BEDA Cluster
Measuring Design Value
as a key factor of successful innovation

The support of the European Commission for the production of this publication does not constitute an endorsement of its content, which reflects the views only of the authors. Furthermore, the Commission cannot be held responsible for any possible use or misuse of the information contained in this document.
Introduction

Building on the legacy of €Design EDII project (2012-2014), this Cluster is aimed at continuing working on initiatives towards measurement and monitoring of design's contribution to the economy and jobs creation, and about the relevance of these data for policy makers and the design, innovation and business communities.

Since the end of the project in 2014, we have been watching out any further developments on the measurement of design value in EU innovation surveys. This is the case of the Innobarometer 2015 and 2016 – EU business innovation trends, in its section on The Role of Design.

The definition of design provided by €Design project was: 'To design is to integrate functional, emotional and social utilities when shaping goods, services, processes, messages and strategies'.

The definition of design used by the Innobarometer 2015 and 2016, in line with the definition proposed by €Design project, is: 'Design covers a range of applications within companies, providing a means to integrate functionality, appearance and user experience, for goods or services. Design can also provide a means to build corporate identity and brand recognition'.

Therefore, 13,122 European companies provided information on design based on a broad concept of design as an integrator of functionality, appearance and user experience.

With the Innobarometer data, not only from design but from innovation answers, we have a solid base to estimate the impact of design in the creation of economic value.

On the other hand, the Cluster has been collecting other relevant reports and surveys on measuring design value in order to confront other views and methods being used.

All in all, this report summarizes the latest findings on the topic and intends to be a call of action for a collective effort to continue working on the measurement of design's contribution as a key factor of successful innovation in order to improve design innovation policies and strategies effectiveness around Europe.
The Innobarometer 2015 and 2016, a starting block

The EC Innobarometer 2015 and 2016 – EU business innovation trends, has used the following definition of design in its questionnaire for The Role of Design section:

“Design covers a range of applications within companies, providing a means to integrate functionality, appearance and user experience, for goods or services. Design can also provide a means to build corporate identity and brand recognition.”

Therefore, 13.112 European companies provided information on design based on a broad concept of design as an integrator of functionality, appearance and user experience.

The question on design in the Innobarometer 2015 and 2016 is structured following the Design Ladder (developed by the Danish Design Center in 2001) and proposes to choose one of the following five answers:

1- Design is a central element in the company’s strategy
2- Design is an integral, but not central element of development work in the company
3- Design is used as last finish, enhancing the appearance and attractiveness of the final product
4- The company does not work systematically with design
5- Design is not used in the company

The next question in the Innobarometer questionnaire focuses on the types of innovations introduced by the company and provides five possible alternative answers following the Frascati Manual definition of innovation:

1- New or improved goods
2- New or improved services
3- New or improved processes (e.g. production or distribution processes)
4- New or improved marketing strategies
5- New or improved organizational methods

Therefore the Innobarometer survey data constitutes a solid base to estimate the impact of design in the creation of economic value. We have a robust base to estimate the economic value of design; both, the economic value of design for the firm and the macroeconomic contribution of design. We are in front of a good opportunity to monitor the economic contribution of design and to provide data to business management and to policy makers to better define their company strategies and public policies.

The Flash Report can be found at:
https://publications.europa.eu/en/publication-detail/-/publication/69e52157-2ba9-11e6-b616-01aa75ed71a1
How to interpret the Innobarometer data on design

The Innobarometer 2016 report presents the following data on design:

Sample: 13,112 companies.

But the Innobarometer survey data base contains much more information on design and on the type of innovation (goods, services, process, marketing or organizational).

The combination of the answers on the role of design and the answers on the type of innovation provides much better information on the activity conducted by the firm.

The dimensions of design as a factor of business competitiveness can be perceived according to the four categories of innovation identified under the Frascati Manual, product (goods or services), process, marketing and organizational innovation:

-1. If the company conducts product (good or service) innovation, the survey informs if the company uses design as an aesthetical add-on at the end of the development phase; or uses design as an integral element of development and therefore the company views design as an integrator of functionality, appearance and user experience; or if the company does not use design in its product innovation process.

-2. If the company conducts process innovation, the survey informs if the company uses design as an integral element of the development of the new process; if design is used as a central element in the strategy of the firm to decide the new processes to implement; or if design is not used in the process innovation.

-3. If the company conducts marketing innovations, the survey informs if the company uses design as an aesthetical contribution to the marketing innovation; if design is used as an integral element of the new marketing innovation: if design is used as a central element of the company
strategy to decide the new marketing innovations; or if design is not used by the company in the implementation of marketing innovations.

-4. If the company conducts organizational innovations, it implies that the company implements new or improved business policy, for example, a new or improved strategy, a new or improved structure and/or a new or improved identity. The survey informs if the company uses design as a central element in this innovation and applies design reasoning and principles to the formulation and execution of business policy; if the company uses design as an element in the development of the organizational innovation; if the company just uses design as an aesthetical contributor to new identity of the firm; or if the company does not use design along the organizational innovation.

The current drafting of the questionnaire opens the possibility to have rich information combining the data on the role of design and the information on the type of innovation of each survey response.

Furthermore, the survey provides information on the total turnover of the firm and provides information on the change in turnover since the time period where the innovations where introduced (usually a two year time period prior to the date of the survey).

The survey also provides with a specific question on the percentage turnover due to innovation, but limited to innovative goods or services and therefore does not include data on process, marketing or organizational innovation.

Therefore, the survey provides information on:

1- The type of innovations implemented since two years prior to the date of the survey;
2- The turnover increase or decrease since the innovations were implemented;
3- The percentage of the turnover due to innovative goods or services introduced since goods or services innovations were implemented; and
4- The role of each view of design in the innovation process.

Using these four parameters, it is possible to conduct a first estimate of the contribution of design to the economic value creation of firms and therefore to conduct a first robust estimation of the economic value of design as a factor of competitiveness.

Furthermore, the survey provides information on the percentage of turnover invested in design of goods and services and the investment on organizational or process improvements. This data may be used to estimate rates of return on design efforts.

Conclusions may be broken down per each view of design according to the design ladder classification.
A first set of conclusions from the Innobarometer 2016 and identification of lines of study

As an example of the important information to extract from a cross analysis of the answers from the Innobarometer Survey, we present a first fast revision of the Innobarometer 2016 Report, made available to the public by the EC:


A further detailed and broader exercise should be conducted using the complete database of the survey. In order to quantify the design activity, we shall place a special focus crossing the data on the data on turnover, turnover increase, innovations implemented and design role data of each one of the 13,112 companies surveyed along the 28 EU member states.

The current specific report of Innobarometer 2016 focuses on the percentages of each taxonomical step of design:

The Role of Design

In more than six out of ten companies, design plays a role in some way; 18% say design is integral, but not a central element of development work in the company, 17% say it is not used systematically, 14% say it is used as a last finish and 12% say it is a central element in the company's strategy. More than a third say design is not used in the company (37%). There is little change since the previous survey.

Since the Innobarometer question on design follows the Design Ladder taxonomy, the conclusion of the Innobarometer 2016 follows a pattern similar to the presentation used by the Danish Design Center (DDC) in its Design Ladder 2016 survey:

http://danskdesigncenter.dk/sites/default/files/pdf/design_ladder_2016_eng_0.pdf

According to the Danish Design Center (DDC), “the Design Ladder is based on the hypothesis that there is a positive link between higher earnings, placing a greater emphasis on design methods in the early stages of development and giving design a more strategic position in the company's overall business strategy.
Parameters and links reviewed

We here below describe a first analysis of the Innobarometer 2016 report aimed to extract some hidden conclusions on the role of design in innovation and earnings, as a preliminary example of the rich data that it is possible to extract from the reviewed survey for Innobarometer, aiming to better understand the economic role of design.

1- Innovation activity

The Innobarometer 2016 follows the taxonomical classification of innovation of the Frascati Manual: Product (goods or services) innovation; Process innovation; Marketing innovation; Organizational innovation.

The Innobarometer 2016 concludes that since January 2013, 67% of companies have introduced at least one innovation (Question 2A).
2- Type of Innovation

The Innobarometer 2016 provides a detail of the type of innovation introduced by the company since January 2013.

So, 40% of companies conducted at least one product innovation; 40% conducted at least one service innovation; 30% conducted at least one process innovation; 33% conducted at least one marketing innovation and 34% conducted at least one organizational innovation.
3- The link between innovation activity and turnover increases

The Innobarometer 2016 highlights the link between innovation and turnover increase. For example (page 22) for 62% of the companies, the good or service innovation introduced since January 2013 represents up to a quarter of their turnover.

First conclusion:

Using the complete database of the survey, it is possible to study the link between design activity and turnover increase in a similar or broader way that Innobarometer analyzes the link between a type of innovation and turnover increases.
4- The link between investment in innovation and turnover increase

The Innobarometer 2016 highlights the link between investment in innovation and turnover increases. For example on page 26, Innobarometer 2016 concludes:

‘Companies that invest in innovation are more likely to have higher proportions of turnover associated with innovation. For example, of the companies that invest more than 11% of their turnover into innovative activities, are more likely to say the revenue from innovative goods or services is 26% or more of their turnover (42%) than companies that invest less than 5% in innovation (between 12-15%).’

<table>
<thead>
<tr>
<th>Company size</th>
<th>1-9</th>
<th>10-49</th>
<th>50-249</th>
<th>250+</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU28</td>
<td>62</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-9</td>
<td>63</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-49</td>
<td>63</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-249</td>
<td>59</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>250+</td>
<td>67</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sectors grouped (NACE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manufacturing (C)</td>
<td>69</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail (G)</td>
<td>68</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services (H/I/J/K/L/M/N/R)</td>
<td>57</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry (D/E/F)</td>
<td>63</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company’s turnover since 2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risen by 5% or more</td>
<td>66</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remained approx. the same</td>
<td>65</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fallen by 5% or more</td>
<td>65</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of company’s turnover in 2015 invested in innovation activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td>56</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1%</td>
<td>68</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between 1 and 5%</td>
<td>73</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between 6 and 10%</td>
<td>66</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11% or more</td>
<td>42</td>
<td>42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Second conclusion:**

Using the complete database of the survey, it is possible to study the link between investment in goods or services design and turnover increase in a similar or broader way that Innobarometer analyzes the link between investment in innovation and turnover increases since the survey includes a question on investment on design of products and services (42%) and also on organization and process improvement (51%) (page 38).

An example of the link study to conduct is already performed in the Innobarometer 2016: the link mentioned on page 39 between investment in design of products and services and the company turnover variation since 2013:

‘In general, companies with a turnover risen by 5% or more are more likely to have invested in all of the activities compared with declining turnover companies, e.g. the design of products and services (54% vs. 35%)’.

A first review on the table on page 39 indicates that companies investing in the design of products or services have a higher tendency to increase the turnover 5% or more (54%) than to reduce the turnover by 5% or more (35%). Or, that companies investing in goods or services design have a higher tendency to conduct at least one innovation (54%) than being a non-innovator (20%).

Another important conclusion is to observe that when the company invests in goods or services design, the percentage of non-innovators drop to 20% from the global percentage of 33%.
5- The link between investment in design and innovators; between design role and innovation investment; and design role and innovation activities

Third conclusion (drawn from the previous table):

A rich information may be extracted by comparing the details on the efficiency of design investments as a factor of innovation, compared to the efficiency of R&D as a factor of innovation

In this table we can observe that companies investing in goods or services design obtain 56% of goods and services innovations and 41% of other innovations; while companies investing in R&D only achieve 38% goods or services innovations and 24% other innovations.
The Innobarometer 2016 draws some links between the company characteristics and the types of innovation, with the following conclusions:

a) The introduction of innovations and the rise of turnover:

Page 10: Growing companies, with a turnover rising by more than 5% since 2013, are more likely to have introduced innovation compared with companies where turnover has fallen by 5% or more (75% vs. 60%).

Page 20: Growing businesses in terms of turnover (risen by 5% or more) are more likely to have introduced new or significantly improved goods or services than declining turnover (fallen by 5% or more) (65% vs. 50%).

b) The use of design as a central element in strategy and product innovation:

Page 20: Companies that use design as a central element in their strategy are more likely than those that do not, to have introduced new or significantly improved goods or services (73% vs. 42%).

This conclusion is illustrated with the table on page 21. In fact the same conclusion is possible in relation to the companies using design as integral but not central (also 73%).
The Innobarometer 2016 concludes (page 77):

‘Companies that approach design as their central element are more likely to increase their investment into innovation versus those that do not use design at all (36% vs. 26%).’

It is important to study the survey database in relation to the link between planned investments in innovation and the approach to design. According to table on page 83, there is a strong link between the percentage of companies that plan to conduct a type of innovation (for example goods innovation 33%) and the company approach to design as a central element, as integral but not central or used as last finish (in the example of goods innovation, the percentages are (33, 32 and 36%). This parallelism of the % on role of design other than not used or not systematically used occurs with the other types of innovation.
### Fourth conclusion

The strong link between the positive (other than not systematically used or not used) approach to design and the intention to conduct each type of innovation, invites to study the apparently short distance between design efforts and innovation (implementation of new or improved goods, services, processes, marketing or organizational activities).
6- The links derived from crossing the answers of the question on ‘the role of design’ with the other survey answers

Very important conclusions can be drawn from crossing the answers on the question to the role of design with the other answers of the company to the survey.

The answers to the role of design are (page 97):

The Innobarometer 2016 conducts the following links with other answers (page 99):
We show two examples of important conclusions not identified on the Innobarometer 2016 and that should be the object of our study, among other conclusions we will extract from a detailed and broader data correlation.
Fifth conclusion: The strong link between investment in innovation and the step on the design ladder.

42% of the companies not using design invest 0% of turnover in innovation. While, for companies on the fourth step of the design ladder (design as a central element in the company’s strategy) only 8% do not invest in innovation.

Sixth conclusion: The strong link between design and innovations.

56% of the companies not using design did not implement a single innovation. While, for companies on the fourth step of the design ladder (design as a central element in the company’s strategy) only 6% did not implement at least one innovation.

7- The link between the use of advanced technologies and design

The Innobarometer 2016 highlights (page 106) that:

‘Companies that say design is the central element of their strategy are more likely to have used and plan to use these technologies in the future compared to those that do not use design (38% vs. 14%).’
It is important to study the link between use of advanced technologies and the four steps of design ladder in order to observe the situation in the EU of the technology push model of innovation and the situation of the vision of innovation as a complex and systemic phenomenon. The above table allows reaching a seventh conclusion and opens the door to the need to further study this important link.

**Seventh conclusion: The link between the use of advanced technologies and design.**

Only 14% of companies not using design use advanced technologies, while 79% of companies not using design do not use advanced technologies.
Relevant reports about the economic value of design, other than EC Innobarometer and Design Ladder (DDC).

The design economy report – Design Council UK, 2015

The research measures the value of design using gross value added (GVA), and statistics relating to productivity, turnover, employment and exports of goods and services. The report includes a summary of how design contributes to the financial performance of businesses, the UK regions and areas where design makes a substantial contribution to local economies, as well as design workforce demographics.


The role and value of design working paper: Measuring and defining design – TBR 2015

This working paper provides detailed information about the research approach for 'The design economy report' carried out by the Design Council.


Measuring Design and its Role in Innovation (OECD-STI Working Paper 2015/01)

This working paper sums up the main findings of an OECD project aiming to provide an evidence basis for focusing efforts to improve the measurement of technological and non-technological forms of business innovation, with particular focus on the role of design.


The dmi:Design Value Index 2015

DMI and Motiv Strategies, funded by Microsoft, began analyzing the performance of US companies committed to design as an integral part of their business strategy. Completed in 2013 the dmi:Design Value Index tracked the value of publicly held companies that met specific design management criteria, and monitored the impact of their investments in design on stock value over a ten-year period, relative to the overall S&P Index.

http://www.dmi.org/?page=2015DVlandOTW
Next steps for the BEDA Cluster Measuring Design Value as a key factor of successful innovation

The BEDA Cluster Measuring Design Value will continue its work focusing on the following actions:

1- Defining a set of algorithms to deduct the economic contribution of design to the creation of economic value of the firm from the Innobarometer data and to apply them to Innobarometer 2017 database.

2- Defining a set of algorithms to deduct the macroeconomic contribution of design from the Innobarometer data and to apply them to Innobarometer 2017 database.

3- Providing clear and simple communication and training tools to companies to understand and monitor the economic contribution of design and to use this information to review business policy.

4- Providing clear and simple communication and training tools to administrations to understand and monitor the macroeconomic contribution of design and to use this information to define public policies.

5- Dissemination actions towards the specific target groups mainly European Commission, Eurostat, Policy Makers at Member States and the design and innovation sector.