

BEDA

The Bureau of European
Design Associations

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

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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.

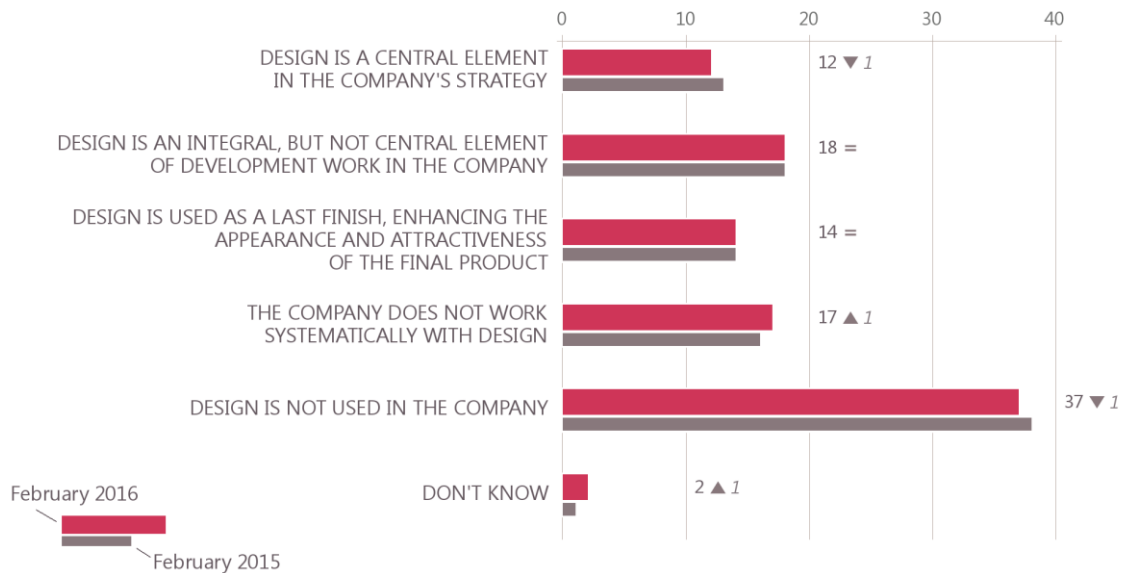
The Flash Report can be found at:

<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:

Q1 Which of the following statements best describes the activities of your company with regard to design?
(% - EU)



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 is 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 were 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:

<http://ec.europa.eu/COMFrontOffice/publicopinion/index.cfm/Survey/getSurveyDetail/instruments/FLASH/surveyKy/2064>.

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.

Use of design in Danish companies in 2016

The figure shows Danish companies' use of design - from the non-systematic use to the advanced use of design as a central and controlling element in the business and its strategy.

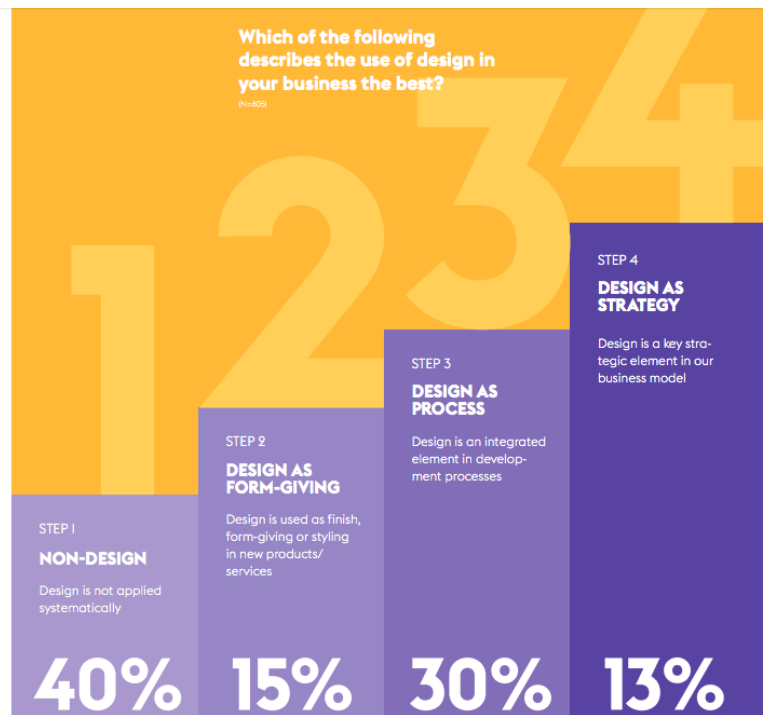
58 pct. of Danish companies indicate that they use design.

When you look at the companies that use design as an element in their processes and strategy, that group consists of **43 pct.** in Denmark.

13 pct. are using design strategically, as design methods and design thinking contributes to the company's business development and strategy.

30 pct. are using design as a tool in the company's work processes, as an integrated element, for example when developing and optimizing workflows, production processes and other types of flows.

40 pct. do not use design systematically.



Parameters and links reviewed

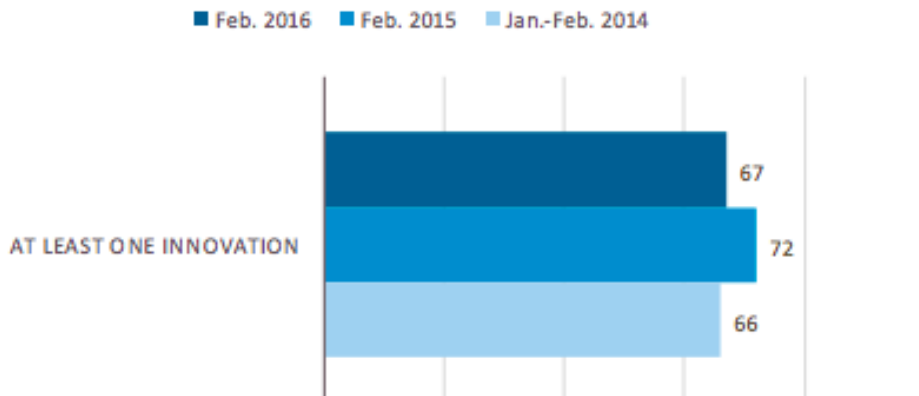
We here below describe a first analysis of the Innobarometer 2016 report aimed to extract some hidden conclusions on the role of design in innovation and earnings, as a preliminary example of the rich data that it is possible to extract from the reviewed survey for Innobarometer, aiming to better understand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

Q2A Has your company introduced any of the following types of innovation since January 2013?
 (% - EU)



2- Type of Innovation

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

Q2 Has your company introduced any of the following types of innovation since January 2013?
 (% - YES)

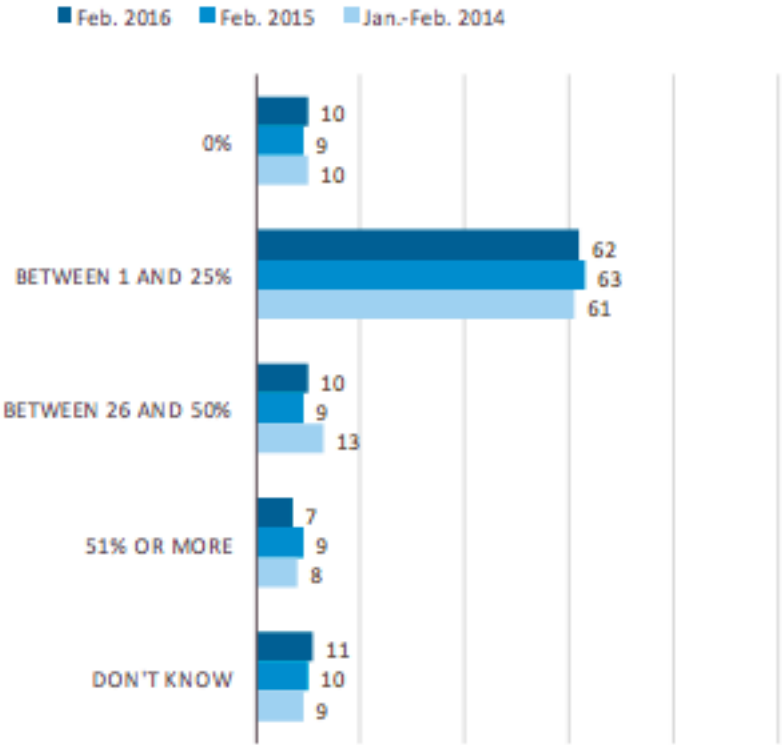


So, 40% of companies conducted at least one product innovation; 40 % conducted at least one service innovation; 30% conducted at least one process innovation; 33% conducted at least one marketing innovation and 34% conducted at least one organizational innovation.

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.

Q3 Approximately what percentage of your company's turnover in 2015 was due to innovative goods or services that have been introduced since January 2013? (% - EU)



Source: Companies that have introduced innovative goods or services since January 2013 (n = 7329, 56% of base)

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%)’.

Q3 Approximately what percentage of your company's turnover in 2015 was due to innovative goods or services that have been introduced since January 2013?
(% - EU)

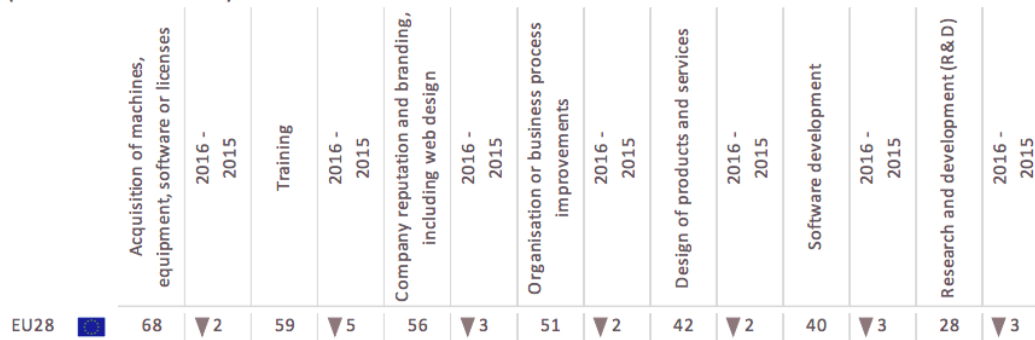
	Between 1 and 25%	26% or more
EU28	62	17
Company size		
1-9	63	16
10-49	63	20
50-249	59	15
250+	67	14
Sectors grouped (NACE)		
Manufacturing (C)	69	12
Retail (G)	68	14
Services (H/I/J/K/L/M/N/R)	57	21
Industry (D/E/F)	63	16
Company's turnover since 2013		
Risen by 5% or more	66	22
Remained approx. the same	65	14
Fallen by 5% or more	65	11
% of company's turnover in 2015 invested in innovation activities		
0%	56	12
Less than 1%	68	12
Between 1 and 5%	73	15
Between 6 and 10%	66	22
11% or more	42	42

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).

Q4B Since January 2013, what percentage of its total turnover has your company invested in each of the following activities?

(% - SOME INVESTMENT)



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%.

Q4B Since January 2013, what percentage of its total turnover has your company invested in each of the following activities?

SOME INVESTMENT (% - EU)

	Acquisition of machines, equipment, software or licenses	Training	Company reputation and branding, including web design	Organisation or business process improvements	Design of products and services	Software development	Research and development (R&D)
EU28	68	59	56	51	42	40	28
Company size							
1-9	66	56	54	48	40	38	26
10-49	80	80	71	68	53	51	38
50-249	80	78	70	69	60	60	41
250+	87	79	79	71	56	55	56
Sectors grouped (NACE)							
Manufacturing (C)	64	53	51	53	49	32	37
Retail (G)	62	52	54	47	39	40	25
Services (H/I/J/K/L/M/N/R)	71	64	60	56	47	45	31
Industry (D/E/F)	74	67	55	49	33	33	24
Company's turnover since 2013							
Risen by 5% or more	81	69	69	64	54	49	36
Remained approx. the same	68	61	55	48	38	40	27
Fallen by 5% or more	53	47	43	43	35	32	23
Innovation							
At least one	74	66	66	63	54	47	36
None	55	46	36	28	20	26	12
Goods or services innovators	75	66	66	64	56	48	38
Other innovators	72	64	66	57	41	42	24
Non-innovators	55	46	36	28	20	26	12

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%).

Q2b Has your company introduced any of the following types of innovation since January 2013?

	Goods or services innovators	Other innovators	Non-innovators
EU28	56	11	33
Company size			
1-9	55	10	35
10-49	62	12	26
50-249	70	14	16
250+	76	20	4
Sectors grouped (NACE)			
Manufacturing (C)	60	8	32
Retail (G)	59	11	30
Services (H/I/J/K/L/M/N/R)	55	10	35
Industry (D/E/F)	49	12	39
Company age			
Before 2010	54	11	35
Between 2010 and 2015	65	10	25
After 2015	55	5	40
Company's turnover in 2015			
Up to 100 000 euros	48	9	43
More than 100 000 to 500 000 euros	56	11	33
More than 500 000 to 2 mil. euros	61	11	28
More than 2 mil. euros	63	10	27
Company's turnover since 2013			
Risen by 5% or more	65	10	25
Remained approx. the same	53	11	36
Fallen by 5% or more	50	10	40
Company's approach to design			
Central element	73	9	18
Integral but not central	73	10	17
Used as last finish	64	15	21
Not systematically used	52	12	36
Not used	42	8	50

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.

Q9 What will be the focus of your planned investment in innovation in the next 12 months? (MULTIPLE ANSWERS POSSIBLE)

	Goods	Services	Processes (e.g. production processes or distribution methods)	Marketing strategies (e.g. packaging, product promotion or placement or pricing strategies)	Organisational methods
EU28	33	44	26	40	23
Company size					
1-9	34	44	24	40	22
10-49	27	43	34	41	26
50-249	34	39	46	38	32
250+	35	60	34	37	32
Sectors grouped (NACE)					
Manufacturing (C)	43	27	40	31	15
Retail (G)	39	37	22	45	23
Services (H/I/J/K/L/M/N/R)	26	53	27	41	25
Industry (D/E/F)	35	47	23	30	23
Company age					
Before 2010	33	43	26	40	22
Between 2010 and 2015	35	48	26	41	26
After 2015	40	45	12	49	30
Company's turnover in 2015					
Up to 100 000 euros	30	46	24	38	22
More than 100 000 to 500 000 euros	33	47	27	44	20
More than 500 000 to 2 mil. euros	36	43	26	39	26
More than 2 mil. euros	38	41	38	40	33
Company's turnover since 2013					
Risen by 5% or more	33	46	30	44	25
Remained approx. the same	31	44	27	36	23
Fallen by 5% or more	35	39	19	40	20
Company's approach to design					
Central element	33	43	24	48	22
Integral but not central	32	44	29	45	24
Used as last finish	36	44	24	47	22
Not systematically used	29	43	25	32	25
Not used	34	46	26	30	22

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):

Q1 Which of the following statements best describes the activities of your company with regard to design? (%)



The Innobarometer 2016 conducts the following links with other answers (page 99):

Q1 Which of the following statements best describes the activities of your company with regard to design?
(% - EU)

	Design is a central element in the company's strategy	Design is an integral, but not central element of development work in the company	Design is used as a last finish, enhancing the appearance and attractiveness of the final product	The company does not work systematically with design	Design is not used in the company
EU28	12	18	14	17	37
Company size					
1-9	12	17	14	16	39
10-49	15	21	15	19	29
50-249	11	30	17	13	26
250+	34	21	6	20	18
Sectors grouped (NACE)					
Manufacturing (C)	13	19	16	15	35
Retail (G)	12	18	15	18	36
Services (H/I/J/K/L/M/N/R)	14	19	15	15	36
Industry (D/E/F)	6	15	12	18	47
Company age					
Before 2010	12	17	14	17	39
Between 2010 and 2015	13	21	17	17	31
After 2015	16	18	19	6	35
Company's turnover since 2013					
Risen by 5% or more	15	20	18	17	29
Remained approx. the same	11	17	13	18	40
Fallen by 5% or more	10	17	13	17	42
Innovation					
At least one	15	23	17	16	28
None	6	9	9	18	56
Goods or services innovators	16	23	17	15	28
Other innovators	11	18	21	19	30
Non-innovators	6	9	9	18	56
% of company's turnover in 2015 invested in innovation activities					
0%	8	19	12	17	42
Less than 1%	13	21	21	18	26
Between 1 and 5%	17	21	19	17	25
Between 6 and 10%	17	31	23	10	18
11% or more	30	25	15	10	19

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%)'.

Q11T - Have you used any of the following technologies or do you plan to use any of the following technologies in the next 12 months?

	Has used and plans to use advanced technologies	Has used but does not plan to use advanced technologies	Has not used but plans to use advanced technologies	Has not used and does not plan to use advanced technologies
EU28	26	7	6	61
Company's approach to design				
Central element	38	12	12	38
Integral but not central	33	7	10	50
Used as last finish	35	8	7	50
Not systematically used	25	7	1	67
Not used	14	4	3	79
Innovation				
At least one	32	7	8	53
None	13	6	2	79
Goods or services innovators	33	7	9	51
Other innovators	28	7	1	64
Non-innovators	13	6	2	79
Planned % of investment dedicated to innovation in the next 12 months				
Increase	51	4	6	39
Reduce	33	13	2	52
Keep % unchanged	27	7	12	54
No plan to invest	14	14	2	70

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.

<http://www.designcouncil.org.uk/resources/report/design-economy-report>

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.

<http://www.designcouncil.org.uk/sites/default/files/asset/document/value-design.pdf>

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.

http://www.oecd-ilibrary.org/science-and-technology/measuring-design-and-its-role-in-innovation_5js7p6lj6zq6-en;jsessionid=51urqn0omqm4b.x-oecd-live-02

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.

BEDA Cluster Measuring Design Value. November 2017.