent noted possibly overlaps between 'functionality' and 'technical performance'.

- **Other comments**: Overall, there were few general comments. One respondent had also answered questions from the earlier stages and noted that "these questions are

much more connected with commercial reality than those offered in the previous survey."

Spain

Responses from 20 firms were collected. 15 of these were complete and thus usable.

- **Understanding**: 11 respondents commented that the questions were clear and simple to understand. One respondent suggested that the questions are "open to interpretation in who you regard as a competitor" although they qualified this by stating that the "language was clear." The same respondent noted that the form would be "easier to fill in for a standard consumer product" and another commented that "most of the questions focused more on products instead of services; it is difficult to apply the same terminology."

- **Answering**: 7 respondents were confident that they could answer quickly and easily. Two respondents felt that the questions were aimed at product rather than service firms, one stating the questions best suited "a company with a consumer based product where the notion of better and worse are more easily visible." Another respondent also felt that there might be some subjectivity in responses unless there is market research to verify claims. One respondent noted that the responses must be an 'average' when a firm applies "different strategies for different range of products (e.g. me too, second but better, breaking innovation, soft innovation)." One respondent indicated that "I didn't feel really comfortable, since I do not see the real goal yet."

- **Other comments**: Significant other comments or suggestions included a suggestion that it might be good to include a question about "the general strategy for developing new products and to include the possibility that a respondent (a Company) may answer different for each one, to avoid averages [across a product range]." Another respondent suggested that the questions should have a greater focus on services. Finally, one respondent commented "would be better to have a scale of comparison, some of these answers can be very subjective."

Denmark

Responses were collected from ten Danish firms. 7 of these were complete.

- **Understanding**: Respondents felt the questions could be easily understood, especially if the firm produces products. One noted that it is "difficult to say whether a new service is more aesthetic than competitors … first of all, it is the customer that decides … and second, the new service has no direct competitors. So, the text was easy to read, but difficult to interpret." Another noted that the "concepts are clear, but in case of services the approach may be a bit confusing."

- **Answering**: Responses on ease of answering echoed those on ease of understanding. In general, respondents found it relatively easy to answer.

- **Other comments**: There were no additional comments.

Austria

Responses from 26 firms were collected. There were 11 incomplete responses, resulting in 15 usable responses. Two of these firms had not released any product innovations over the last three years and so did not complete further questions.

- **Understanding**: General consensus was that the concepts and language used in the questions was clear and easy to understand. One respondent expressed a reservation that it was "not difficult at all, but it might be different in a translated form, e.g. German." Another noted that "the problem is that we are working in many departments. In one we have a real innovation set and in many others only line extensions with rather less innovative character. But everything is compared and evaluated together." Finally, one respondent commented "compared to the response formulations that do not have enough opportunities offered, the questions were easy to understand and consistent in their logic."

- **Answering**: Responses on ease of answering were consistent with those on ease of understanding. One respondent suggested that it was easy because "I did it based on the real innovation from our company;" and another said "yes, it was easy for me to answer. It took me not more than 2 Minutes. Maybe this is because I know the market quite good and be good informed about my competitors." One respondent noted that "some of the questions were difficult to answer as they were not exactly applicable to our business case (i.e. selling premium vegetables)." Another respondent suggested that the questions did not "meet the [design] process we went through; in terms of research, idea creation etc." On a detailed note, one respondent commented that "most of the [questions] were easy to answer, but in some cases it is difficult to say if the difference is 'slightly' or 'significant'." Finally, one respondent indicated that it is difficult to compare a completely new product against competitors when there are no existing competitive offerings.

- **Other comments**: There were few additional comments which were of direct relevance. One respondent noted that "question 6 [comparative pricing] is a little bit tricky, because the 'bad thing' (higher pricing) is on the right; all the other questions have this 'bad thing' on the left, here it is on the right; so you have to read it very carefully before answering."

6.4   Analysis of results from the whole sample

Whist we recognise that this is a small sample, and as a result, it is neither possible nor sensible to develop any statistical analysis, we did interrogate the data to determine whether the results look broadly in line with expectations.

Based on their responses, each firm was classified according to the analytical framework. For example, a firm believing their new products compete significantly better than competitors for social/emotional utilities, functional utilities and also delivery was coded as 'G'. For each

cluster, the average score for financial performance was calculated (1=significant reduction, 5=significant growth); an average score for growth based on change in staff employed; and an average score for 'price premium' (1=significantly lower than competitors, 5=significantly higher than competitors). Results are presented in figure 6.7 and described further below.
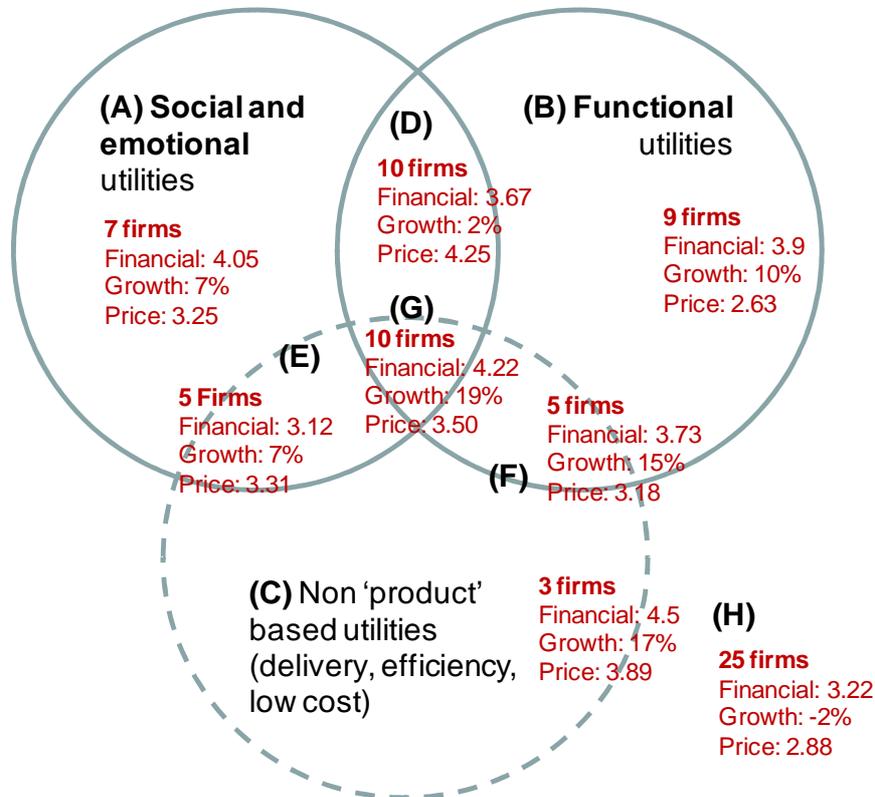
Figure 6.7: High level results for firms in each category

Firstly, it is worth re-iterating that this, by design, is a small sample, and the results are not intended to offer any statistical significance. They are presented here to demonstrate that it is possible to compare, and to enable a basic 'sense-check' of the responses. For example, results for companies in category 'C' must be treated carefully, as there were only three firms. However, the patterns look broadly in line with expectations. Firms competing based on a strong combination of all three dimensions (category G) also had stronger financial scores, growth rates and commanded a higher price premium. Firms competing based solely on functional utilities had a lower price premium than other firms. Firms without strength in any area (category H) were the poorest performing all round. These results are consistent with expectations, and demonstrate that a sufficiently large sample would enable a much more nuanced, statistically significant and thus reliable analysis which would enable significant progress in demonstrating the economic value of an integrated approach to design.

Conclusions from the final test

Framing the question around an underlying analytical model proved to be a sensible approach. By embedding the definition of design into the question, rather than using it explicitly, the respondents felt the question to be understandable and answerable. As a result, the proposed question works well in helping categorise firms based on their perspective towards design, and should thus enable analysis of the economic value of design should a sufficiently large data-set be collected.

Feedback suggested that minor improvements to the question would improve clarity. These are shown in section 7.

7.   Conclusions and recommendations for design questions

This study has demonstrated that current questions in the Community Innovation Survey do not match respondents' perceptions of design as a part of innovation. Therefore, independent questions on design are needed.

Through four rounds of testing, a number of alternative approaches to asking about design have been trialled.

This has highlighted the inherent difficulties in asking about design, which is acknowledged to be a 'slippery concept' to define. Our proposed definition of design (as the integration of functional, social and emotional utilities) has proven successful as an underpinning logic to questions, but less successful when used directly in questions.

Recommended design questions for CIS 2014

As a result of our testing, we believe that it is possible to introduce a new question to the CIS which would enable design to be more effectively measured. Below, three possible questions are proposed. In making these proposals, we believe that the questions are simple to answer, are easily understood across different nations and that it is possible for firms to produce reliable data. We have incorporated any necessary changes as a result of feedback from testing.

Q1: The first proposed question is from the final round of testing, which asks respondents how their products perform against competitors. As a means of asking about design, it is indirect, but insights relating to the firm's approach to design are embedded in the categories. This question seeks to gauge the extent to which competitive advantage is gained by following a design approach. It enables firms to be grouped into those which compete on performance/functionality, those which compete on emotional/social utilities (e.g. aesthetics or brand) and those who do both. By clustering firms into these types, it would then be possible to examine how each group performs. It is our hypothesis that those firms competing in an integrated way (i.e. adopting our view of design) would be more successful than the rest.

Q2: The second proposed question is from the third round of testing and asks about the characteristics of innovations that have been launched to the market. Where Q1 seeks to measure the extent to which an innovation is different from competitive products, this question takes a binary (Y/N) approach, and instead asks whether innovations have been launched which take each aspect into consideration. Using this approach, it is also possible to cluster firms in the same way as Q1, to identify those that follow an integrated approach to design.

Q3: The final proposed question is also from the third round of testing. This question uses the same basic classification as in Q2, but is asking about design resources used for each element. Examples are given to guide the respondent. Firms might be grouped into those

using in-house, those using out-sourced and those using a combination of both for each type of innovation. Firms might also be clustered as in Q1 and Q2 to isolate those using either in-house or outsourced whilst adopting an integrated approach to design.

Recommended Question 1: Comparison of new products against competitors

For products (goods and services) introduced in the last three years, how do they compare against competitive offerings in your market place? *Note: If your firm has multiple product ranges targeted at different market segments, please answer for the dominant or most significant products in your portfolio that best characterise your business.*

Please ⊠ one box only for each category

Technical performance or functionality in comparison to competitive products (e.g. efficiency, precision, speed, accuracy etc)

Significantly worse	Slightly worse	About the same	Slightly better	Significantly better	Not applicable
☐	☐	☐	☐	☐	☐

Style or aesthetics in comparison to competitive products (e.g. how the product or service looks, its appearance, shape or graphics)

Very dated, unattractive or unappealing	Slightly dated, unattractive or unappealing	About the same	Slightly more up to date, attractive or appealing	Significantly more up to date, attractive or appealing	Not applicable
☐	☐	☐	☐	☐	☐

Brand identity in comparison to competitive products (e.g. how strongly customer's associate with the brand or overall image of the product)

Very weak brand identity	Weak brand identity	About the same	Strong brand identity	Very strong brand identity	Not applicable
☐	☐	☐	☐	☐	☐

Delivery to customers in comparison to competitive products (e.g. speed of delivery, responsiveness, efficiency)

Significantly worse	Slightly worse	About the same	Slightly better	Significantly better	Not applicable
☐	☐	☐	☐	☐	☐

Sales price in comparison to competitive products

Significantly lower	Slightly lower	About the same	Slightly higher	Significantly higher	Not applicable
☐	☐	☐	☐	☐	☐

Recommended Question 2: Introduction of innovations

During the three years 20XX-20YY, did your enterprise introduce …

Please tick Y or N in each case		Y	N
Goods that:	Provide changes in technology, performance or functionality, including usability	☐	☐
	Provide lower costs of production	☐	☐
	Provide changes to product form (appearance) or packaging	☐	☐
Services that:	Provide changes in performance (e.g. efficiency, speed) or new levels of functionality to customers (e.g. internet banking, pick-up and drop-off services for rental cars)	☐	☐
	Provide changes in user-experience	☐	☐
Production **process**, distribution method or delivery method that:	Reduce the cost of manufacturing or delivering goods and services (e.g. automation equipment)	☐	☐
	Increase the quality of manufacturing or delivering goods or services	☐	☐
	Enable the production or delivery of an entirely new product or service	☐	☐
Marketing methods that:	Use new media or new techniques for promoting goods and services	☐	☐
	Use new methods for product placement or new sales channels for goods and services	☐	☐
	Create a new brand image, brand symbols or brand identities for goods and services	☐	☐

Recommended Question 3: Design resources for innovation

For the implementation of new products (goods and services), please indicate the type of design resources that **best** describes the resources that you use (examples are provided).

Please ⊠ one box only for each category

Please tick the most appropriate option			In-house	Outsourced	Both in-house and outsourced	No specific design resources used
Goods that:	Provide changes in technology, performance or functionality, including usability	e.g. engineering designers, software designers, ergonomists, electronic designers	☐	☐	☐	☐
	Provide changes to product form (appearance) or packaging	e.g. Industrial designers, product designers, interface designers	☐	☐	☐	☐
Services that:	Provide significant improvements in performance (e.g. efficiency, speed) or new levels of functionality to customers (e.g. internet banking, pick-up and drop-off services for rental cars)	e.g. Service designers, process designers, user interface designers, web designers	☐	☐	☐	☐
Production **process**, distribution method or delivery method that:	Reduce the cost or increase the quality of manufacturing and delivering goods and services (e.g. automation equipment)	e.g. Engineering designers, production engineers, process designers	☐	☐	☐	☐
Marketing methods that:	Use new techniques for promotion, use new methods for product placement or create a new brand image, brand symbols or brand identities for goods and services	e.g. Graphic designers, branding designers, strategic designers, web designers	☐	☐	☐	☐

Appendix 1: Questionnaire v1

Test 1: Questionnaire V1

Aim

This study is seeking to understand the most effective way to measure the contribution of design to economic value creation in firms throughout Europe.

The main source of data on innovative activity in firms across Europe is provided through the Community 'Community Innovation Survey'. Within this survey, design is a small component.

We are seeking your views on the way in which design is treated within the Community Innovation Survey. We will then provide you with some alternative questions about design for comparison. We are interested to capture your views on these alternative approaches in order to influence the design of future questionnaires.

This questionnaire should be completed by a senior manager within the firm with responsibility over either product development or marketing activities. This might be the Technical Director, the Marketing Director, the Design Director or the CEO (or equivalents).

Section 1: Defining product innovation and innovation activity

In this section, we will first present the question as it is currently asked within the Community Innovation Survey (CIS). We will then present an alternative wording. In each case, we are seeking your views on clarity, your ability to answer with precision and the extent to which the question captures 'design' as you understand it.

1.1   Defining product innovation (CURRENT CIS WORDING)

Product (good or service) innovation: A product innovation is the market introduction of a new or significantly improved good or service with respect to its capabilities, user friendliness, components or sub-systems.

- Product innovations (new or improved) must be new to your enterprise, but they do not need to be new to your market.

- Product innovations could have been originally developed by your enterprise or by other enterprises or institutions.

A good is usually a tangible object such as a smartphone, furniture, or packaged software, but downloadable software, music and film are also goods. A service is usually intangible, such as retailing, insurance, educational courses, air travel, consulting, etc.

Q1.1.1   Within this definition of innovation, where do you feel design fits?

Q1.1.2   How might you change this definition to better reflect design as a part of innovation as you understand it?

1.2   Innovation activity

CURRENT CIS WORDING

During the three years 2010 to 2012, did your enterprise engage in the following innovation activities:

	Yes	No
Goods innovations: New or significantly improved goods (exclude the simple resale of new goods and changes of a solely aesthetic nature)	☐	☐
Service innovations: New or significantly improve services	☐	☐

Q1.2.1   How effectively does this CIS question capture design as a part of innovation?

Q1.2.2   Any general observations or comments?

ALTERNATIVE WORDING

During the three years 2010 to 2012, did your enterprise engage in the following innovation activities:

	Yes	No
Goods innovations: New or significantly improve goods (exclude the simple resale of new good)	☐	☐
Service innovations: New or significantly improve services	☐	☐
What was the main character of the innovation? (please tick only one)		
a) Changes in functionality or performance to goods/services	☐	
b) Changes to experiential or intangible aspects of goods/services (e.g. aesthetics, forms, user interfaces, meaning and customer experience)	☐	
c) Combination of both a) and b)	☐	

Q1.2.3   How effectively does this ALTERNATIVE question capture design as a part of innovation?

Q1.2.4   Comparing the CIS question with the ALTERNATIVE, which is the most clear?

Q1.2.5   Comparing the CIS question with the ALTERNATIVE, which provides the best definition of design as a part of innovation?

Q1.2.5   Comparing the CIS question with the ALTERNATIVE, which would be

Q1.2.6   Any general comments or observations?

Section 2: Defining other forms of innovation

In this section, we will first present the question as it is currently asked within the Community Innovation Survey (CIS). We will then present an alternative wording. In each case, we are seeking your views on clarity, your ability to answer with precision and the extent to which the question captures 'design' as you understand it.

2.1   Defining process innovation (CURRENT CIS)

Process innovation: A process innovation is the implementation of a new or significantly improved production process, distribution method, or supporting activity.

- Process innovations must be new to your enterprise, but they do not need to be new to your market.

- The innovation could have been originally developed by your enterprise or by other enterprises or institutions.

- Exclude purely organisational innovations – these are covered in section 8.

During the three years 2010 to 2012, did your enterprise introduce:	Yes	No
New or significantly improved methods of manufacturing or producing goods or services	☐	☐
New or significantly improved logistics, delivery or distribution methods for your inputs, goods or services	☐	☐
New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing	☐	☐

Q 2.1.1 How effectively does this question capture design as a part of innovation?

Q 2.1.2 How might you change this question to better reflect design as a part of innovation as you understand it?

2.2   Defining and measuring organisational innovation (CURRENT CIS)

Organisational Innovation: An organisational innovation is a new organisational method in your enterprise's business practices (including knowledge management), workplace organisation or external relations that has not been previously used by your enterprise.

- It must be the result of strategic decisions taken by management.

- Exclude mergers or acquisitions, even if for the first time.

During the three years 2010 to 2012, did your enterprise introduce:	Yes	No
New business practices for organising procedures (i.e. supply chain management, business re	☐	☐
New methods of organising work responsibilities and decision making (i.e. first use of a new system of employee responsibilities, team work,	☐	☐
New methods of organising external relations with other firms or public institutions (i.e. first use of alliances, partnerships, outsourcing or sub	☐	☐

Q2.2.1   How effectively does this question capture design as a part of innovation?

Q2.2.2   How might you change this question to better reflect design as a part of innovation as you understand it?

2.3   Defining and measuring marketing innovation (CURRENT CIS)

Marketing innovation: A marketing innovation is the implementation of a new marketing concept or strategy that differs significantly from your enterprise's existing marketing methods and which has not been used before.

- It requires significant changes in product design or packaging, product placement, product promotion or pricing.

- Exclude seasonal, regular and other routine changes in marketing methods.

During the three years 2010 to 2012, did your enterprise introduce:	Yes	No
Significant changes to the aesthetic design or packaging of a good or service (exclude changes that alter the product's functional or user characteristics – these are product innovations)	☐	☐
New media or techniques for product promotion (i.e. the first time use of a new advertising media, a new brand image, introduction of loyalty cards,	☐	☐
New methods for product placement or sales channels (i.e. first time use of franchising or distribution licenses, direct selling, exclusive retailing, new concepts for product presentation, etc)	☐	☐
New methods of pricing goods or services (i.e. first time use of variable pricing by demand, discount systems, etc)	☐	☐

Q2.3.1 How effectively does this question capture design as a part of innovation?

Q2.3.2 How might you change this question to better reflect design as a part of innovation as you understand it?

Q2.4 For all of these questions together, could the interviewee comment on how design might fit into this categorisation?

Section 3: Innovation activities

In this section, we will first present the question as it is currently asked within the Community Innovation Survey (CIS). We will then present an alternative wording. In each case, we are seeking your views on clarity, your ability to answer with precision and the extent to which the question captures 'design' as you understand it.

3.1   Innovation activities (CURRENT CIS)

During the three years 2010 to 2012, did your enterprise engage in the following innovation activities:

		Yes	No
In-house R&D	Research and development activities undertaken by your enterprise to create new knowledge or to solve scientific or technical problems (include software development in-house that meets this requirement)	☐	☐
	If yes, did your enterprise perform R&D during the three years 2010 to 2012:		
	Continuously (your enterprise has permanent R&D staff in-house)	☐	☐
	Occasionally (as needed only)	☐	☐
External R&D	R&D that your enterprise has contracted out to other enterprises (including other enterprises in your group) or to public or private research organisations	☐	☐
Acquisition of machinery, equipment, software & buildings	Acquisition of advanced machinery, equipment, software and buildings to be used for new or significantly improved products or processes	☐	☐
Acquisition of existing knowledge from other enterprises or organisations	Acquisition of existing know-how, copyrighted works, patented and non-patented inventions, etc. from other enterprises or organisations for the development of new or significantly improved products and processes	☐	☐
Training for innovative	In-house or contracted out training for your personnel specifically for the development and/or introduction of new or	☐	☐

activities	significantly improved products and processes		
Market introduction of innovations	In-house or contracted out activities for the market introduction of your new or significantly improved goods or services, including market research and launch advertising	☐	☐
Design	In-house or contracted out activities to design or alter the shape or appearance of goods or services	☐	☐
Other	Other in-house or contracted out activities to implement new or significantly improved products and processes such as feasibility studies, testing, tooling up, industrial engineering, etc.	☐	☐

Q3.1.1   How effectively does this question capture design activity as a part of innovation?

Q3.1.2   How might you change this question to better capture design activity as a part of innovation as you understand it?

3.2   Innovation activities (ALTERNATIVE)

During the three years 2010 to 2012, did your enterprise engage in the following innovation activities:

		Yes	No	What proportion (%) of this activity is design
In-house R&D	Research and development activities undertaken by your enterprise to create new knowledge or to solve scientific or technical problems (include software development in-house that meets this requirement) If yes, did your enterprise perform R&D during the three years 2010 to 2012:	☐	☐	
	Continuously (your enterprise has permanent R&D staff in-house)	☐	☐	
	Occasionally (as needed only)	☐	☐	
External R&D	R&D that your enterprise has contracted out to other enterprises (including other enterprises in your group) or to public or private research organisations	☐	☐	
Acquisition of machinery, equipment, software &	Acquisition of advanced machinery, equipment, software and buildings to be used for new or significantly improved products or processes	☐	☐	

buildings			
Acquisition of existing knowledge from other enterprises or organisations	Acquisition of existing know-how, copyrighted works, patented and non-patented inventions, etc. from other enterprises or organisations for the development of new or significantly improved products and processes	☐	☐
Training for innovative activities	In-house or contracted out training for your personnel specifically for the development and/or introduction of new or significantly improved products and processes	☐	☐
Market introduction of innovations	In-house or contracted out activities for the market introduction of your new or significantly improved goods or services, including market research and launch advertising	☐	☐
Other	Other in-house or contracted out activities to implement new or significantly improved products and processes such as feasibility studies, testing, tooling up, industrial engineering, etc.	☐	☐

Q3.2.1   How effectively does this question capture design activity as a part of innovation?

Q3.2.2   How easily could you make estimations about design effort? Where would you get the data from?

Q3.2.2   How accurately could you answer this question?

Section 4: Innovation investment

In this section, we will first present a question as it is currently asked within the Community Innovation Survey (CIS). We will then present two alternative forms of wording or structuring this question. In each case, we are seeking your views on clarity, your ability to answer with precision and the extent to which the question captures 'design' as you understand it.

4.1   Innovation investment (CURRENT CIS)

How much did your enterprise spend on each of the following innovation activities in 2012 only? Innovation activities are defined above. Include current expenditures (including labour costs, contracted-out activities, and other related costs) as well as capital expenditures on buildings and equipment.

Please fill in '0' if your enterprise had no expenditures for an activity in 2012.
With a lack of precise accounting data please use estimates

In-house R&D (Include current expenditures including labour   €__ __ __ __ __ ,
costs and capital expenditures on buildings and equipment   0 0 0

specifically for R&D)

External R&D	€ __ __ __ __ __ , 0 0 0
Acquisition of machinery, equipment, software & buildings (Exclude expenditures on these items that are for R&D)	€ __ __ __ __ __ , 0 0 0
Acquisition of existing knowledge from other enterprises or institutions	€ __ __ __ __ __ , 0 0 0
All other innovation activities including design, training, marketing, and other relevant activities	€ __ __ __ __ __ , 0 0 0
Total expenditures on innovation activities (Sum of expenditures for all types of innovation activities)	€ __ __ __ __ __ , 0 0 0

Q4.1.1 How effectively does this question capture design activity as a part of innovation in order that you might estimate investment?

Q4.1.2 How accurately could you provide data on design investment using this question?

Q4.1.3 How might you change this question to enable better estimation of design investment as you understand it?

4.2 Measuring innovation investment (ALTERNATIVE)

How much did your enterprise spend on each of the following innovation activities in 2012 only? Innovation activities are defined above. Include current expenditures (including labour costs, contracted-out activities, and other related costs) as well as capital expenditures on buildings and equipment.

Please fill in '0' if your enterprise had no expenditures for an activity in 2012.
With a lack of precise accounting data please use estimates

		Estimated proportion of this expenditure that relates to design
In-house R&D (Include current expenditures including labour costs and capital expenditures on buildings and equipment specifically for R&D)	€ __ __ __ __ __ , 0 0 0	%
External R&D	€ __ __ __ __ __ , 0 0 0	%
Acquisition of machinery, equipment, software &	€ __ __ __ __ __ ,	%

buildings (Exclude expenditures on these items that are for R&D)	0 0 0	
Acquisition of existing knowledge from other enterprises or institutions	€ __ __ __ __ __ , 0 0 0	%
All other innovation activities including, training, marketing, and other relevant activities	€ __ __ __ __ __ , 0 0 0	%
Total expenditures on innovation activities (Sum of expenditures for all types of innovation activities)	€ __ __ __ __ __ , 0 0 0	%

Q4.2.1 How effectively does this question capture design activity as a part of innovation in order that you might estimate investment?

Q4.2.2 How accurately could you provide data on design investment using this question?

Q4.2.3 How might you change this question to enable better estimation of design investment as you understand it?

Q4.2.4 Would it be helpful to split the R&D category into two separate categories of Research and Development?

Section 5: Some alternative ways of asking about design

In this section, we will present some questions that are not aiming to follow or use the CIS structure. Here, we are trying some alternative ways in which we might find out more about design in your firm. Again, we are seeking to know whether the question is clear, how precisely you feel you might be able to answer and what changes you might suggest.

5.1   Importance of design

In your view, how important is design to the execution and completion of the following innovation activities:

	Design is Not important	Design is Slightly important	Design is Important	Design is Very important	Don't know
Research (Activities undertaken by your enterprise to create new knowledge or to solve scientific or technical problems)	☐	☐	☐	☐	☐
Development of goods and services with respect to performance and functionality	☐	☐	☐	☐	☐
Development of the intangible or experiential aspects of goods and services (e.g. appearance, aesthetics,	☐	☐	☐	☐	☐

packaging, branding, user interfaces, meaning and customer experience)					

Q5.1.1   How accurately can you provide data on design using this question?

Q5.1.2   How might you change this question to enable better estimation of design investment as you understand it?

5.2   Human resources for design

What design resources do you employ in your firm?

Human resources with the skills to develop goods or services with improvements or changes to performance or functionality	Number of people employed in-house	
	Number of people working under contract with third parties	
Human resources with the skills to create new or intangible or experiential aspects of goods and services (e.g. appearance, aesthetics, packaging, branding, user interfaces, meaning and customer experience)	Number of people employed in-house	
	Number of people working under contract with third parties	
Human resources with the skills to integrate improvements in both performance / functionality AND improvements in the intangible or experiential aspects of new products and services.	Number of people employed in-house	
	Number of people working under contract with third parties	

Q5.2.1   How accurately can you provide data on design using this question?

Q5.2.2   How might you change this question to enable better estimation of design investment as you understand it?

5.3   Effort in designing new goods and services

In your view, what proportion of the overall effort in each of these innovation activities is design?

	<1%	2-5%	6-10%	11-20%	21-40%	41-70%	>71%	Don't know
Research (Activities undertaken by your enterprise to create new knowledge or to solve scientific	☐	☐	☐	☐	☐	☐	☐	☐

or technical problems)								
Development of goods and services with respect to performance and functionality	☐	☐	☐	☐	☐	☐	☐	☐
Development of the intangible or experiential aspects of goods and services (e.g. appearance, aesthetics, packaging, branding, user interfaces, meaning and customer experience)	☐	☐	☐	☐	☐	☐	☐	☐

Q5.3.1   How accurately can you provide data on design using this question?

Q5.3.2   How might you change this question to enable better estimation of design investment as you understand it?

5.4   Introduction of new products (goods and services)

What is the nature of the new products that you have introduced to the market place in the last 2 and the last 5 years?

	New products launched in the last 2 years			New products launched in the last 5 years		
Product innovations	Number launched	% of total revenues from these new products	% of total operational profit from these new products	Number launched	% of total revenues from these new products	% of total operational profit from these new products
New products introduced to the market only offering new or improved performance or functionality						
New products introduced to the market only offering new or improved intangible or experiential aspects (e.g. appearance, aesthetics,						

packaging, branding, user interfaces, meaning and customer experience)							
New products introduced to the market offering a good fit of new or improved performance / functionality AND User experience (e.g. appearance, aesthetics, packaging, branding, user interfaces, meaning and customer experience)							

Q5.4.1   How accurately can you provide data on design using this question?

Q5.4.2   How might you change this question to enable better estimation of design investment as you understand it?

5.5   How do your products compete?

On what basis do your products have competitive advantage over competing products (please tick only one)?

Low cost	☐
Product (good/service) performance or functionality (e.g. reliability, durability, efficiency, precision etc)	☐
Intangible or experiential attributes of the product (good/service), (e.g. user experience, product appearance, appearance, packaging, branding, user interfaces etc)	☐
BOTH Performance/functionality AND User experience (e.g. appearance, aesthetics, packaging, branding, user interfaces, meaning and customer experience)	☐

Q5.5.1   How accurately can you provide data on design using this question?

Q5.5.2   How might you change this question to enable better estimation of design investment as you understand it?

5.6 Nature or character of innovation

Which of the following is most important for the competitiveness of your products (goods and services). Apportion 100 points between the following 4 categories … (e.g. if they are all equally important, then score each 25. If only cost is important then score it 100)

Low cost	
Performance and functionality	
User experience: appearance, packaging, branding	
BOTH Performance and functionality AND User experience (e.g. appearance, aesthetics, packaging, branding, user interfaces, meaning and customer experience)	
TOTAL	100

Q5.6.1   How accurately can you provide data on design using this question?

Q5.6.2   How might you change this question to enable better estimation of design investment as you understand it?

5.0 Your comments

5.1   Do you have any further comments about how design can be measured as a part of innovation

_____
_____

_____
_____

_____
_____

_____
_____

5.2   Would you be willing to talk to the project sponsors about this work?   Yes ☐ No ☐

    5.1.1
    Email_____

    5.1.2. Telephone _____

6.0 Personal/company information

About You and your company: With this question, we wish to collect basic information about you and your company to enable us to compare views from different respondents. We understand if you would rather not include financial data, but would like to reassure you that all data will be treated confidentially.

Your name	
Country	*DROP DOWN LIST*
Job Title	
Company Name	
Company's main products/services	
Company turnover in the last financial year (In local currency)	
Company profit in the last financial year (in local currency)	
Percentage change in turnover over the last 5 years	
Percentage change in profit over the last 5 years	
Do you export your goods or services?	Yes ☐ No ☐
Number of employees	

Thank you for completing the questionnaire. If you have any questions about this questionnaire please contact Barcelona Design Centre **(email)**

Appendix 2: Questionnaire v2

Test 2: Questionnaire V2

We are testing different ways in which we might ask companies about their activities, effort and perspective on design. In the following questionnaire, there are a number of alternative questions regarding design. Could you please complete these to the best of your ability? The interviewer will then ask you some questions about each to determine the extent to which the concepts are clear and the questions are simple to answer.

Today design is considered much more than aesthetic appearance. Design is an integrator of end user characteristics. The aim of such an integrating approach is to maximize end user values within given restrictions. Thus design as an integrator of new or improved performance and new or improved emotions may lead to product (goods or services) innovations, process innovations, organizational innovations and marketing innovations.

Our definition of design in the context of a firm is: To design is [to focus on] the integration of functional, emotional and social utilities.

Therefore we will be asking about different issues relating to your strategy towards the implementation of functional and emotional improvements in order to monitor the role of design in your innovation activity.

Here are a few well know examples where design has been an integrator of functional, emotional and social values:

- **Product innovation**: iphone - the integration of telecommunication performances, ease of use (function), elegance and pleasure to use (emotions) and socially acceptable/desirable (social).

- **Process and service innovation**: Online banking – The integration performances, 24h availability of services (function) , freedom to use, independence (emotions) and socially acceptable (social).

- **Process innovation**: Production and logistic process to deliver custom-built computers from factory to customer by Dell Corporation. The integration of the desired combination of performances for each computer and the reduction of distribution costs (functional) freedom to create your own computer (emotional) and being perceived by others as someone with independent mind (social).

- **Organizational innovation**: NIKEiD Innovation in process enabling to move from mass production to mass customization in fashion. The integration of better fit shoes/feet (functional; customized fixtures (emotional) and socially desired (social).

- **Marketing innovation**: Expand from physical retail to online/app sales – Integration of performance, accessibility, faster search time (functions), freedom to use, sense of control, personalized apps (emotion) and socially acceptable.

Q1 Approach to innovation

Q1.1 During the years 2011-2012 did your enterprise implemented any of the following ways to innovate?

	Yes	No
Goods innovations	☐	☐
Service innovations	☐	☐
Process innovation	☐	☐
Organizational innovation	☐	☐
Marketing innovation	☐	☐

Q1.2 During the years 2011-2012 what number of innovation did your firm implemented?

	Number
Goods innovations	
Service innovations	
Process innovation	
Organizational innovation	
Marketing innovation	

Q1.3 During the years 2011-2012 what was the priority of your firm towards the different types of innovation?

	Rate 1 to 5 (1 low priority, 5 high priority)
Goods innovations	
Service innovations	
Process innovation	
Organizational innovation	
Marketing innovation	

Q1.4 Which one of these questions (1.1, 1.2 or 1.3) was easier for you to answer?

Q1.5 Which one of these questions (1.1, 1.2 or 1.3) better captures the reality of activity in your firm?

Q2 Focus of innovations

Q2.1 For your innovations, what are the main ways in which they are differentiated?

	Yes	No
Offering better functional performances than competitors	☐	☐
Offering better aesthetics, or better emotions or experience than competitors, other than derived from performances	☐	☐
Offering a better mix/integration of performances and emotions than competitors	☐	☐
Offering similar performances and emotions than competitors but at a lower cost	☐	☐

Q2.2 What priority does your firm give to each focus of innovation?

	Rate 1 to 5 (1 low priority, 5 high priority)
Offering better functional performance than competitors	
Offering better aesthetics, better emotions or better experience than competitors, other than derived from performance	
Offering a better mix/integration of performance and emotion than competitors	
Offering similar performance and emotion as competitors but at a lower cost	

Q2.3 How many of each of the following type of innovations were implemented by your firm during the year 2011-2012?

	Number of innovations
Offering better functional performance than competitors	
Offering better aesthetics, better emotions or better experience than competitors, other than derived from performance	
Offering a better mix/integration of performance and emotion than competitors	
Offering similar performance and emotion as competitors but at a lower cost	

Q2.4 On what basis do your innovations have competitive advantage over other offerings in your market?

	All of our innovations	Some of our innovations	None of our innovations
Offering better functional performance than competitors	☐	☐	☐
Offering better aesthetics, better emotions or better experience than competitors, other than derived from performance	☐	☐	☐
Offering a better mix/integration of performance and emotion than competitors	☐	☐	☐
Offering similar performance and emotion as competitors but at a lower cost	☐	☐	☐

Q2.5 Please indicate the main differentiation focus of your innovations:

	Yes	No
Do you implement technological innovation, providing new improved performance?	☐	☐
Do you add design to your new products or services as a styling?	☐	☐
Do your innovations offer a mix or new/improved performance and emotion, where design plays a key role as integrator of appearance, applications and performance?	☐	☐
Do your innovations offer similar styling and performance as competitors but at a lower cost?	☐	☐

Q2.6 Which one of these questions (2.1 - 2.5) was easier for you to answer?

Q2.7 Which one of these questions (2.1 - 2.5) better captures the reality of activity in your firm?

Q3 Resources dedicated to integration activities

Q3.1 Please indicate the resources dedicated to creating innovations, focusing on the integration of both PERFORMANCE/FUNCTIONALITY AND EMOTIONS /EXPERIENCES

Number of people employed in-house	
Economic budget for in-house activities	

Economic budget for in-source activities	

Q3.2 Was this question easy to answer?

Q3.3 Does this question capture the reality of the situation in your firm?

Q4 Revenue from integrated design activities

Q4.1 What is the percentage of today's revenue that is due to innovations implemented in the last three years which have focused on the integration of performance/functionality AND emotions/experiences?

Q4.2 What is the percentage of today's MARGINS that is the result of innovations implemented in the last three years which have focused on the integration of performance/functionality AND emotions/experiences?

Q4.3 Over the last three years, how important are innovation activities which have focused on the integration of performance/functionality AND emotions/experiences to your current business performance? (Rate 1 to 5 – 1 is low importance, 5 is high importance)

Q4.4 Which one of these questions (4.1 – 4.3) was easier for you to answer?

Q4.5 Which one of these questions (4.1 – 4.3) better captures the reality of activity in your firm?

Q5 Your comments

5.1 Do you have any further comments about how design can be measured as a part of innovation

_____
_____

_____
_____

_____
_____

_____
_____

COORDINATOR: PARTNERS: designaustria   Hungarian Intellectual Property Office   SVID   UNIVERSITY OF CAMBRIDGE   COFINANCED BY: TILLVÄXT VERKET   bmwfi

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5.2   Would you be willing to talk to the project sponsors about this work?   Yes ☐ No ☐

    6.2.1
Email_____

    6.2.2. Telephone _____

Q6   Personal/company information

About You and your company: With this question, we wish to collect basic information about you and your company to enable us to compare views from different respondents. We understand if you would rather not include financial data, but would like to reassure you that all data will be treated confidentially.

Your name	
Country	
Job Title	
Company Name	
Company's main products/services	
Company turnover in the last financial year (In local currency)	
Company profit in the last financial year (in local currency)	
Percentage change in turnover over the last 5 years	
Percentage change in profit over the last 5 years	
Do you export your goods or services?	Yes ☐ No ☐
Number of employees	

Thank you

Thank you for completing the questionnaire. If you have any questions about this questionnaire please contact **Barcelona Design Centre** (email)

Appendix 3: Questionnaire v3

Test 3: Questionnaire V3

The goal of this survey is to collect information on your enterprise's design related innovation activities during the three years 2010, 2011 and 2012.

After each question we will ask you how difficult or easy the question was to understand and also how easy or difficult it was to provide an answer.

Basic definitions

Under a technology push model of innovation, design is a styling add-on taking place in the latter stages of development. Under a systemic model of innovation, to design is [to focus on] the integration of functional, emotional and social utilities of new or improved products (goods and services), processes and marketing methods.

The goal of this questionnaire is to obtain information on the role of design in innovations of a new or significantly improved product (goods and services), process (manufacturing, delivery or distribution) or marketing method by your enterprise. The innovation must be new to your enterprise, but not necessarily new to the market.

A good is usually a tangible object such as a smart phone, furniture or software. A service is usually intangible, such as retailing, insurance, educational courses, air travel, consulting etc. Many products contain both tangible and intangible elements.

Using this broad definition:

- For product innovations, design seeks to create new or significantly improved products (goods and services) that are functionally effective (e.g. performance,

usability, levels of functionality) and that deliver appropriate emotional and social experiences (e.g. aesthetics, ergonomics, image) for customers.

- For process innovations, design seeks to create new or significantly improved processes (manufacturing, delivery and distribution) to enable the delivery of products (goods and services) in ways that are functionally effective (e.g. efficient, high quality, low rates of error) and that deliver suitable emotional and social experiences (e.g. image, satisfaction) for all stakeholders, especially customers.

- For innovative marketing methods, design seeks to create new or significantly improved marketing methods (e.g. product promotions, brand images, placements and pricing approaches) that are functionally effective and that deliver appropriate emotional and social experiences for customers.

1.0 General information about the enterprise

1.1 Person we should contact if there are any queries regarding the form:

Your name	
Job Title	
Organisation	
Phone	
Fax	
E-mail	

1.2 General information about the enterprise

Name of enterprise	
Address of enterprise	Postal code
Main activity (products/services)	
In 20YY, was your enterprise part of an enterprise group (2 or more legally defined enterprises under common ownership)	Yes ☐ No ☐
In which geographic markets did your enterprise sell goods and/or services during the three years 20XX to 20YY	
Local/regional (within your country)	Yes ☐ No ☐
National (other regions of your country)	Yes ☐ No ☐
Other EU nations	Yes ☐ No ☐
Other nations	Yes ☐ No ☐
Which of these geographic areas was your largest market in terms of turnover during the three years 20XX to 20YY	a)☐ b)☐ c)☐ d)☐
What was your enterprise's total turnover for 20XX to 20YY (market sales of goods and services)	X _ _ _ ,_ _ _ ,000
Percentage change in turnover in the period 20XX to 20YY	%
Percentage change in profit in the period 20XX to 20YY	%
What was your enterprise's average number of employees in 20XX and 20YY	20XX _ _ _ _ _ 20YY _ _ _ _ _
Number of designers employed in 20YY	

Are you an R&D active firm?	Yes ☐	No ☐

2.0 Types of innovation

2.1   During the years 2010-2012, what was the priority of your enterprise towards the different types of innovation?

	Very high priority	High priority	Medium priority	Low Priority	Very low priority
Goods innovations	☐	☐	☐	☐	☐
Service innovations	☐	☐	☐	☐	☐
Process innovations	☐	☐	☐	☐	☐
Marketing innovations	☐	☐	☐	☐	☐
Organisational innovations	☐	☐	☐	☐	☐

2.2   How difficult was it to understand this question?

Very difficult to understand	Difficult to understand	Neither difficult nor easy to understand	Easy to understand	Very easy to understand
☐	☐	☐	☐	☐

2.3   How difficult was it to provide the answers to this question?

Very difficult to answer	Difficult to answer	Neither difficult nor easy	Easy to answer	Very easy to answer
☐	☐	☐	☐	☐

3.0   Introduction of innovations

3.1   During the three years 20XX-20YY, did your enterprise introduce new or significantly improved …

Please tick Y or N in each case		Y	N
	Utilise new knowledge or technologies	☐	☐
	Provide a new use for existing knowledge or technologies	☐	☐
Goods that:	Provide significant improvements in performance or functionality, including usability	☐	☐
	Provide lower costs of production without changes to the underlying performance characteristics	☐	☐

	Provide changes to product form (appearance) or packaging that do not alter the underlying performance characteristics	☐	☐
Services that:	Provide significant improvements in how they are provided to customers (e.g. efficiency or speed)	☐	☐
	Provide the addition of new functions or characteristics to existing services (e.g. internet banking, pick-up and drop-off services for rental cars)	☐	☐
	Provide changes in user experience that do not alter the underlying performance or basic levels of functionality	☐	☐
	Have not previously been offered by the company	☐	☐
Production process, distribution method or delivery method that:	Reduce the cost of manufacturing or producing goods and services (e.g. automation equipment)	☐	☐
	Reduce the cost of delivering or distributing goods and services	☐	☐
	Increase the quality of manufacturing or producing goods or services	☐	☐
	Increase the quality of delivering or distributing goods or services	☐	☐
	Enable the production or delivery of an entirely new product or service	☐	☐
Marketing method that:	Uses new media or techniques for promotion of goods and services	☐	☐
	Uses new methods for product placement or new sales channels for goods and services	☐	☐
	Creates a new brand image, brand symbols or brand identities for goods and services	☐	☐
	Uses new methods of pricing goods or services	☐	☐

3.2   How difficult was it to understand this question?

Very difficult to understand	Difficult to understand	Neither difficult nor easy to understand	Easy to understand	Very easy to understand
☐	☐	☐	☐	☐

3.3   How difficult was it to provide the answers to this question?

Very difficult to answer	Difficult to answer	Neither difficult nor easy	Easy to answer	Very easy to answer
☐	☐	☐	☐	☐

4.0 Importance of design to these innovations

4.1 For the implementation of these new or significantly improved products (goods and services), processes and marketing methods, please indicate the importance of design. Please refer to the definition of design as provided at the start of this questionnaire.

Goods that:	Utilise new technologies, or provide new uses for existing technologies. Provide performance or functional improvements. Provide lower costs of production.	Design is not important 1 2 3 4 5 Design is very important	Did not introduce Not relevant ☐
	Provide changes to product form (appearance) or packaging that do not alter the underlying performance characteristics	Design is not important 1 2 3 4 5 Design is very important	Did not introduce Not relevant ☐
Services that:	Offer significant improvements in how they are provided to customers (e.g. efficiency or speed), new functions or characteristics to existing services (e.g. internet banking, pick-up and drop-off services for rental cars), or that provide changes in user experience.	Design is not important 1 2 3 4 5 Design is very important	Did not introduce Not relevant ☐
Production process, distribution method or delivery method that:	Reduce the cost of manufacturing or producing goods and services (e.g. automation equipment), reduce the cost of delivering or distributing goods and services, increase the quality of manufacturing or producing goods or services or that enable the production or delivery of an entirely new product or service	Design is not important 1 2 3 4 5 Design is very important	Did not introduce Not relevant ☐

Marketing method that:	Uses new media or techniques for promotion of goods and services, uses new methods for product placement or new sales channels for goods and services, creates a new brand image, brand symbols or brand identities for goods and services, Uses new methods of pricing goods or services.	Design is not important	1 2 3 4 5	Design is very important	Did not introduce Not relevant ☐

4.2   How difficult was it to understand this question?

Very difficult to understand	Difficult to understand	Neither difficult nor easy to understand	Easy to understand	Very easy to understand
☐	☐	☐	☐	☐

4.3   How difficult was it to provide the answers to this question?

Very difficult to answer	Difficult to answer	Neither difficult nor easy	Easy to answer	Very easy to answer
☐	☐	☐	☐	☐

5.0   Design resources used for innovation activities

5.1   For the implementation of new or significantly improved products (goods and services), please indicate the type of design resources that your firm utilises. Examples of the types of staff involved in each activity are provided. Please select the category that best describes the resources that you use.

Please tick the most appropriate option			in-house design	external design	in-house and external design	do not use any specific design resources
Goods that:	Utilise new technologies, or provide new uses for existing technologies. Provide performance or functional improvements. Provide lower costs of production.	e.g. engineering designers, software designers, ergonomists, electronic	☐	☐	☐	☐

		designers				
	Provide changes to product form (appearance) or packaging that do not alter the underlying performance characteristics	e.g. Industrial designers, product designers, interface designers	☐	☐	☐	☐
Services that:	Offer significant improvements in how they are provided to customers (e.g. efficiency or speed), new functions or characteristics to existing services (e.g. internet banking, pick-up and drop-off services for rental cars), or that provide changes in user experience.	Service designers, process designers, user interface designers, web designers	☐	☐	☐	☐
Production process, distribution method or delivery method that:	Reduce the cost of manufacturing or producing goods and services (e.g. automation equipment), reduce the cost of delivering or distributing goods and services, increase the quality of manufacturing or producing goods or services or that enable the production or delivery of an entirely new product or service	e.g. Engineering designers, production engineers, process designers	☐	☐	☐	☐
Marketing method that:	Offer significant improvements in how they are provided to customers (e.g. efficiency or speed), new functions or characteristics to existing services (e.g. internet banking, pick-up and drop-off services for rental cars), or that provide changes in user experience.	e.g. Graphic designers, branding designers, strategic designers, web designers	☐	☐	☐	☐

5.2 How difficult was it to understand this question?

Very difficult to understand	Difficult to understand	Neither difficult nor easy to understand	Easy to understand	Very easy to understand
☐	☐	☐	☐	☐

5.3 How difficult was it to provide the answers to this question?

Very difficult to answer	Difficult to answer	Neither difficult nor easy	Easy to answer	Very easy to answer
☐	☐	☐	☐	☐

6.0 Resources dedicated to design

6.1 For the year 2012, please provide an estimate of the resources dedicated to design, where design resources are those resources dedicated to integrating technical performance and user experience in innovation activities.

Number of people employed in house	Number:
Budget for in house activities (in local currency e.g. £)	X_ _ _ , _ _ _ , 000
Budget for outsourced activities	X_ _ _ , _ _ _ , 000

X=local currency

6.2 How difficult was it to understand this question?

Very difficult to understand	Difficult to understand	Neither difficult nor easy to understand	Easy to understand	Very easy to understand
☐	☐	☐	☐	☐

6.3 How difficult was it to provide the answers to this question?

Very difficult to answer	Difficult to answer	Neither difficult nor easy	Easy to answer	Very easy to answer
☐	☐	☐	☐	☐

7.0 Design as a styling add-on or design as an integrator of experiences and performance

7.1 During the period 2010-2012, did you follow one of the following approaches to innovation?

	Y	N
Did you follow a 'technology-push' approach to innovation'? In this approach, your enterprise focused on new or significantly improved technology and design was used to provide styling or aesthetics as an add-on.	☐	☐
Did you follow a design led approach to innovation? In this approach, your enterprise focused on the integration of cost, technical performance and user experience. To achieve this, you placed design at the core of the innovation process as an integrator of technical performance, user experience and product cost?	☐	☐

7.2 If you followed another approach to innovation, please describe the role that design played

7.3 How difficult was it to understand this question?

Very difficult to   Difficult   to   Neither difficult   Easy   to   Very   easy   to
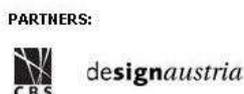
understand	understand	nor easy to understand	understand	understand
☐	☐	☐	☐	☐

7.4   How difficult was it to provide the answers to this question?

Very difficult to answer	Difficult to answer	Neither difficult nor easy	Easy to answer	Very easy to answer
☐	☐	☐	☐	☐

8.0   Relevance of past design activities in today's results

8.1   For innovation projects between 2010 and 2012, where design played a role as an integrator of technical performance and user experience, please indicate their importance in terms of contribution to total business revenue.

Importance to revenue of innovation projects where design played a role as an integrator of technical performance and user experience	Very high	High	Medium	Low	Very low
	☐	☐	☐	☐	☐

8.2   How difficult was it to understand this question?

Very difficult to understand	Difficult to understand	Neither difficult nor easy to understand	Easy to understand	Very easy to understand
☐	☐	☐	☐	☐

8.3   How difficult was it to provide the answers to this question?

Very difficult to answer	Difficult to answer	Neither difficult nor easy	Easy to answer	Very easy to answer
☐	☐	☐	☐	☐

Thank you for your time in answering this questionnaire.

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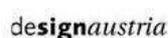
Appendix 4: Questionnaire v4

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Test 4: Questionnaire V4

Many firms view design in a narrow sense as relating to the aesthetics or styling of products. However, design is increasingly seen as providing an integration of different types of utility offered to consumers, including functionality, technical performance, aesthetics, appearance and image. The impacts of design are not limited to physical products. For example, the design of user interfaces and services is increasingly important, such as online purchasing or airport check-in.

The goal of this survey is to collect information regarding your enterprise's approach to design during the three years 2010, 2011 and 2012. Specifically, we will be asking about how new products (goods and services) compare against competitive products for a range of different characteristics.

This study is part of a European project which is seeking to understand how to measure the value of design. More information on the project is available here www.measuringdesignvalue.eu

1   Innovation activity

Please ☒ in one box only

During the last three years, has your firm introduced any new or significantly improved products or services?	Yes ☐ No ☐

If you answered No, please progress to question 4

2   How do your new products (goods and services) compare against competitive offerings?

2.1   For new or significantly improved products (goods and services) introduced in the last three years, how do they compare against competitive offerings in your market place?

Please ☒ one box only for each category
Technical performance in comparison to competitive products (e.g. efficiency, precision, speed, accuracy etc)

Significantly worse	Slightly worse	About the same	Slightly better	Significantly better	Not applicable
☐	☐	☐	☐	☐	☐

Functionality in comparison to competitive products (e.g. provision of different functions or capabilities)

Significantly worse	Slightly worse	About the same	Slightly better	Significantly better	Not applicable
☐	☐	☐	☐	☐	☐

Style or aesthetics in comparison to competitive products (e.g. how the product looks, its appearance or shape)

Very dated, unattractive or unappealing	Slightly dated, unattractive or unappealing	About the same	Slightly more up to date, attractive or appealing	Significantly more up to date, attractive or appealing	Not applicable
☐	☐	☐	☐	☐	☐

Brand identity in comparison to competitive products (e.g. how strongly customer's associate with the brand or overall image of the product)

Very weak brand identity	Weak brand identity	About the same	Strong brand identity	Very strong brand identity	Not applicable
☐	☐	☐	☐	☐	☐

Delivery to customers in comparison to competitive products (e.g. speed of delivery, responsiveness, efficiency)

Significantly worse	Slightly worse	About the same	Slightly better	Significantly better	Not applicable
☐	☐	☐	☐	☐	☐

Sales price in comparison to competitive products

Significantly lower	Slightly lower	About the same	Slightly higher	Significantly higher	Not applicable
☐	☐	☐	☐	☐	☐

2.2 How difficult did you find it to UNDERSTAND the questions in this section? Please describe your thoughts, even if they are brief. Were the concepts clear? Was the language clear?

2.3 How difficult did you find it to ANSWER the questions in this section. Please describe your thoughts, even if they are brief. Could you answer easily and quickly? Did you have all of the information you needed?

2.4 Are there any other comments you wish to make regarding these questions?

3   Company success

3.1   For the business as a whole, how has the company performed over the last three years?

Please ☒ one box only for each category

Turnover

Significant reduction (>10%)	Slight reduction (0-10%)	No change	Slight growth (0-10%)	Significant growth (>10%)
☐	☐	☐	☐	☐

Exports

Significant reduction (>10%)	Slight reduction (0-10%)	No change	Slight growth (0-10%)	Significant growth (>10%)
☐	☐	☐	☐	☐

Profits

Significant reduction (>10%)	Slight reduction (0-10%)	No change	Slight growth (0-10%)	Significant growth (>10%)
☐	☐	☐	☐	☐

4   Contact details and general information about the enterprise

Your name	
Job Title	
Phone	
E-mail	
Name of enterprise	
Main activity (products/services)	
Address of enterprise	Postal code
What was your enterprise's total turnover for 2011 to 2012 (market sales of goods and services)	£ _ _ _ ,_ _ _ ,000
What was your enterprise's average number of employees in 2011 and 2012	2011 2012 _ _ _ _ _ _ _ _ _ _ _ _
Are you an R&D active firm?	Yes ☐ No ☐

Many thanks for your time in answering this questionnaire. Your assistance is greatly appreciated. If you require any further information, please contact the project coordinator at Barcelona Design Centre, Email: EuroDesign@bcd.es
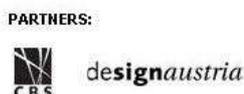
COORDINATOR: BCD Barcelona Centro de Disseny

PARTNERS: CBS · designaustria · Hungarian Intellectual Property Office · SVID · UNIVERSITY OF CAMBRIDGE

COFINANCED BY: European Commission · ENISA · TILLVÄXT VERKET · bmwfi Federal Ministry of Economy, Family and Youth