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INDUSTRIA ARTIGIANATO E AGRICOLTURA
DI TORINO

Design-related economy in Piedmont

Final report

In collaboration with: Torino Incontra Centro Congressi

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Premise

In Turin and in Piedmont design has always felt at home, and this not only in the car sector. On this territory countless are the examples in various industrial fields, one for all, the fountain pen Aurora 88. Here insights have developed and then turned into mass production and launched all over the world.

On occasion of the year of Turin as World Design Capital, the Torino Chamber of Commerce has intended to give a contribution to the knowledge of the territory by the realization of a survey aimed at mapping the Piedmont design-related economy. The survey looks into the entrepreneurial context dealing with production and use of design.

In Piedmont, in fact, many are the enterprises that have made of the design system and culture their core business. However it must be said that design, regardless of the sector of research and application, always represents a strategic resource to enhance the success of an enterprise.Design makes it possible to differentiate your products and to have a more efficacious competitive strategy. The survey, carried out also through the realization of a workshop with experts, has singled out a significant Piedmont world of enterprises design-related, of

which have been analysed the economical characteristics, strengths and opportunities. This analysis has confirmed, also in terms of numbers, the Turin and Piedmont vocation for design.

Finally, to complete the portrait, it has been carried out, together with the survey, the Catalogue of Piedmont enterprises specialized in the offer of design. The Catalogue, available on line and regularly integrated, will be a valid information tool to raise the knowledge of Turin and of our region in Italy and abroad as a territory of creativity and know-how, characterized by a significant cluster of enterprises design-related. A territory that, nowadays, also reveals the first features of the so-called "design driven innovation": a radical innovation where technology and design cooperate and thus transform not only the aesthetic and functional characteristics of objects and services but also their meaning and identity.

Alessandro Barberis

President of the Torino Chamber of Commerce

Report profile and reading guide

The study of which final results are hereby reported is a "mapping" of design-related economy in Piedmont. This mapping allowed for the creation of two different, complementary deliverables:

- A research on the dimensional aspect and main characteristics of *design-related* economy in Piedmont, illustrated in this final report;
- A Register of *design-related* businesses inside the Region, constituting a self-standing product, though logically connected to this report.

Before defining how the report is articulated, it is essential to highlight – through some definitions – what the content of the analyzed phenomenon is. As already mentioned, the report maps the profile of design-related economy in Piedmont. This term particularly refers to the entrepreneurial basis residing in the regional territory, which produces or uses design contents (for end users of other companies involved in the process), produced internally or by third parties (other companies), as an element of competitive differentiation and as an instrument of products financial valorization. Similarly, the term design-related companies refers to companies which

may be directly connected to the field of strictly meant design, and which include in their products or services significant parts dedicated to design, at different levels.

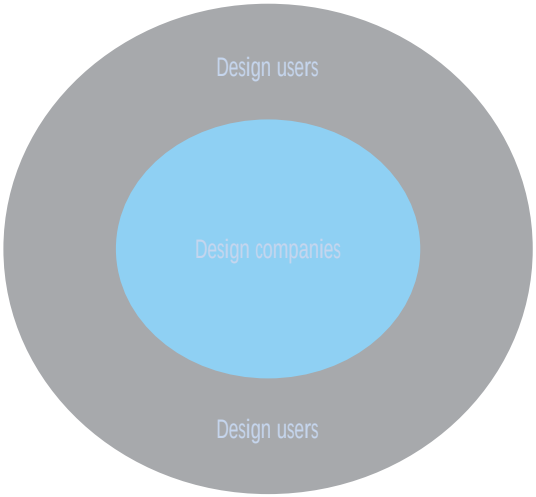
Here are some clarifications for a better understanding of this definition. The term *design-related* economy qualifies the "offer": this report does not include information on demand, neither from consumers nor from other companies. On the contrary, it illustrates the profile of the company system producing and / or employing design contents to increase the financial value of products issued on the market.

Moreover, "design-related" economy refers to a wider aggregation with respect to the mere field of design. While this last one represents all the companies issuing design contents incorporated in their production, what is meant in this report is a wider concept, including, for instance, companies which merely use design contents, purchased from other companies, and incorporate them in their production, only keeping their internal manufacturing skills and completely entrusting to third parties the acquisition of design skills (as well as reactivity to design). An example for all: in the Verbano-Cusio-Ossola steel district – among the provinces of Novara, Verbania, and Vercelli – the basic manufacturing competence consists in steel processing. This finds an application in faucet and kitchenware manufacturing. These sectors, which also represent two of the main production sectors in Piedmont, include companies who have deeply understood the importance of design for product uniqueness and market placement; as a consequence, they have internalized design competences and can be more suitably defined as "design companies" (Alessi, just to mention an international case, but also Ritmonio, a faucet manufacturer which turned into a design company). Besides these examples, both in kitchenware and faucet manufacturing, there are many companies cautiously experimenting the

use of design on their products; as a consequence, they are still characterized by limited (or null) design "absorption skills", and have not internalized this kind of competence yet. When they need it, they purchase design services from the exterior. This restricts the impact design has on product valorization, but surely qualifies these companies as business subjects which are "getting into" the world of design, which, though it may be wrong, is currently used as an element outside their core competence, mainly concerning manufacture processes. These "design users" are involved in the present report as well, as illustrated in Fig. 1, so the phenomenon, considered as a whole, represented by the two concentric circles, is defined with respect to the different forms of design-linked economy. All companies which do not use design are located outside the circles.

Figure 1

Design-related economy



Design-related economy includes, to sum up:

- Companies which incorporate design contents and produce "objects" directly commercialized for end users (e.g. already mentioned Alessi for kitchenware);
- Companies providing other companies with design services (e.g. a small graphic or design agency, but also the extreme opposite: Pininfarina or Italdesign);
- Companies manufacturing products with a high design content, which they sell to other companies taking part in the same production process (e.g. in the textile field, fabric manufacturers selling their products to clothing production companies).

Whereas the second and third cases can be included in the more generic category of B2B (business-to-business), the first is included in B2C (business-to-consumer).

This report is divided into six chapters. The first provides elements of mainly quantitative type, on the dimensions and profile of design-related economy in Piedmont. The survey has detected about 600 companies (precisely 623) belonging to this domain: this figure is not so relevant if compared to the overall entrepreneurial basis in Piedmont (nearly 0.1% of total regional businesses, which are estimated to generate a production equal to 0.8% of regional GDP[1]), but it becomes significant for what it represents. Chapter 2 is dedicated to the role of design exerts inside these companies in terms of impact on product life cycle and valorization mechanisms for sold goods and services. Chapter 3 is dedicated to distribution mechanisms of design-related products and services, followed by an overview on present problems and opportunities for design-related economy and related companies (Chapter 4). Chapter 5 tackles the theme

Note

1) Regional GDP was defined on the basis of data related to 2005, at current prices

of middle and long-term sustainability of design-related economy, analyzing the mechanisms and subjects involved in the basic reproduction of design competences, particularly training institutes and universities, as well as specialized scientific centers and research bodies. The report ends referring to some interpretation categories explaining the analyzed phenomenon, particularly: the relationship between design and innovation, considered as a key element to enlighten design-based financial valorization processes; secondarily, the characterization of the analyzed phenomenon with reference to the territory (system-design vs. design district).

The appendix illustrates the methods with which the study has been performed, as well as a list of experts and company operators involved in the survey. Despite being a self-standing product, this report is ideally related to the "Register" of Piedmont design, completing the submitted documentation.

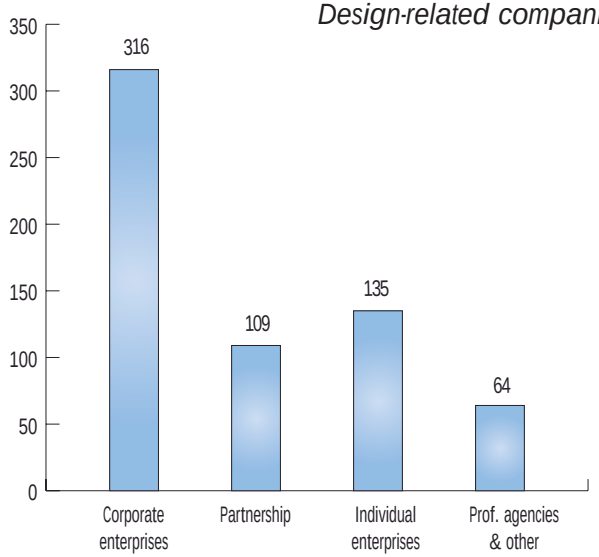
Profile of design-related economy in Piedmont

1.1 General aspects

The mapping of *design-related* economy in Piedmont has allowed for the identification of 770 companies and entrepreneurs. In this overall view, it was possible to collect information

Figure 2

Design-related companies: legal status (a. v.)



on 624 companies, both from databases and from direct interviews; of these, 416 companies have been contacted with the CATI[2] technique. The performed studies included in this report refer to these 416 known companies.

Of these, 316 are corporate enterprises (50.6%), 109 are partnerships (17.5%), 135 are individual entrepreneurs (21.6%) and 64 (equal to 10.3%) are other firms or companies having other legal statuses (fig. 2)[3]. Chart 1 sums up the general characteristics of this regional economy segment. According to estimates, it generates an aggregate income of about Euro 12 billion , with an occupational level amounting to about 50,000 employees. With respect to the analyzed universe, the detected income per employee is Euro 238,600[4].

Note

2) See Methodological Notes for further details (attachment 1)

3) The overall data remains unknown, despite what mentioned before, because of the difficulty of separating design-related economy from the rest of regional economy. Another element inducing to proceed cautiously as for the dimensions of the universe is referred to the impossibility of investigating all companies in the region. A study aimed at making an estimate of design-related economy could exploit a sample approach in order to make an estimate on the dimensions of the universe, characterising its main aspects; however, this approach is far from the objectives of this study.

4) The data related to medium income per employee seems reliable, even because in keeping with previous surveys. For instance, let us mention what was reported in the study "Design and Industrial System in Piedmont", prepared by ISMB (Istituto Superiore Mario Boella) Institute, Politecnico di Torino (2004), which presents similar estimates as regards medium income per employee (about Euro 239,.000 Euros against Euro 238,.600 euros in the presentthis survey). Relevant overall income (about Euro 6 billion Euros against 12 billion) and employee income (about 25,.000 against the present 50,.000) increases have been remarked. The difference is partly explainable by the increased number of companies on which the estimate has been made (459 companies in 2004 and about 55% more in the presentthis study). The accrued values of overall income and occupation are related as well to the increase of medium-size dimensionscompanies, in terms of employees, and among the mapped companies in the two surveys.

Chart 1

General characteristics of design-related economy in Piedmont

	Total
Nr. of companies	624
Overall income	12,032,038,899.00
Occupation	50,427
Income per employee	238,604.60

Figure 3

Design-related companies - income

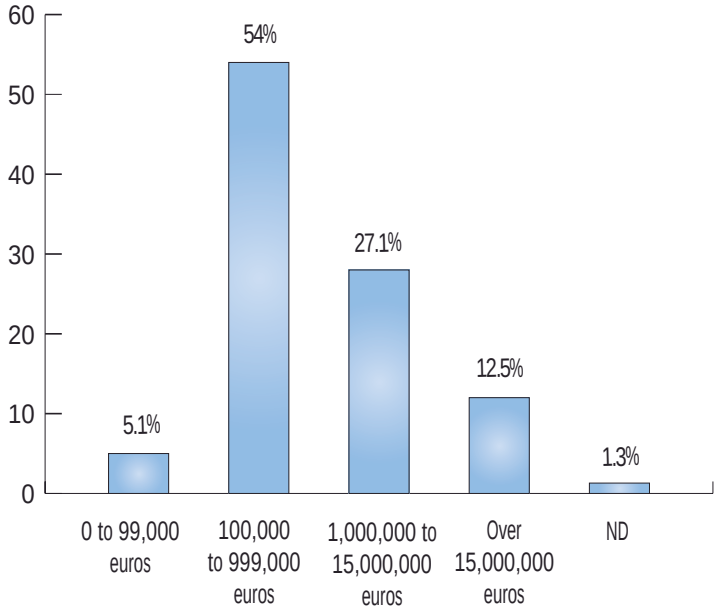
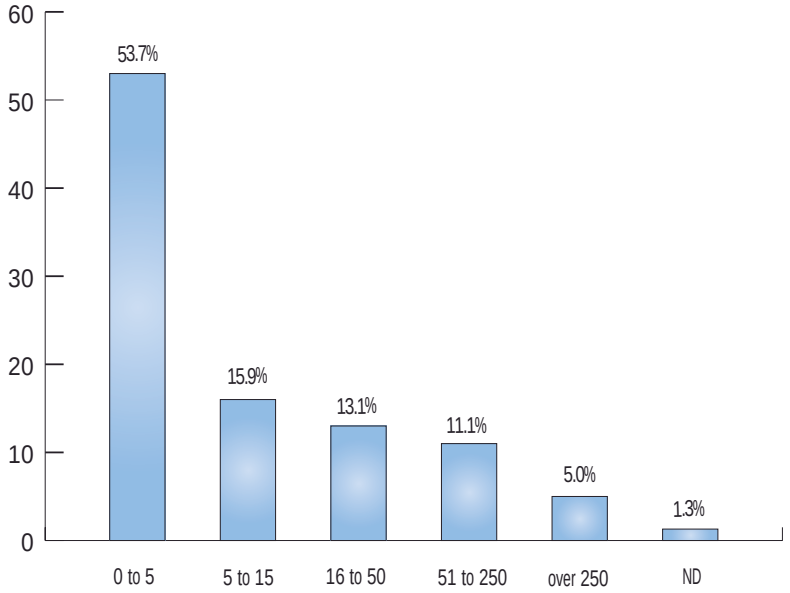


Figure 4

Design-related companies - employees



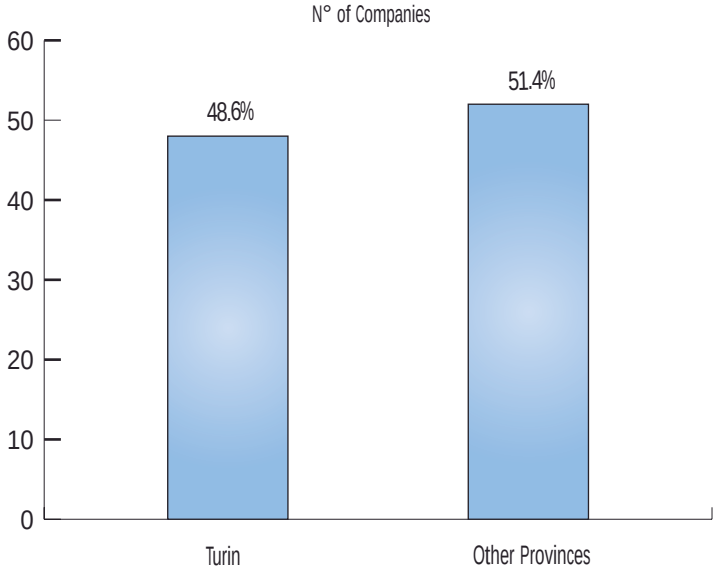
As highlighted by figures 3 and 4, the distribution of companies according to their income and number of operators stresses a remarkable heterogeneousness of the entrepreneurial tissue, with a strong predominance of micro-companies (more than 60%, both according to income and number of employees, though respective classes do not reflect the statistic definition of micro, small and medium companies).

1.2 Distribution of design-related companies on the territory

The detected data highlight the role of Turin and its province as a centre of mass (Chart 2): about half of the companies involved in the survey are based in the province of Turin (48.6% against 51.4%, Figure 5). The regional capital weighs about half of the examined *design-related* economy. The role of Turin is much more remarkable if data are analysed not in terms of number of companies, but of generated income and occupational level.

Figure 5

Design-related companies: geographic distribution (a.v.)



In the first case (income), companies based in the province of Turin produce 68,4% of the whole sector's income, while, if generated occupation is considered, the contribution of Turin-

based companies is of 61% (fig. 6 and 7; chart 2 for absolute values related to examined values)[5].

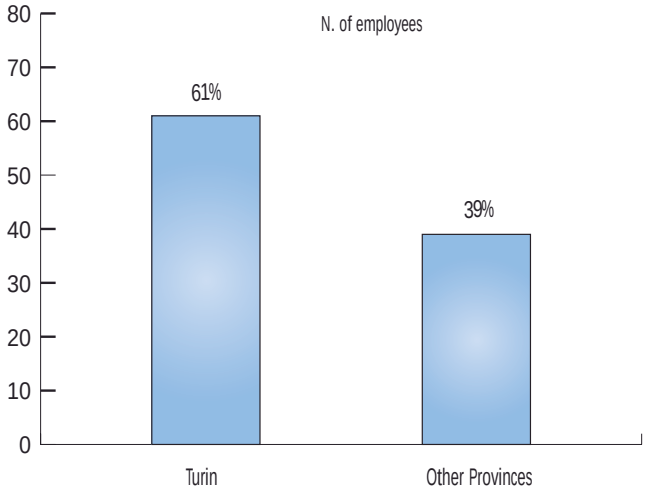
Chart 2

Characteristics of design-related economy: confrontation between Turin and other Piedmont provinces (a. v.)

	TURIN	OTHER PROVINCES
N° OF COMPANIES	303	321
OVERALL INCOME	8.224.355.233	3.807.383.666
N° EMPLOYEES	30.650	19.777
INCOME PER EMPLOYEE	268.331,33	192.533,97

Figure 6

Number of employees: geographical distribution (v.%)

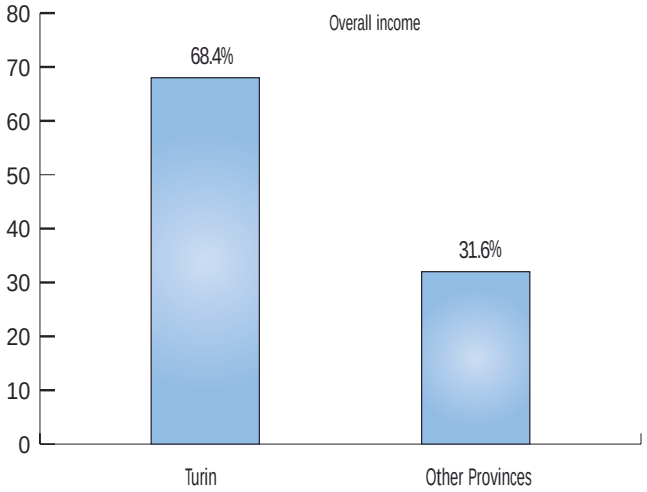


Note

5) If compared with the research carried out by Mario Boella Institute, the present study highlights a more centre-oriented trend, with respect to the generated income (about 44% in 2004 against about present 68%). However, these data are not completely comparable because of the difference between the two company samples used for the two studies.

Figure 7

Design-related companies income: geographic distribution (v.%)



This result can be easily explained if we consider that, at least for the automotive design sector, the concentration in Turin is characterised, also for historical reasons, by the presence inside the province of the most important professional design service purchaser: Gruppo Fiat[6].

1.3 Field distribution

The analysed universe has always been contacted direclty, in order to deepen those subjects related to offered design services or design employment for product valorization. With an answer rate of 66.7%, it was possible to obtain useful answers from 416 companies, more

Note

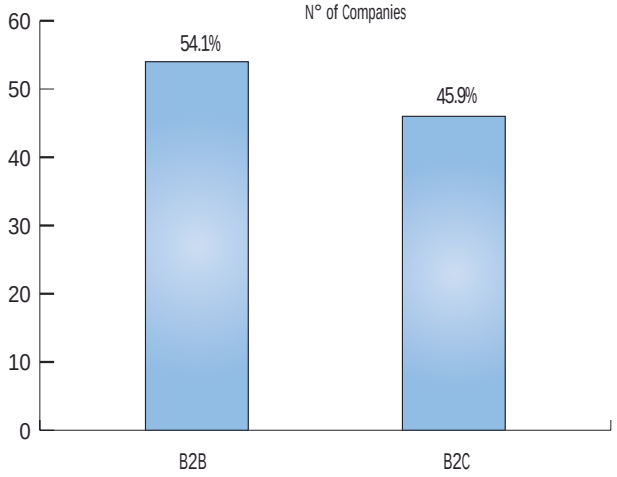
6) Fiat, with its recently re-launched Centro Stile, has been excluded from the survey for reasons related to the company's dimensions, which would have inevitably distorted the survey results.

than two thirds of the identified universe on which useful information are available. The following considerations are referred to this sample: this survey offers an insight on some characteristics of *design-related* economy in Piedmont, starting from field distribution.

A first detected element refers to the repartition of these 416 companies, contacted between B2B and B2C, This distinction is meant to characterise, in the first case, the companies selling intermediate products and internalizing design and / or service provider elements, offering design services to other companies, both manufacturers and others. In the second case, companies selling to end users goods (and services) which are *design-intensive*, or with an explicit design content. 54.1%, corresponding to 225 companies, belongs to the B2B category, while 45.9% belongs to B2C[7]: the two categories are essentially equally distributed (fig 8).

Figure 8

Design-related companies: market relationship modality (v.a.)



Note

7) Nine companies, corresponding to 2.,1%, could not be included in the previously indicated categories.

In spite of this equal distribution, B2C companies generate a higher income (almost the triple) and develop an occupational level corresponding to 4.5 times the one generated by B2B companies (figures 9 and 10). This can be explained by mentioning how B2B is characterized by the presence of a great number of small professional agencies providing design services, as well as greater automotive *service providers*: for opposite reasons, they develop a more limited occupational level (small professional agencies are micro-companies with few employees, while greater providers are strongly *capital intensive*). As for income level, small professional agencies "lower" the income generated by B2B category; in other words, B2C represents many medium-size professional agencies with, which are more than professional agencies "crowding" B2B and remarkably lower their overall income.

Figure 9

Design-related overall income: relationship modality (a. v.)

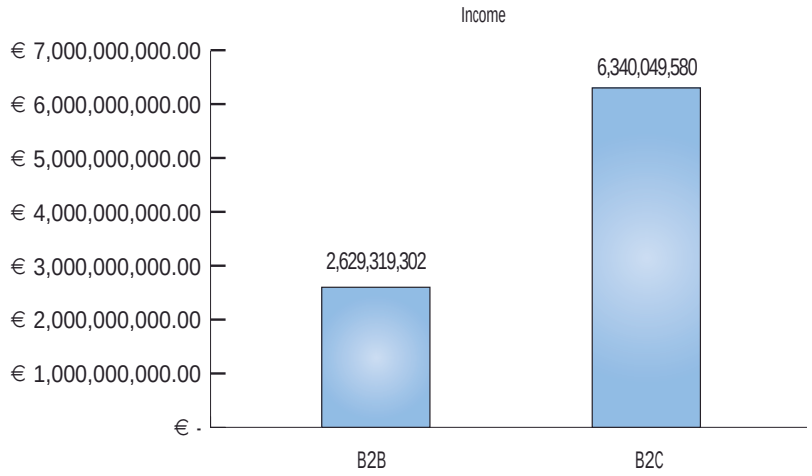


Figure 10

Design-related companies - number of employees according to market relationship modality (a. v.)

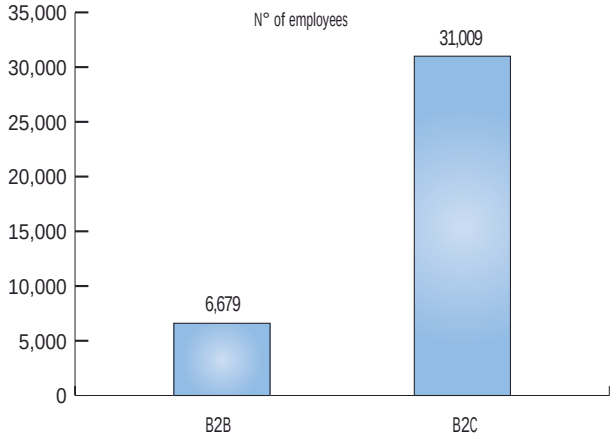
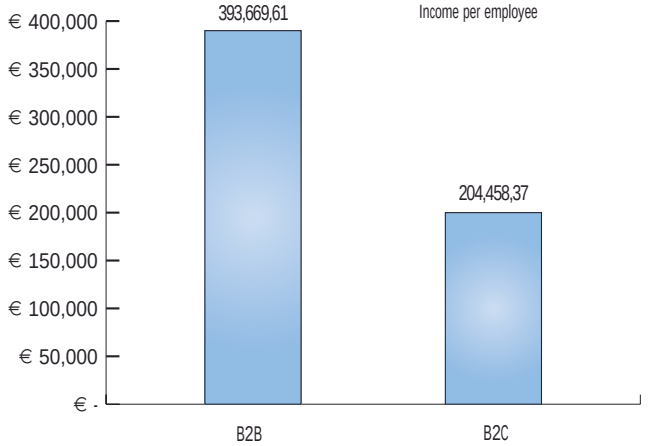


Figure 11

Medium income per employee in design-related companies: market relationship modality (a. v.)



Consequently, it is not a surprise that there is a more remarkable gap in the number of employees between B2B and B2C. This gap is greater than the one related to the number of employees: the medium income per employee is significantly higher - almost double - in the case of B2B (fig. 11).

As a consequence, briefly, B2B companies are characterized by a reduced medium dimension with respect to B2C, both in terms of income and, above all, in terms of number of employees; this is clearly shown by fig. 12 and 13, where it is highlighted how, in B2B, 62.5% of companies does not exceed a one million Euros yearly income, while B2C has 43.4%. These data are even more remarkable if the number of employees is considered: 73.1% - a little below the three fourth of the analysed companies – does not exceed 15 employees, against the 58.9% in the case of B2C. On the contrary, in B2C, the companies having more than 250 employees represent 9.2% in the distribution, against 2.7% in the case of B2B.

Figure 12

Design-related companies income: relationship modality (v.%)

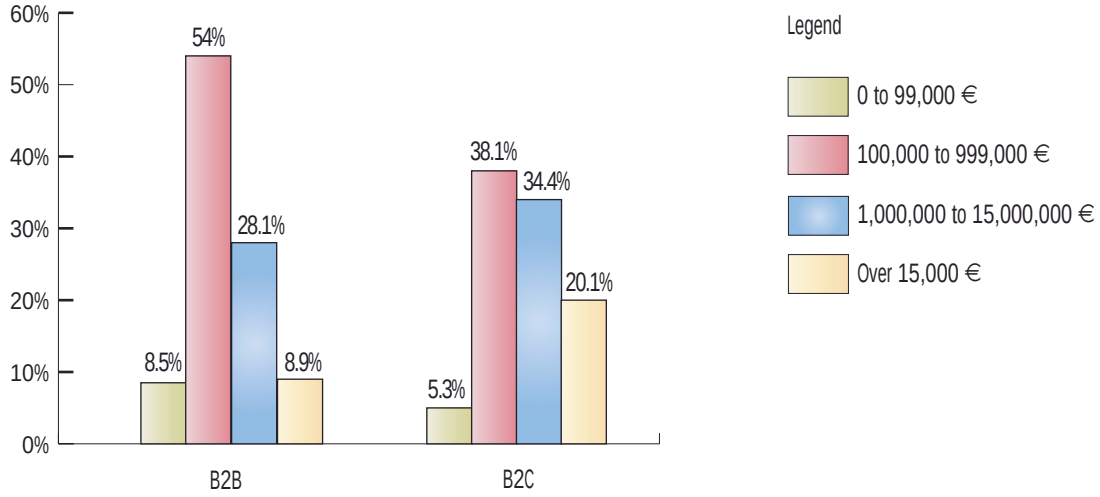
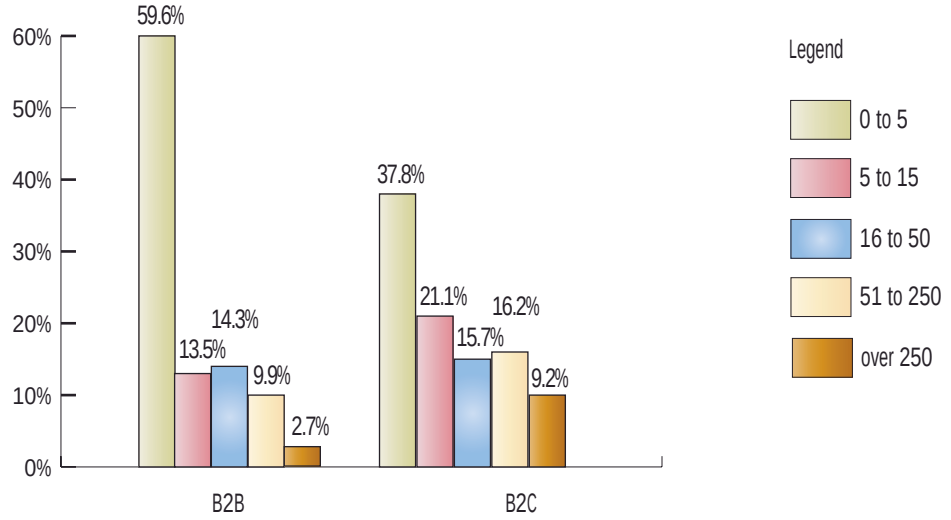


Figure 13

Design-related companies employee distribution: market typology (v.%)



As a consequence, these data highlight a medium unit dimension which is significantly more reduced in the case of B2B.

Besides market typologies (B2B vs. B2C), an important point of view from which *design-related* economy can be observed is its articulation according to design application fields. In our survey, 6 main application fields have been examined, the last of which constitutes an aggregation of emerging sectors:

- industrial design
- automotive design
- graphic design and communication
- interior design

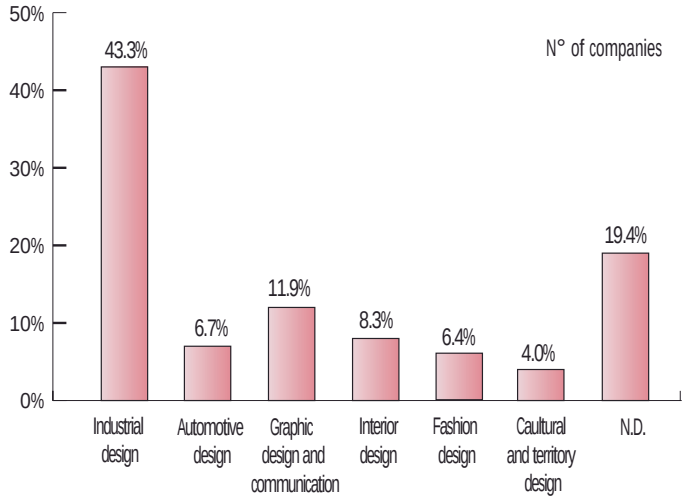
- fashion design
- cultural and territory design.

This last one, as already remarked, represents a design application field aggregation; these fields are totally new and are establishing themselves in recent times, being already represented in Piedmont by some companies. Particularly, the survey has identified as more interesting the following application fields, which share cultural and territory interest in different ways and at different levels: food design, sustainable design, cultural and environmental heritage valorisation.

Figures 14 and 15 illustrate how surveyed *design-related* companies are divided according to design application fields[8].

Figure 14

Design-related companies: application field (v.%)



Note

8) The high percentage of companies for which information on design application fields are not available is highlighted. This occurs because a part of the directly interviewed companies did not provide this information, which could not be obtained otherwise, that is through databases or the Internet. As a consequence, this results as "not available" (N.D.)

Figure 15

Design-related companies income: design application fields (v.%)

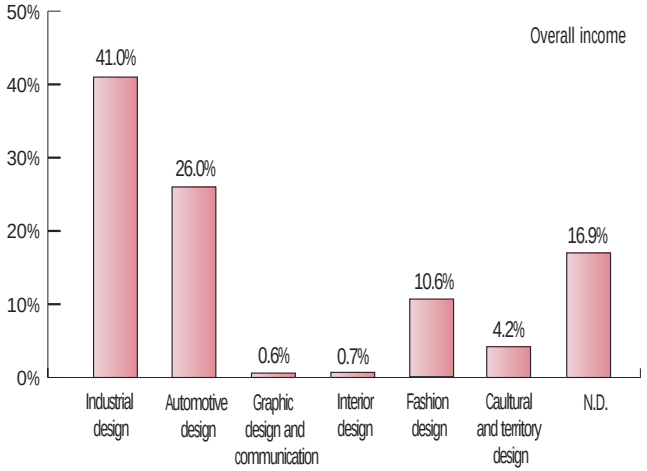
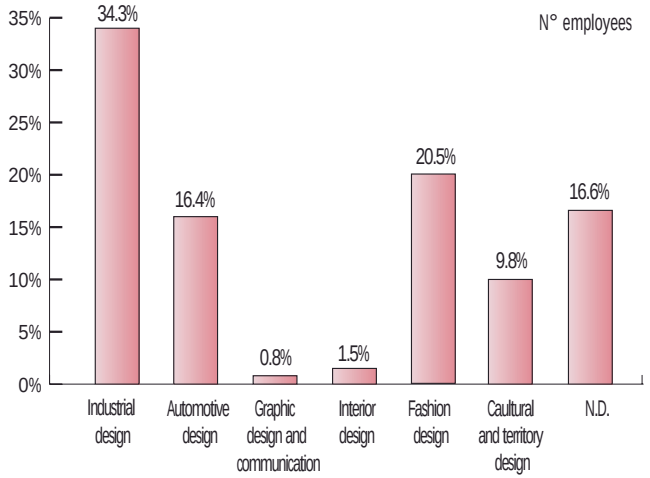


Figure 16

Number of employees in design-related companies: design application fields (v.%)



The two most important sectors are industrial design and automotive design. The first gathers 43.3% of surveyed companies, 41% of the generated income and an occupation percentage of 34,3% of employees. On the other hand, automotive sector does not weigh much, as it is easy to imagine, in terms of number of companies, but has a higher specific weight in terms of income (26%) and number of employees (16.4%).

Actually, what is the offer lying under the six mentioned labels? This research allows to deepen this subject, of which a brief summary follows.

As for industrial design (fig. 17), the gadget compartment prevails, with 21.2% of companies, followed by jewellery, which has its excellence centre in Valenza Po,

Figure 17

Industrial design, field articulation (multiple choice; v.%)

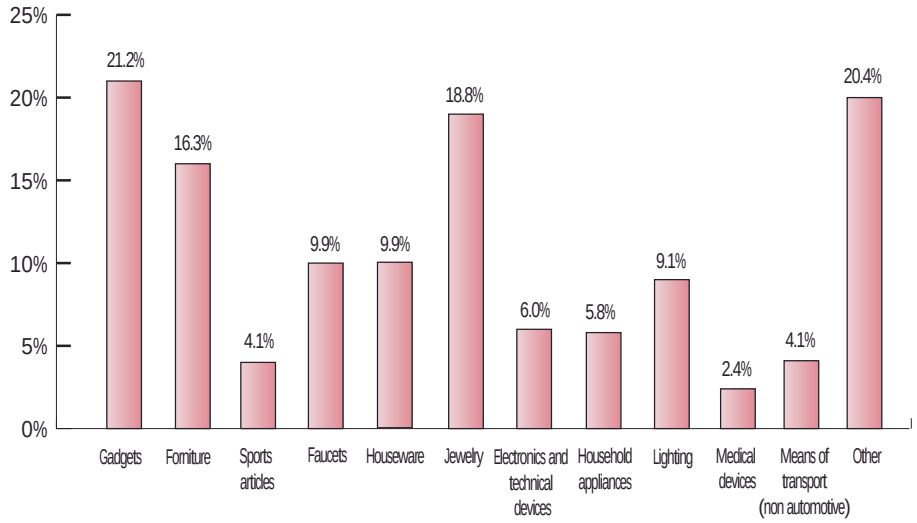
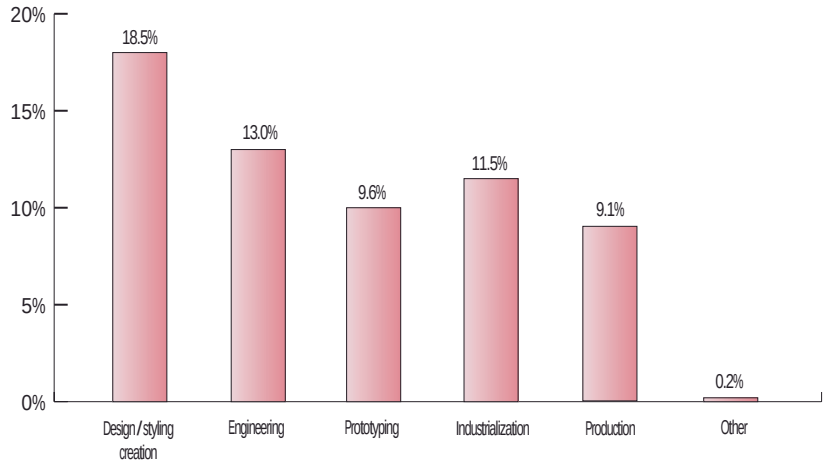


Figure 18

Industrial design, field articulation (multiple choice; v.%)



with its jewellery industry district. Automotive design (fig. 18) is not characterized by a diversified location of field companies on the different stages of "new automotive product" life cycle. The majority of companies focus on vehicles design and styling and, afterwards, on engineering. The other stages see a constantly decreasing design application rate (though the main companies, such as Pininfarina, can offer services all along the cycle).

As for graphic design (fig. 19), where response rates have been particularly low, the different areas - from corporate identity to web graphic layout editing – are essentially aligned; the same is valid for interior design (fig. 20), three sector specialities on four – house, furniture and public environment - are on the same level in terms of number of companies acknowledging their belonging to it.

As for the fashion design field (fig. 21), a remarkable fragmentation of the number of companies is taking place, excluding particular territorial characterizations (except for accessory and fabric production), while in design applied

to cultural and environmental valorisation (fig. 22), the organisation of events and exhibitions emerges as the application field having the higher entrepreneurial investment rate. Other applications are still at a lower level, such as enogastronomy, cultural heritage, urban design, tourism etc.

Figure 19

Graphic design and communication, filed articulation (multiple choice; v.%)

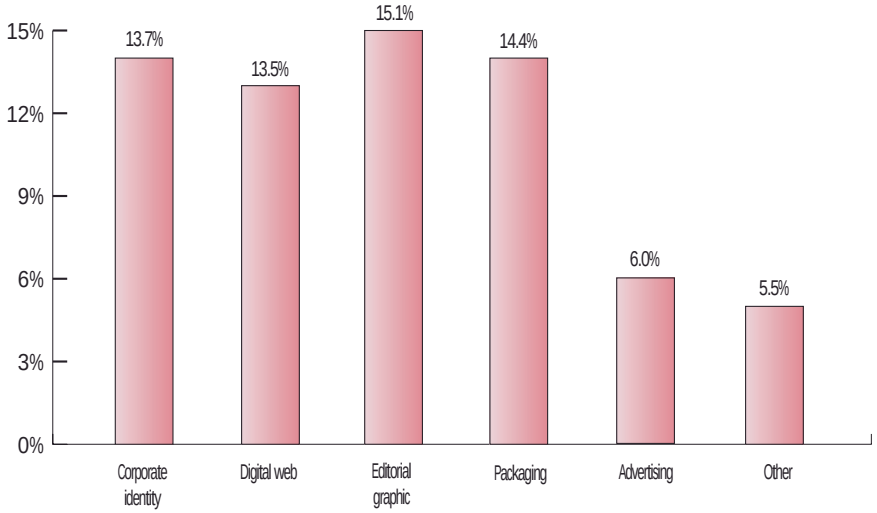


Figure 20

Interior design, field articulation (multiple choice; v.%)

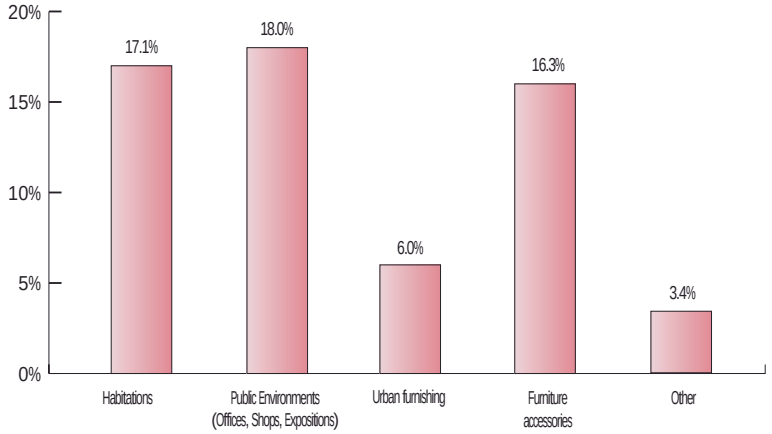


Figure 21

Fashion design, field articulation (multiple choice; v.%)

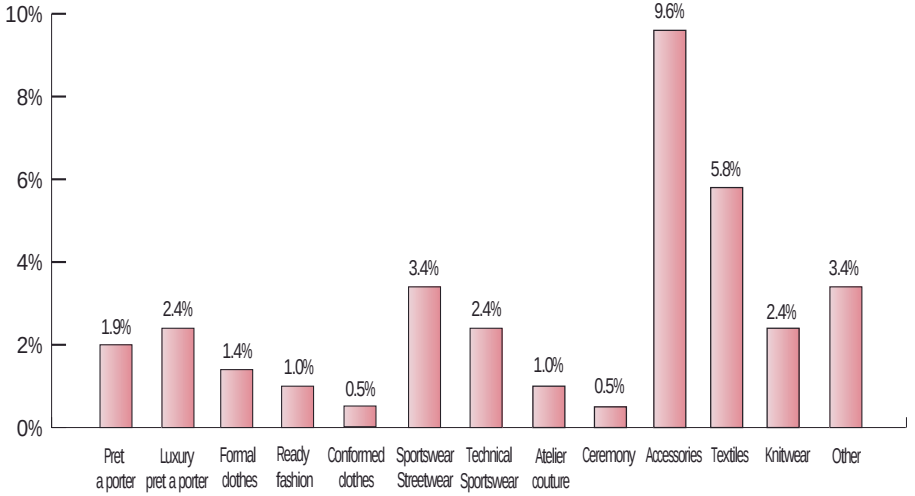
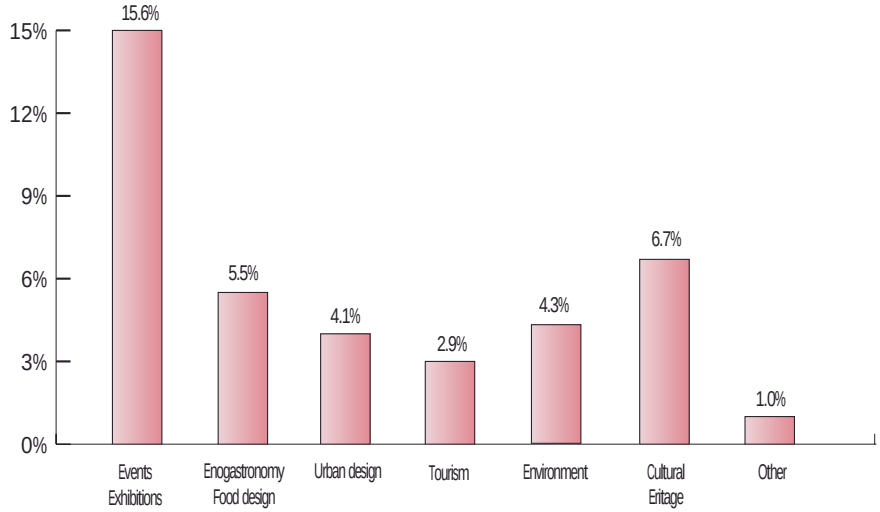


Figure 22

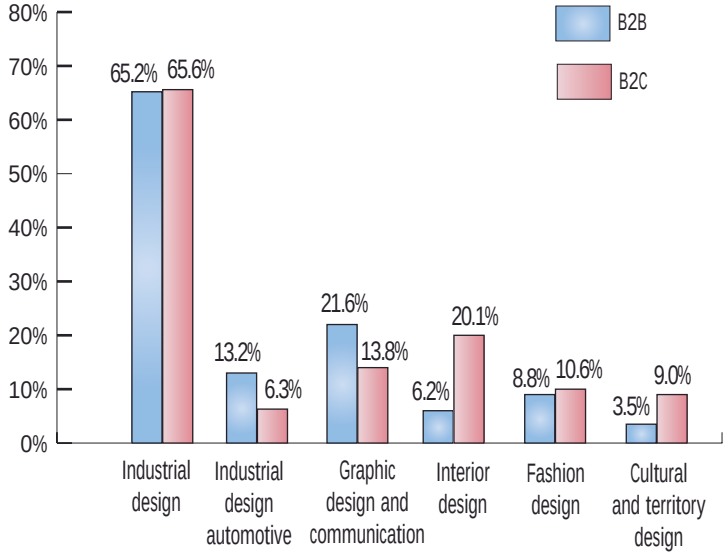
Cultural and territorial design, field articulation (multiple choice; v.%)



Other characteristics deserving to be highlighted in the field of *design-related* companies regard opposite aspects in the way these companies tackle the market (B2B vs B2C; fig. 23).

Figure 23

Field articulation of design-related companies: market relationship modality (multiple choice; v.%)



Except for industrial design, where the two modalities are equal, different patterns are registered. Automotive design and graphic design see a predominance of B2B; on the other hand, the other three application fields (interior design, fashion design, culture and territory) are characterised by a variable prevalence of companies characterized by a direct relationship with customers on outlet markets (B2C).

Figure 24

Field articulation of design-related companies: number of employees (multiple choice; v.%)

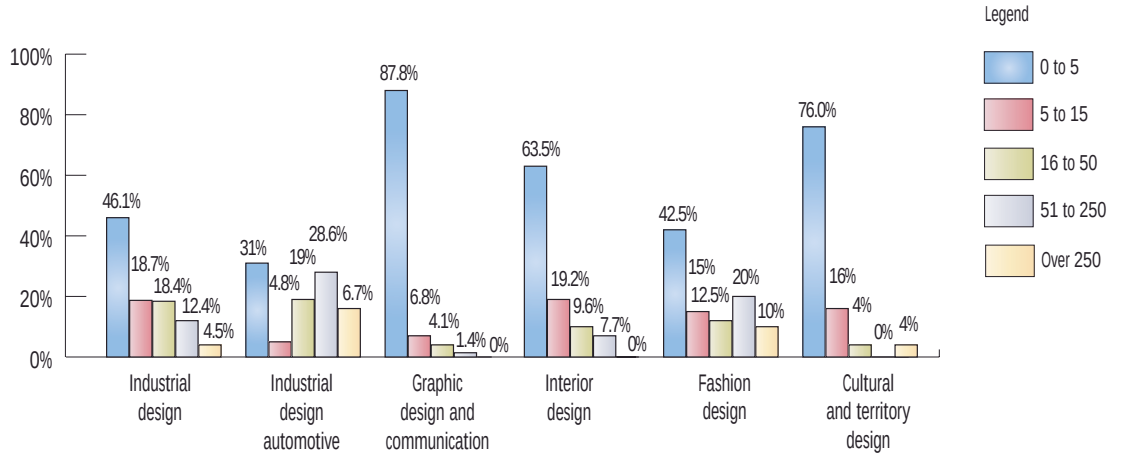
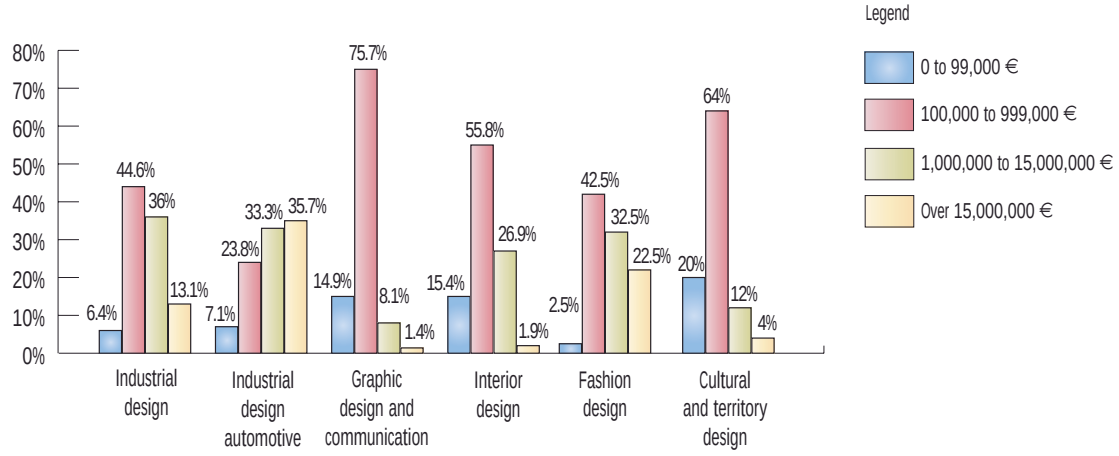


Figure 25

Field articulation of design-related companies: income (multiple choice; v.%)



Another interesting element is the relationship between field specialization and company dimensions (fig. 24 and 25). When beginning to examine the number of employees, a quick glance at fig. 24 makes the terms of this subject clearer; except for the automotive field, where there is a balanced distribution of companies according to dimensions, other application fields are dominated by the presence of micro-companies. The companies with less than 6 employees represent even 65.5% for interior design, 76% for cultural and territory design, to arrive to an astonishing 87.8% for graphics and communication.

A similar pattern can be registered by analyzing company dimensions, using the yearly income level as a *proxy* (fig. 25): graphics and communication (90.5%), culture and territory (84%) and interior design (71.2%) are - in decreasing order - the fields in which the number of companies which don't exceed a yearly income of 1 million Euros is highest: essentially, professional agencies or less more. This is perfectly in keeping with the figure related to the number of employees where the same fields show the maximum concentration of micro-companies. At the extreme opposite the automotive field companies and, in a minor rate, those of industrial design field, where medium dimension is higher: even because often these companies, with particular reference to those belonging to industrial design, incorporate productions and not merely product *styling*.

1.4 Organisational models for design activities

The last interesting theme in this initial characterization is the organisation of more specifically design-related activities between competence internalization and external contributions. This the-

me gains a particular relevance from a business point of view, at least for two reasons:

- from the organizational point of view, design competence has surely a stronger value, since it signals its strategic aspect in a company's vision, and because it stresses the need of a company to manage directly (and not to undergo passively) the contribution of design to financial valorization of goods and services;
- as it contributes to the definition of what economists call "absorption capacity" of the company with respect to innovation (*design-driven*, in this case); in other words, as many empiric surveys have widely demonstrated, the presence of high-level competences on innovation themes strongly influences the company's skill to capitalize knowledge, both external and internally developed; the more internal competences a company has, the higher absorption skills are; as a consequence, it is more likely that absorbed knowledge turns into innovation with a more significant economic impact.

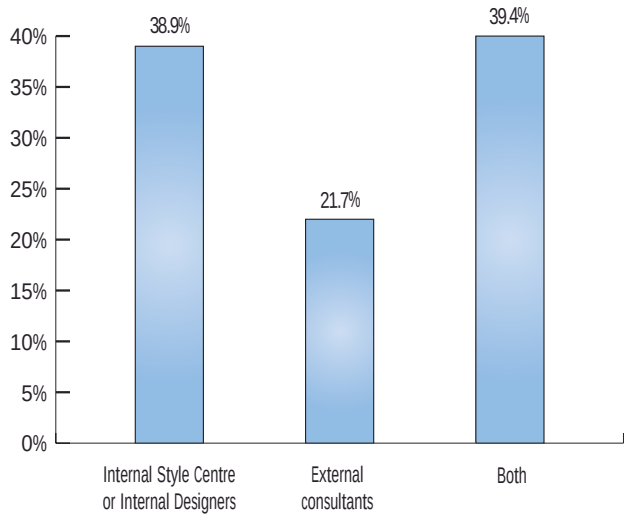
When verifying the analysis results, it is evident that – perhaps intuitively - companies have understood the close relationship between internal design and innovation skills. The prevalent models are two (fig. 26):

- an internalization model for design competences, in the form of style center or design team (38.9% of companies).
- A second, "mixed" model, in which internalization is parallel to the use of external consultancy (39.4%) and where the two types of contribution coexist.

On the contrary, the model involving the complete externalization of design services is less diffused (about 21% of the total).

Figure 26

Organizational models adopted for design skills management (v.%)



This pattern presents a positive correlation with company dimensions (fig. 27). On the micro-dimensional level, recurring to external consultancy appears proportionally stronger. At an intermediate level (5-15 employees), internalization tends to prevail. Finally, when overcoming the threshold of 16 employees, the mixed model (style centre + consultancy) is proportionally more spread for all company dimensions. In other words, when resources allow to, companies are oriented towards a mixed model.

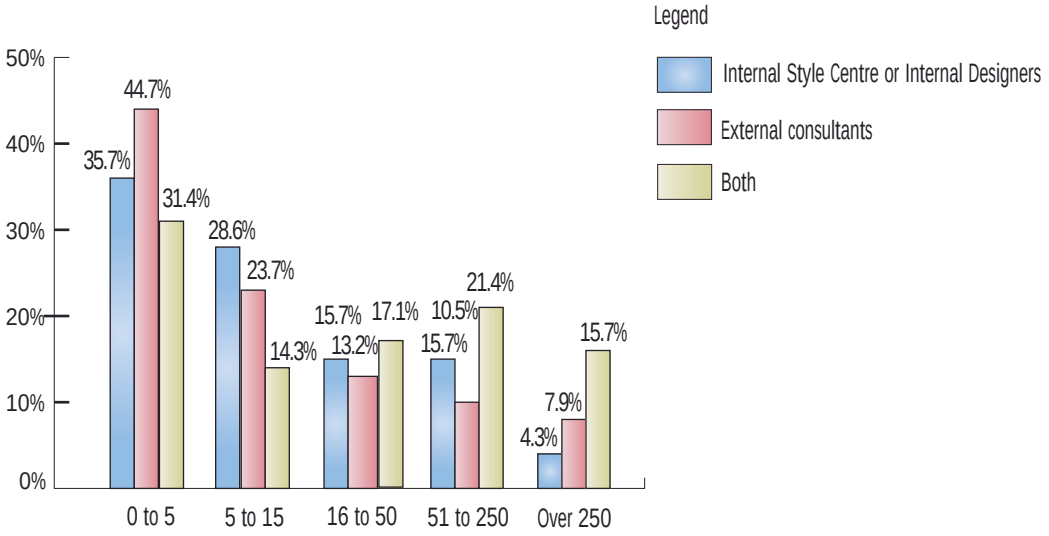
What advantages this organizational model can offer, being surely less efficient from the cost point of view? Actually, advantages are at least two, and overcome disadvantages in terms of higher costs[9]:

- Generates a wider quantity and variety of ideas and proposals
- Creates competitiveness between internal departments and external skills, stimulating the increase of internal structures' quantitative level of and developing creativity.

It is not by chance that this model is made by the majority of car makers, which, besides developing their style centres, largely exploit the competences of companies such as Pininfarina, Bertone, Italdesign (just to mention Piedmont-based companies).

Figure 27

Organisational models for design services: number of employees (v.%)



Note

9) It must be kept in mind that cost rationalizsation is never positive for innovation

The contribution of design to the valorization of goods and services

The subject dealt with in this chapter is the contribution design can offer to product financial valorization processes. Actually, the analysis focuses on the stages of a new product development, to which design can give a valuable contribution, and positively affecting product value creation.

The analysis obviously refers to what happens in Piedmont companies, being elaborated with operators belonging to this territory, and consequently doesn't have any pretences of general validity, independently from wider empiric evaluations.

The purpose of the analysis is particularly to explicit the relationship between design value perception from professionals offering internal or external design services to companies, and the value attributed to these service by the "demand" party, that is by Piedmont companies producing items with a design component. In fact, this type of evaluation is essential to understand to what extent the assets design can offer to company strategy are exploited in Piedmont, as well as to foresee the possible improvement of the relationship between design and companies.

For this purpose, a model is proposed, constituted by the contribution of experts and company operators involved in this research, in which activities on which design typically has a major impact are highlighted, inside the general development process of a new product. The analysis of this model provides elements for further understanding, related to two essential subjects:

- What is the strategic impact of design, or in what way it contributes to the creation of financial value
- Through what mechanisms design contributes to product innovation

2.1 The model

The model described by fig. 28 schematically illustrates the articulation of the development process for a new product, as well as the contribution given by the introduction of design contents, from the initial brief to product commercialization.

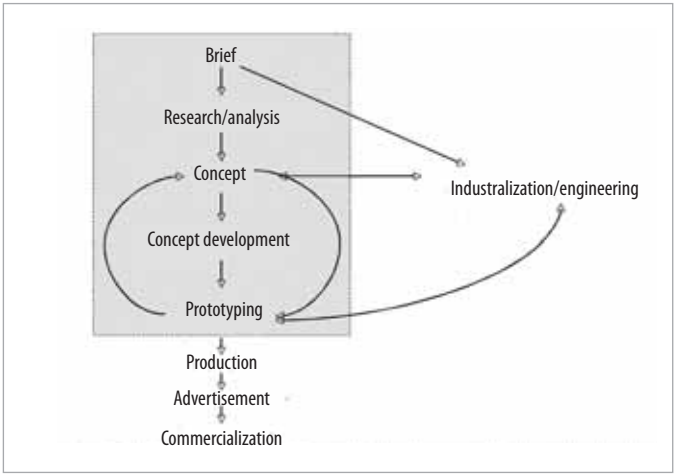
The model stresses common elements detected in various design application fields (industrial, automotive, interior etc.), leaving apart, at least for this phase, the elements which distinguish sectors. However, it is important to underline that engineering and industrialisation phases are present only when design applies to an industrial product, and not in those fields, such as graphic and interior design, in which the final product is often “unique” and not repeated through an industrial process.

In these cases, the model maintains its general validity, though it has to be reinterpreted excluding engineering and industrialization cycles.

The part of the model coloured in grey includes all the activities typically involving the designer directly; development cycle stages in which design does not normally play an important role (from engineering to commercialization) will not be specifically treated because they are outside the scope of this analysis.

Figure 28

Design intervention scope in a new product development process



2.2 The brief

The brief is the departure point of a complex creative process, in which different actors are involved; knowledge sharing, as well as the combination of competences from different subjects, is necessary.

The brief can be defined as the description, more or less structured, and more or less formal, of the project to be implemented, starting from the objectives to reach and to the definition of constraints and project resources. Consequently, it is an activity with a strong strategic and orientation value, which can involve complex evaluation, both for market and product placement and for company vision and values.

The brief also contains the elements defining the project "frame" from a strategic point of view, and, in many cases, the technological ones as well, starting from which the project manager elaborates a creative proposal.

2.3 Research / analysis

This is the exploration stage, in which the designer gathers and analyzes useful material for the creative process. This can involve both the use of analytic techniques and suggestion research. The first group includes activities, such as benchmarking of already implemented projects, not necessarily for the same product category; the possible research on regulations for a defined type of product; the analysis of constraints (or opportunities), both technical and production-related. As successively illustrated, this last aspect has a crucial importance and a particular complexity for some manufacturing fields, such as the automotive one. The channels employed by the designer to find inspiration are many: in some cases, market surveys are carried out on end user preferences, or the designer simply observes the product / service

context of use; in other cases, existing literature is taken into consideration, or one's own sensitivity is followed.

2.4 Concept

The concept can be defined as the product / service idea conceived to meet the requirements presented in the brief (the definite "frame"). Typically, the concept can be elaborated through one or more "brainstorming" sessions concerning the project's theme, even through the application of creative techniques aimed at problem solving.

The final output of this phase can be a single idea or a range of proposals at an initial level, and it is the result of a dialectic exchange between creativity and project constraints. The modalities through which the idea or the ideas are expressed vary according to commercial sector, but always contain a form of visual / formal representation: sketches, drawings, computer-based presentations. The selection of the idea to be developed is carried out, in some cases, by the designer alone; in other cases, the selection is performed through a process, sometimes, repeated, of negotiation with the client or with other figures involved in the design process, generally persons having technical or marketing skills.

2.5 Concept development

Concept development is a refining, deepening process of the original idea, from a conceptual, formal and technical point of view.

The chosen idea is developed and specified in all of its components, and according to modalities which may vary according to the sector.

In all other cases, also the technical aspects related to implementation must be taken into account, and, for some sectors, the designer will have to interact with other professional figures to perform a check on proposed content feasibility in terms of engineering and industrialisation.

2.6 Prototyping

Prototyping consists in the implementation and validation of detailed models of the foreseen final product. There are many types of prototypes, which vary according not only to the sector, but also to the specific objectives of a project. For instance, the prototype may simulate the aestethic impact of the designed product, its shape, or, on the other hand, its functional aspects only.

In many design application fields– but not in the automotive field –, these activities are not included in the range of offered services; however, the involvement of the designer is necessary for many reasons:

- The realization of the prototype needs an intervention of the designer at a supervision and control level.
- A repeated cycle of concept refinement through the implementation and validation (or, in some cases, real test) of the prototype: prototyping can underline the necessity to see the concept again and to start a new planning cycle.

- In some sectors, prototyping can be managed, or even implemented by design professionals. In fields such as the fashion and graphics ones, in which this phase requires less specific competences and resources, the creation of a prototype can be included in the service pack offered to the company by the designer-consultant.

2.7 Production complexity and the role of design

As already stated, the illustrated model has the purpose of representing the intervention fields of design inside the process of product development, which are common to the different fields considered.

Nevertheless, there are numerous factors, linked to the characteristics and peculiarity of every specific field, that remarkably influence the forms of implementation of design activities . The most important of these is the level of complexity characterizing the same productive process. The higher technical complexity is, the more product development is related to the phase of industrialization, internally managed from the manufacturing company and in relationship to which it has an elevated competence.

Therefore, after the brief, when the product is highly complex, as in the case of the automotive, a process of looping is established among planning, industrialization and prototyping; this involves some repeated phases of re-designing, re-industrialization and re-prototyping. In this process, design enters a remarkable interaction with product and process engineering, to the point that the contribution of every component is hardly separable.

This type of interdependences in the produced development is particularly strong for the Industrial design and in the Automotive design, where final product complexity is greater. In these cases, conception and industrialization are intimately tied, so much that it is possible to distinguish them only with difficulty.

Contrarily, when a real industrialization phase doesn't exist, and specifically when the product is not channelled towards mass production, as in the graphic design field, the designer generally has all the necessary competences to cover the whole productive process or, at least, to manage autonomously the process for the client company, through the involvement of technical-implementation competences.

2.8 The strategic contribution of design to goods and service innovation

As previously discussed, the domain of design intervention in the productive process primarily articulates on that activity segment ranging from research / analysis up to concept development and, with a less central role, to prototyping. The other phases of the product development cycle are touched by design only marginally and occasionally.

On the contrary, the use of design competences in the phase of brief definition seems to be much less frequent. At least for Piedmontese companies, this is in charge of management, marketing and technology experts. Generally, the more the buyer is institutionalized and structured, the smaller the probabilities that design contributes to the brief. For a lot of companies, this constitutes a strong limitation of the contribution of design to the innovation and the economic exploitation of the products.

On this point, marked differences exist among different design fields. In the interior design field, for instance, where the purchaser is often a private citizen, the planner's role in the phase of problem definition is generally very remarkable, since it is up to him to understand and to analyze the needs of the client, often unexpressed. This occurs much more rarely in the industrial field, where a much greater complexity and articulation of the productive process exists.

From the moment that the brief really defines the strategic aspects of the project, besides often defining, the technological aspects related to the product and its realization, the trend to exclude design competences from this phase remarkably limits its contribution to product innovation. In other words, in these business contexts, design is mainly identified with *product style*; in this way, innovation potential is not recognized, thus remaining unexpressed.

Obviously, there are some exceptions, and some excellent ones, to this trend, represented in Piedmont by companies as Alessi, Lavazza and, above all beginning from the recent business reorganization and exploitation of Fiat style center.

Luckily, positive examples in the use of the design are not restricted to the most famous cases. Also other less known companies in the Piedmontese territory attribute a remarkable role to design in product innovation: this becomes evident - in the process of product development - in the basic involvement of design competences in the analyzed process. An investigation has allowed to bring to evidence, at a qualitative level, some less known cases, but never-

theless interesting, of real business *turnaround* baited by the graft of components of design in the conception and development of new products and new product lines. In these cases, the contribution of design is qualified as a *trigger* of radical innovations that has greatly contributed to improve the situation of companies.

The Piedmontese company Ritmonio represents a meaningful case to this purpose, illustrating clearly some of the conditions that product innovation can make possible thanks to design.

Product innovation through design: the case of Ritmonio

Ritmonio is born as an OEM company, specialized in the production of components for cooling and heating plants. In 1996, designer Davide Vercelli is entrusted by the owners to plan a new shed; in this way, he comes into contact with the company. Impressed by the manufacturing culture and by the technological know-how of Ritmonio, Vercelli realizes the still unexpressed potential of the company, and the possibility to valorisze it through the contribution of design.

From here, the idea it is born to re-direct, at least partly, technologies and competences towards a consumer market, inaugurating a new productive division devoted to domestic faucets. The project that Vercelli proposes to the firm has two precise objectives:

- to aim at design as an element for product innovation (from components for cooling and heating plants to faucets)
- to introduce the company in a not yet crowded market area, that is the intermediate level between mass and éelite products.

In fact, the idea is to develop a formal, functional, but above all cultural research on water and on its consumption modalities, maintaining limited manufacturing costs and contained prices at the same time.

The enthusiasm and the professionalism of the designer, as well as the introduced productive plan, convincepersuade the ownership management to support the challenge, entrusting the direction of the new division to Vercelli.

Since the beginning, Ritmonio products reflect a design-driven approach, and,; thanks to this, they are soon appreciated both by the world of design and by the market. One of the first commercialized products, Dumbo, is signalled to the XIX "Compasso d'oro" prize and enters the selection of the ADI Desing Index for the originality with which it interprets the function of the kitchen faucet, besides the attention towards environmental impact.

Designed in 1997, DUMBO is born and evolves beginning from a global revisitation of the kitchen faucet, developing two innovative concepts towards the traditional faucets, covered by brevet: the first one is to put out of the visual scope the faucet body, setting it below the sink; the second is the creation of a joined and freely manoeuvrable tap to reach every angle of the tub. Moreover, the packaging of DUMBO has been designed to reduce environmental impact to the least; in fact, the product is sold in a jar that can be reused as a kitchen container.

Another example of the role of design and product research for Ritmonio is Bianconiglio, one of the latest products of the bath fixture division. In this case, the innovation is represented by a radical revisitation of the water distribution system, both from the functional point of view (possibility of to monitoring, regulationregulate and, rationalization use of the water resource reasonably) and from the aesthetical-experience one, through the introduction of a digital interface exploiting tactile sensors and light LED.

The solution: a box embedded in the wall, where water flow and temperature are regulated; an only pipe - instead of the present two - that conducts water mixed to sanitary; an intelligent interface, of immediate understanding, that replaces the traditional commands with a digital panel.

The consequences: freedom to design new forms, thinking about the faucet alone as a water source, without confining it to dress the cartridge; possibility to check real water consumption; dematerialization of the distribution structure, with a consequent material and assembly time saving; ability to communicate with a system of domotics just with a glance and a touch.

Design investment is also a success from the economic point of view; in 1999, the income of Ritmonio didn't exceed 13 million Euros, while, with the new division, it increases up to 15 million, to reach 28.5 million in 2006, of which 10 million only for the bath and kitchen division.

The "Teckel" case (Adriano design for BLab)

BLab Italia is born in 2000 as a company devoted to innovation, but develops as producer of hi-tech semi-processed products. In February 2007, BLab contacts Adriano brothers (Adriano Design) to ask for an intervention, aimed at transforming the company into a high design content producer. To this purpose, Adriano brothers are entrusted the Art Direction of the company and full freedom of action, with the only restriction to use and to valorizse the innovative materials developed by BLab. The challenge proposed by that designers Davide and Gabriele Adriano propose is to take part to the International Salon of Furniture in Milan with a collection of objects that exploits and exalts the great technical-technological abilities of the company, more than the semi-processed products, which will be the future characterizing icons of the new brand.

Particularly, Adriano agency decides to aim at a specific object, that has a disruptive impact and a notable appeal. In this way, Teckel, a football table with a glass playing surface, is created, completely revisiting the object to make it technologically sophisticated and rich, leaving its playing element intact.

Entirely made of glass, Teckel is characterised by its transparency, its essential shape and its elegant figurines in dye-cast aluminum fusion. The football table is an object which was born in the province cafés and in the oratories of the parishes oratories; Teckel wants to bring this object in the living room of a house, in the hall of a luxury hotel, in the privés of venues, in "luxury places", in spite of a completely different history and tradition.

Also in this case, as in the previous one, the success of the product goes beyond expectations; at the end of the Salon, placed orders are already thousands, and Teckel is required

requested by a lot of famous hotel chains, among which the hotel belonging to Philippe Starck. Therefore, the courage to put on in discussion reconsider its production has rewarded BLab, allowing to reach new finishing lines goals and infusing a new enthusiasm and a new awareness of its possibilities.

Design offer: relationships with market and distribution channes

This chapter deals with the modalities through which design services and products are introduced in the market, or rather with the mechanisms of the distribution system. To this purpose, using the data provided by the interviewed companies, the modalities with which B2B companies promote their own services / products and enter relationship with new clients will be analyzed.

The analysis will be restricted to B2B companies because, in this segment, the greatest part of design companies in narrow sense are concentrated, being B2C companies predominantly design-users.

3.1 B2B companies: distribution channels

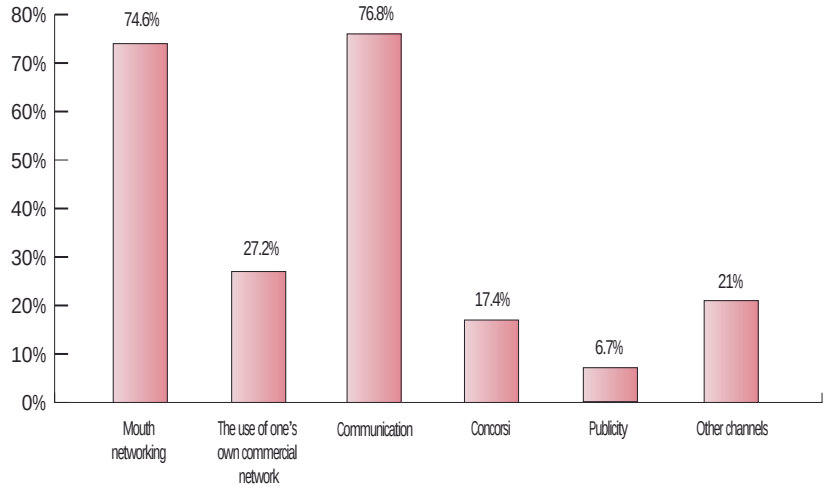
As underlined by Fig. 29, the most common modalities, for all the considered sectors, through which B2B companies come into contact with new clients are: communication (76.8% of companies declare to use this channel), "word of mouth" and networking (74.6%).

The first category includes all the initiatives aimed at increasing company visibility , such as the presence on Internet, publications (both books and reviews), participation to field events

and fairs. Word of mouth / networking are meant as the new clients' contact mechanisms through direct knowledge or through the references from already acquired clients or other actors (for instance colleagues or partners).

Figure 29

Contact modalities with new clients (v.%)

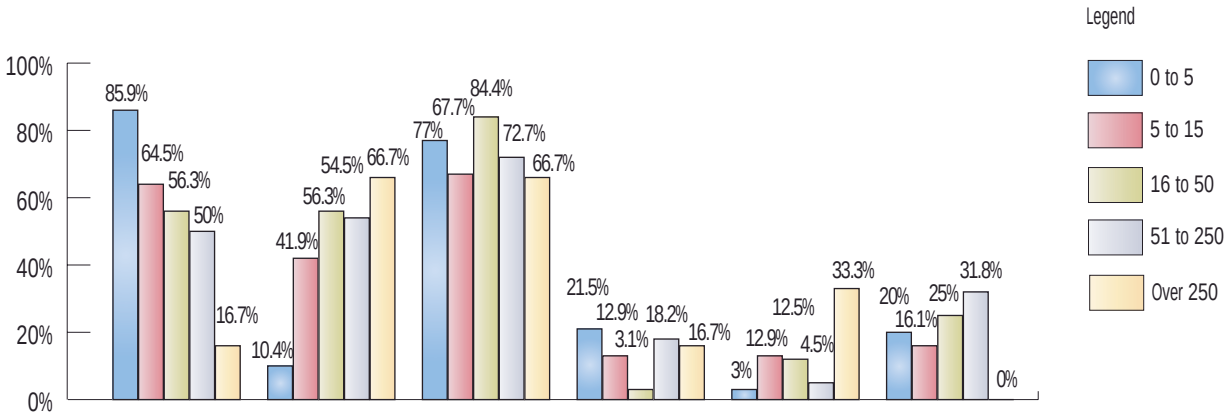


Besides, contact modalities for new clients used by the examined companies are correlated to company dimensions (measured through the number of employees) as it is illustrated by fig 30. Particularly, as it can be easily deduced, the use of the word of mouth / networking is inversely correlated to company dimensions to a very large extent (reduced dimension companies tend to use it largely). On the contrary, when company dimensions grow, the use of a commercial network, either direct or indirect, becomes more remarkable (small companies

rarely have commercial networks). Finally, communication - evidently with different tools - constitutes a key tool for companies of any dimension.

Figure 30

Contact modalities for new clients: categories of employees (v.%)



In comparison to generally meant communication, the case of advertising, becoming a really accessible tool only for companies above a certain dimension (over 250 employees) is different. For this channel, ,dimensions, along with investment skills, really make a difference.

3.2 Design service promotion: main points

The in-depth analysis with experts and operators of the main companies has signalled some points deserving attention, as regards modalities with which design companies enter relationship with the market and prospective clients. The main points are listed below.

Awards. The modality with which companies, especially smaller ones, meet the market more frequently, is linked to forms of popularity and contexts that increase this immaterial value. The national and international prizes represent a much sought-for brand affirmation form, strongly linked to the interpretation of design as a form of "paradigmatic" art of the industrial era.

Contests and competitions. Another quite diffused mechanism in the EU area is represented by contests, that are used by 10-20% of companies from various design application fields (see figure 30), with a peak of 50% for emerging sectors characterized as "culture and territory". Being the contest formula privileged for purchases by the Public Administration, it is understood that it represents a remarkable form of access to the market. Nevertheless, the access to contest procedures are highly complex, because designers' work is not always adequately acknowledged. Particularly, an investigation has identified the following critical factors:

- The aggregation among Italian, and particularly Piedmontese companies, for the participation to European-level competitions finds a strong limitation in the small dimension of the Italian companies
- sometimes, formal ties that hinder the exploitation of the developed job or limit the participation of smaller companies are present
- the evaluation committees' design knowledge is not always suitable to the appraisal of the submitted projects
- there are no adequate instruments for the protection of intellectual property, guaranteeing companies or professionals submitting the project

- often, companies don't get any revenue from the publication of the received projects, which is entirely taken by the corporate body proposing the contest or the competition.

Some comments on these weak points

The extreme weakness of Italian design companies comes to the fore when they participate to competitions in the European context. They rarely succeed in becoming leaders; when they succeed in entering consortia and multi-national ATI, they are often marginal participants with respect to other greater countries. All of this ends up chasing away again the Piedmontese companies inside the national context.

Particularly, small companies, individual companies and professional agencies complain about this situation in the continental context; nevertheless, they are the most spread form of company legal status among independent designers (not depending on companies). The request to the public sector is double:

a) a constant monitoring of the opportunities on the European markets, as well as a timely information supply to the companies, which often do not have the tools to perform autonomously such scouting activity;
b) to act as an aggregator and leader of groups of companies in the participation to European competitions and contests

As for the second point, the companies underline that the construction of the specifications for the participation to this type of competitions and public contests doesn't take into account the specific factors of the sector.

The criticism to the "incompetence" of a lot of evaluation Committees in such competitions and contests is analogous; often, evaluators don't have the competences to appraise the intrinsic quality of the design proposal, therefore they merely appraise secondary parameters (income, number of employees, type of company, etc.).

Protection of intellectual property. This is a very delicate subject because the traditional forms of protection (brevet, deposited brand, etc.) are not fit to protect the design content of a project. In Italy, unlike other European countries, there are no suitable tools to protect intellectual property within the design field, such as the recording or dating of concepts and submitted projects. This shows a residual type of design culture, not suitable to the importance the sector has, not only in Piedmont, but in the whole country. For instance, it would be important for Italy to adjust as soon as possible the in-force regulations to the ICOGRADA (International Council of Graphic Design Associations) standards and directives, already including more modern forms of protection. This scarce protection, besides representing a risk for companies, especially for smaller ones, for which the participation to a contest or to a competition constitutes a remarkable time and resources investment, affects the quality of submitted projects, obliging the companies themselves to be less innovative.

As regards the last point, there is also a criticism towards the routine of publishing proposals submitted for a competition when this results in an economic revenue (e. g. publication of a catalogue of sketches or projects). In these cases, these are taken by the corporate body proposing the competition, without any form of revenue sharing with the companies or the

designers whose works are object of the publication. In opposition to this, the publication of projects constitutes a form of promotion that should give a benefit to companies and designers, and not the corporate body.

"Sketches" and royalties model

A diffused form of service purchase in the field of industrial design, often criticized by the community of designers, it known, with negative meaning, as the "sketches" model. It includes the presentation by the company of a concept design for new products in the form of "sketches" (therefore, concepts implemented without a precise brief from the same manufacturing firm).

- This form is very often associated to the payment of the contribution of design through "royalties": the design company proposing the new products is remunerated through a percentage on the sales of the products by the manufacturing company. This model of relationship among manufacturing companies is criticized by the designers community because:
- it penalizes the smallest companies, that don't have the necessary resources to invest on concept generation;
- it negatively affects project quality and experimentation, since the concepts object of the "sketches" are developed without a precise brief from the manufacturing companies.

Promotion of design services and contact with potential demand

The possibility for companies offering design services to come into contact and to collaborate, on real projects, with Piedmontese manufacturing companies, has become a remarkable opportunity of design promotion in new fields.

Therefore, the experimentation, from the competent corporate bodies, of new initiatives to support the diffusion of design in the manufacturing tissue and to sensitize demand is perceived as a positive fact, even if there is not uniformity of views on the most opportune forms to favour design promotion and diffusion.

One of the initiatives considered with interest to this purpose is represented by the project Canavese Connexion, promoted by the Industrial Association of the Canavese area, and born with the aim of exploiting that the potential design can offer to companies for their industrial re-qualification and market re-placement. This project foresees the presence of a designer in a company, in charge of developing for free an innovative product / prototype by exploiting the implementation and productive competences of the firm of destination. The results of initiatives of this type can provide further indications on the best promotion and diffusion forms for design services in the Piedmontese productive tissue.

Competitive placement of the piedmontese design companies

The analysis of the universe of Piedmontese design behaviour towards business protagonists and experts has allowed to make a reasoning on the competitive position of the sector. Such analysis has been made separately for every application field (from the industrial design up to the emerging sectors). Nevertheless, the incomplete separation between the different fields and the elevated permeability of boundaries among the different application domains that characterize such universe (not only in Piedmont) has made evident the existence of many common points for the six analysed sectors. Therefore, at the end of the analysis, a competitive positioning that unites all design companies besides sector peculiarities on some themes has emerged.

4.1 An analysis of the competitive placement of Piedmontese design: common themes

As already remembered, groups of experts and business operators have participated to the analysis of competitive placement, organized in homogeneous groups for sector[10]. The analysis

Note

10) Within the investigation, 6 homogeneous workshops have been realized held under the profilefrom the point of view of the design application field: industrial design, automotive design, internal design, graphic and communication design, fashion design, culture and territory design.

of the various themes object of analysis has been carried out in a dialogue context, through homogeneous workshops divided according to design application fields. This has not only allowed to deepen the different themes object of analysis, but has also stresses points of view and opinions dialectically shared by the different actors involved.

The analysis of the competitive positioning has been effected through a classical SWOT[1] analysis. Fig. 31, a mono-dimensional type SWOT map (rather than bi-dimensional, as it is generally used), synthesizes the principal elements characterizing the present competitive placement of the Piedmontese design companies.

Note

11) SWOT: Strenghts, Weakness, Opportunities and Ties

Figure 31

Competitive placement of the Piedmontese design companies - relevant elements common to the whole sector

STRENGHT POINTS	*WEAK POINTS*
• Competence (mainly in the automotive field) • "Internal competition" between design companies	• Entrepreneurial tissue fragmentation • Difficulty in creating a system • Brand and Marketing • Management skills • Presence abroad
OPPORTUNITIES	*RISKS*
• Manufacturing tradition • New fields for design • Networking and knowledge sharing • "Chain" of exhibition events • Cultural liveliness • FIAT re-launch	• Diffusion of design culture • Contests and competitions • Loss of important "showcases" • Protection of intellectual property • Design schools-companies relationship

Though with different degrees and tones according to the considered sector, the professionals of Piedmontese design identify in **design competences** on the territory the principal **point of strength** of the service offer.

Particularly, the automotive sector is identified as an area of international excellence, thanks to its tradition and competences both in style and in other elements of planning. It is not by chance that some of the main companies that compete at an international level in the sector of the services of automotive design are based in the Turin district (Pininfarina, Italdesign, Bertone).

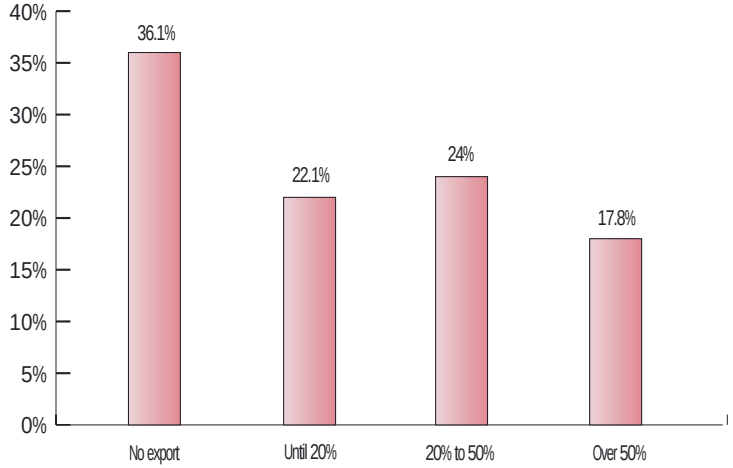
The main element at the basis of a highly qualified offer on the territory is, besides the remarkable *design-related* companies tissue, the presence of centres of excellence for competence creation and diffusion (Politecnico di Torino, design schools).

It is important to observe how this perception of elevated competence is also shared by the company universe, both Italian and international. If the competence degree of design companies is used as a *proxy*, it is possible to observe that such competence not only exists, but it is already acknowledged at an international level.

While about one third of companies doesn't operate in the foreign countries (fig. 32), the remaining 63.9% realizes an income share outside national boundaries. This by itself testifies as the "Piedmontese quality" within the design is already acknowledged abroad.

Figure 31

Income share obtained in foreign countries by design-related companies (values %)



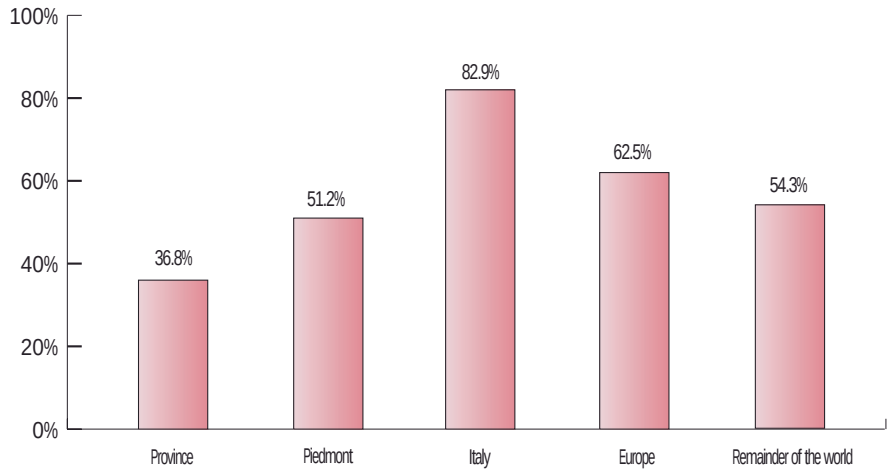
If different application fields are analyzed, it is observed that the less international sectors, as predictable, are those of graphics and communication and interior design. On the contrary, the more international are the automotive and fashion fields: not only they are those in which the number of companies exclusively operating in Italy is lower (respectively 23.8% and 27.5%), but also those in which the number of companies having a non marginal presence in foreign countries is higher (superior to 20% of income: 57.2% in the case of the automotive and 52.5% of the fashion field).

In which territorial contexts these companies operate, when they move to foreign countries (fig. 33)?

62.5% declares to operate in Europe but a remarkable number, equal to 54.3% is also present in non-European countries.

Figure 33

Geographic reference area for design-related companies (multiple choice, % values)



Once more, the analysis according to application fields (fig. 34 and 35) puts in evidence the greater abroad projection of automotive and fashion fields.

Figure 34

Geographical area of reference of design-related companies, for industrial, automotive and graphics / communication fields (multiple choice; % values)

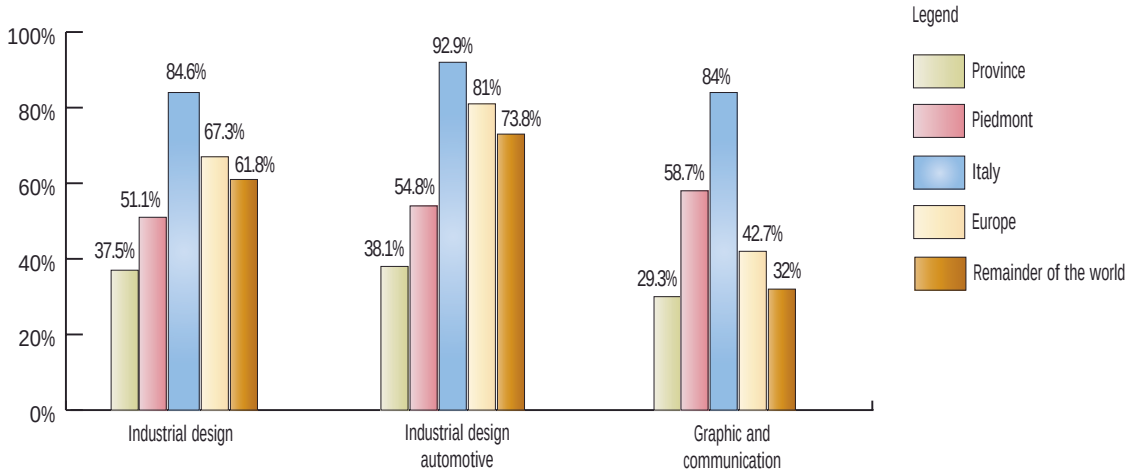
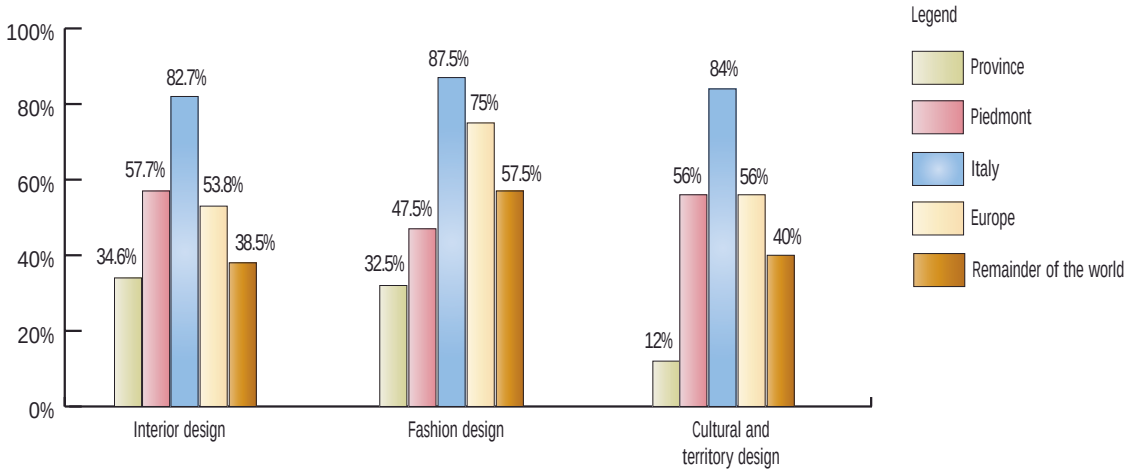


Figure 35

Geographical area of reference for design-related companies, for interior, fashion and culture and territory fields (multiple choice; % values)



Interviews with experts have allowed to identify different mechanisms of feeding and consolidation of the "domain" competences, characterising Piedmont design companies:

- A consolidated relationship with foreign design realities, that guarantees a continuous updating and favours the enrichment of service offer;
- A good attitude towards experimentation and the use of new tools (for instance, video production for the field of the graphic design), as well as ability to acquire new practices to enrich the offered services;

- the presence, especially in the automotive and industrial design fields, of elevated technical competences, allowing an effective relationship with technical offices and with the structures of product and process engineering of manufacturing companies;
- the ability of the companies to meet tighter project deadlines, determined by the shortening new products development cycles.

Besides, the dynamics of internal competition among the realities rooted in the Piedmontese territory offering services of qualified design, is a remarkable incentive to the continuous evolution of such services and competences. Also, the cultural and artistic ferment that has been characterizing Piedmont in the last years, particularly Turin, and that involves also new juvenile cultures (musical styles, new forms of art), favouring design experimentation as well (for instance on the theme of the contamination between art and design), constitutes a "system" factor encouraging competence consolidation.

The potentialities constituted by design competences on the Piedmontese territory and by the significant presence of *design-related* companies (both B2B and B2C) don't constitute, by themselves, a suitable growth guarantee for design services. In fact, some elements limiting the development of the design offer, related to offer characteristics and to local demand, both actual and potential, are detected. Those elements are:

- the lack of brand of the Piedmontese design;
- the fragmentation of the entrepreneurial tissue;
- the lack of a widespread design culture in a (large) part of the regional entrepreneurial base.

4.2 Brand and Marketing

If the automotive field and some very important companies in the fashion and industrial field are excluded, Piedmontese design represents a relatively "new" phenomenon. Therefore, it cannot be supported by a consolidated "brand identity" , especially with respect to certain design sectors of the Milanese territory, such as fashion and furniture design. As a consequence, also because of the territorial proximity between Piedmont and the Milan area, this last strongly attracts Piedmontese talents and companies, and this darkens the design image of the region, both in Italy and in foreign countries. For instance, the *brain drain* practiced from the Politecnico di Milano design school on undergraduate and post-graduate students is well known - except for automotive design, in which the Politecnico di Torino maintains its leadership.

This weakness at a brand level has remarkable consequences on design development in the Piedmontese territory, among which:

- the lack of a clear and univocal message from design companies and professionals toward their main interlocutors (companies, institutions), relatively to the role of design (intervention fields and objectives, added value);
- the difficulty to express, both in Italy and in foreign countries, the competence level of the Piedmontese design companies.

One of the main causes of the lack of a brand identity in Piedmontese design (leaving apart the already mentioned exceptions) is the **scarce attitude to communication and marketing** of Piedmontese designers. In addition, Piedmont is progressively losing some

important showcases (Salone dell'auto, Samia) and other events have been moved away (IdeaBiella) in some key sectors of the *design-related* economy of the region.

Despite the loss of such showcases, the events that have had and will take place in Turin, also due to the positive influence and to the city's image re-launch, brought about by the Olympic games (Turin Word Design Capital, world lecture of Architecture, Olympiads of the air, anniversary of the unification of Italy), if exploited in suitable way, can become a significant opportunity to contribute to the growth of the Piedmontese design.

4.3 Entrepreneurial fragmentation and company "system"

A second element limiting the diffusion of design culture and the development of service demand on the Piedmontese territory is constituted by entrepreneurial fragmentation, which characterizes the offer of design services (with relevant exceptions in the automotive field). Taking back what has already been analyzed in Chapter 1 (see figures 3 and 4), the greatest part of companies referable to *design-related* economy are at a micro and small level: and this is true whether the phenomenon is looked at from the number of employees point of view or from the income one.

The fragmentation of the entrepreneurial tissue and the reduced dimensions of companies, largely constitutes by professional agencies or by micro-companies, making products that incorporate design components, is surely an aspect limiting the diffusion of design culture on the territory, as well as the creation of a consolidated brand.

In fact, due to their resources and marketing skills, micro-companies and professional agencies are not able to develop communication initiatives having a generalized effect sensitization on the themes of design toward the Piedmontese entrepreneurial tissue, which still doesn't show any interest in design[12].

Besides, the disadvantages related to the fragmentation of the entrepreneurial tissue are not presently fully balanced by the ability of the companies to "make a system" towards common interlocutors (companies, PA), with respect to:

- marketing and promotion initiatives;
- greater service standardization in terms of rates and intervention fields, as well as of forms to provide such services (deadlines, *deliverables*);
- possibility of affecting, at least partly, contest procedures, often not held suitable to the characteristics and peculiarities of design services in the different sectors.

There is a currently ongoing process, not yet fully finished but significant, for the development and consolidation of a network of professionals and companies offering design services on the territory. This process is transversal to the different application fields, and can also favour the confrontation and the circulation of competences, as well as the standardization service providing modalities and the creation of common communication initiatives.

Note

12) On the other hand, it must also be said that the general fragmentation of the region's entrepreneurial tissue, which is also a national phenomenon, leaves many doubts on the absorption capacity of small and micro-companies, also from the manufacturing sector. Also, we believe that the potential of which the operators often speak should be measured carefully and with different tools, and not only evoked comparing the penetration rate of design-related companies to the total number of companies in the region

Besides the mechanisms of communication and confrontation, based on the existing informal relationships among the different professionals of design, often coming from the same formation centres (Politecnico di Torino, Politecnico di Milano and design schools), the number of initiatives aimed at creating and consolidating a community of designers of the Piedmontese territory is growing. The TURN initiative, for instance, is aimed at promoting design, also acting as a unique "dialogue subject" toward firms and institutions. The realities of this type, created "from the bottom", though perceived as an interesting opportunity, above all also for new reality or small companies, are still in a consolidation phase and looking for a precise role, above all if compared to already consolidated associations of national relevance, such as ADI.

4.4 Potential service demand and design culture diffusion

A last critical factor for the development of the offer of design services is constituted by the lack of culture and sensibility towards design in a remarkable segment of the Piedmontese entrepreneurial reality.

The presence on the territory of a significant number of manufacturing companies characterised by care for details and final product quality, constitutes a remarkable , though still unexplored, potential market for the offer of design products and services. This potential market includes the companies, for competition and loss of market shares reasons, need more than others to renew and to re-launch their range of products. As already remembered (see Ritmonio and BLab Italia-Teckel cases, chapter 2), there are already cases in which such meeting has taken place, though they are symbolic but isolated cases.

The main difficulty for the diffusion of design competences, methods and practices in those realities, besides to the already mentioned offer communication limits, is due to the consequent lack of culture and sensibility towards design in a remarkable segment of these companies.

Despite difficulties, it must be noted how some positive changes are taking place. One of them, very relevant on the symbolic plan, is constituted by the re-launch of Fiat. Nevertheless, the importance of the events of the Marchionne management, the market success of models having a strong icon value, like Fiat 500 (a car "soaked" in high-quality design), and - *last but not least* - the re-launch of the Style Center is testified by the fact that it is mentioned by all field experts, that see it as a clear sign of potential trend reversal.

Basic skills generation and reproduction

As in every system-area focused on *knowledge-intensive*[13] productions, the universe of Piedmontese design-related companies as well lives on thanks to the operation of a vital component of the system itself: the mechanism of generation and reproduction of basic skills, feeding knowledge-intensive productions characterizing it. Here, a reference is made to the system of the universities and schools on one hand, transmitting design competences transmit to new generations and, by doing so, "reproduce" design competences on the territory; and, on the other hand, to public and private research centres, which furtherly develop design skills to the "frontier" of discipline. The whole these worlds constitute is the "system of skills reproduction" of the design system analysed by this study. It is needless to say that these subjects become related to companies in many ways, and that - at least partly - the ability of the economic system to "translate" the accumulated knowledge into a financial value depends on the quality of this relationship.

Note

13) See next chapter for the conceptual definition of the "Piedmont design system" as a knowledge-intensive system area.

5.1 High formation and excellence

5.1.1 Politecnico di Torino

Politecnico di Torino represents one of the national realities of excellence (together with Politecnico di Milano and the IUAV in Venice) in terms of formative offer and design research.

As regards the formative offer, the course of studies in Industrial Design of the Politecnico di Torino, active from the mid-Nineties, introduces an articulated and diversified program for different sectors of design application .

In fact, the Industrial Design course has been conceived with the objective to create not only professionals able to intervene on the formal process of the industrial object, but to bring a design value to all the phases of the productive process.

Therefore, the Course of studies in Industrial Design focuses on formal aspects, essential for the profession of the designer, and also on themes such as innovation management, total quality, economic evaluation of projects, product marketing, sustainable development, production processes and methods.

The formative offer is constituted by *first-level degrees and magistral degrees*. As regards possible work opportunities, it must be underlined that the degree course in Industrial Design has been conceived to create significant competences in different sectors linked to the presence of clusters and industrial districts on the Piedmontese territory :

- components design;
- techno-design;
- urban design;

- metal processing design;
- environmentally friendly design;
- textile design;
- packaging design;
- virtual design.

5.1.2 IAAD (Institute of Applied Arts and Design)

The IAAD (Institute of Applied Art and Design) was born in 1978 with a specific vocation for the formation in the field of the visual communication. During the years, formative activities have extended to different design fields, and the institute has become an important reference point for the whole sector. Particularly, the IAAD is the first Italian institute that has activated a course of "Bodywork Architecture", today "Transportation design".

In 2005, the institute gets the acknowledgement of the EABHES - European Accreditation Board of Higher Education Schools for the attainment of the European Bachelor of Science in Design. It is the only one in Italy.

The present departments of the institute are four: Transportation design, Industrial design, Interior & furniture design, Publicity & graphic design.

The formative activity of the IAAD is aimed both at qualified students or postgraduates and at professionals already inserted in a working activity. The courses are divided into three typologies: *First-level postgraduates, Second-level postgraduates, Personalized courses.*

The collaboration with field companies is one of the fundamental lines of the formative approach of the IAAD; in fact, students are involved in project activities patronized by industry, in which they learn to apply the knowledge and the competences acquired to the demand's requirements.

5.1.3 IED (European Institute of Design)

Born in 1966, the IED (European Institute of Design) is an international network of formation institutes in the field of the design, based in Italy (Milan, Rome, Turin), Spain and Brazil. The international vocation of the school is also reflected by the composition of the students' body; in fact, in its European centres, the IED has formed 70.000 students coming from different countries and it hosts more than 1,600 foreign students every year, only in Italy. The Turin branch, operating from 1989, shares the methodology and the philosophy of teaching of the other centres, though expressing an autonomous personality at the same time, thanks to the fact it is rooted in the entrepreneurial and productive tissue of the city and, more generally, of the region.

The formative activity of the IED, aimed at both students and professionals, articulates in the fields of Fashion, Design, Visual Arts and Communication through an offer of *three-year postgraduate courses, Master courses, Master research Study Program and Courses of advanced formation*.

The close cooperation between IED and national and international companies is an essential part of the didactic approach. Workshop and dissertations are true experiences of "professional simulation" during which IED students are involved in concrete projects, defined together with the companies themselves, and experiment techniques and modern methodologies of advanced planning.

5.1.4 University of Gastronomic Sciences

The University of Gastronomic Sciences, a unique formation institute at an international level, is a private university, legally recognized, born at the beginning of 2003 and promoted by Slow Food with the collaboration of two Regions, Emilia-Romagna and Piedmont.

The objective of the University of Gastronomic Sciences is to create an international center of formation and research, aimed at those who work for a renewed agriculture, for biodiversity safeguard, for an organic relationship between gastronomy and agrarian sciences.

The didactic offer, realized with the support of an autonomous, non-profit association (Association Friends of the university of Gastronomic Sciences), dealing with the organizational and economic aspects, includes a three-year Degree course in Gastronomic Sciences, a biennial Specialist Degree in Food Sciences and Gastronomic Communication and a Master course in Gastronomic Sciences and Quality Products (in English language).

5.2 Design Research Centres

Despite being objectively more limited in comparison to the formative system, the offer of Research Centres is highly qualified, being represented on the public side by the Politecnico, and on the private one by the Fiat Research Center (CRF). Though it is not present on the territory, it is important to mention the research activity developed by the Politecnico di Milano as well, both for the importance of the school in the national and international panorama, and for the attraction effect it exerts on a large number of top companies of Piedmontese design.

5.2.1 Politecnico di Torino

The Politecnico di Torino, particularly through the Department of Architectural Planning and Industrial Drawing (DIPRADI) develops research activities around three main areas:

- Analysis and project for the transformation of the built environment;
- Knowledge and exploitation of architectural and environmental heritage;
- Industrial product design and sustainable development.

The thematic area of search of industrial product design focuses particularly on the following research themes:

- specific design fields for industrial production, among which components design, techno-design, urban design, textile / fashion design, packaging design;
- urban design, an instrument for the intervention and control of public space image through planning and the contextualized design of the systems for service and urban equipments;
- design for material culture product. It deals with the employment of design aimed at the recovery of product identity and productive activity, expression of local cultures;
- Eco-sustainable design;
- Promotion of the regional design system.

5.2.2 FIAT Research Center

Fiat Research Center (CRF), unique in Italy for its dimensions and objectives, is born in 1976 as a reference pole for the innovation, research and development of the Fiat Group, turning subsequently into a Consortium with a share of the Group companies, currently amounting to about 870 employees.

During the years, the CRF develops all over the world with a network of over 150 universities and research centres, and over 750 industrial partners. Such network is able to subsequently strengthen the global strategies of innovation, to implement specific operational activities at a local level, to assure the creation of competences and a continuous monitoring aimed at competitiveness and development.

The objectives of the Fiat Research Centre are:

- the use of the innovation as a strategic asset in the business of the Fiat Group;
- the exploitation of the results of its own activities through promotion;
- the development and transfer of innovative contents to distinguish the product and to make it competitive.

The CRF performs a remarkable research activity on automotive design, particularly in two areas, Style and Interiors.

5.2.3 Politecnico of Milano

The reference to the Politecnico di Milano in the research field is motivated not only by its scientific importance, but also from the connection and interdependence existing between Lombardy and Piedmont. in the field of research and formation.

The activities of design research at the Politecnico di Milano is mainly coordinated by the INDACO Department - of Industrial Design, Art, Communication and Fashion - that has the specific and strategic objective to create research occasions in collaboration with corporate bodies, associations and institutions, to promote design as a competitive factor of the national economic system, and also to spread the culture of design-related innovation in other national

productive contexts through research and collaborations at a European and extra-European level.

Moreover, the department promotes the confrontation and sharing of initiatives and projects with the other actors of the "System Design", both in Milan and at a national level: companies, different forms of association and cultural operators.

The main research fields promoted by the INDACO department are:

- Cultural heritage design and project basis;
- Communication design;
- Product design and ergonomics;
- Interiors;
- Commercial goods and meta-project;
- Project and network and service management optimization;
- Visual perception and representation;
- Planning, projects, systems and services for sustainability and mobility.

A return to theory: design-driven innovation in its territorial milieu

After an accurate analysis of the empirical elements which came to the fore in this investigation on design-related economy in Piedmont, this last chapter goes back to theory for a better characterization of described phenomena. In fact, design literature is very rich, both in Italy and in foreign countries, and it provides interpretation elements and categories, as well as theoretical schemes that can help a better understanding of the role of design in economy and - last but not least - in the orientation of policy actions.

Particularly, attention will focus on two particularly significant points,: the relationship between design and innovation, on which the investigation provides important elements, above all beginning from the "cases" analyzed in depth; and the relationship between design and territory.

6.1 Design-driven innovation: the theoretical model

The relationship between design and innovation and the role of design as a competitive factor in product innovation is substantially treated by literature according to two "polarizations."

A first approach identifies design as a "secondary" competitive factor with respect to actual product innovation, the "core" of which is constituted by technological and functional innovation.

For instance, this approach is developed by Oakley, (1990) who makes a distinction between "basic innovations", or the new emerging technologies, and "designed innovation", or the translation and exploitation of the new technologies in products destined to target and different uses.

According to this approach, design is conceived as a "complementary" factor of innovation, the principal driver of which is represented by technology; it intervenes in a following phase with respect to "true innovation" - on technological basis. In this sense, design is flattened on the "style" factor ; being a complementary factor, is not able to produce "radical" innovation yet, but a mere incremental innovation.

Another form mentioned by literature to characterize the role of the design as an "incremental" - and not "radical" - innovation factor is the concept of "swarming secondary innovations". In this meaning, the value brought by design is linked to the progressive improvement of existing products, based on one determined technology or on the progressive differentiation of such products. Its role essentially consists in the relationship with the market as an element of product differentiation, and a continuous adjustment factor to the mutable taste of the different consumers targets. In a word, "style."

The "polarity" opposite to the just described one is aimed at giving an account of typical phenomena in some Italian design-related companies, hardly explainable by the technology led approach. Such interpretative key is driven from a group of experts from the Department of

Design of the Politecnico di Milano (INDACO), who deepen the notion of "design-driven innovation" or, to use the title of a recent study by Utterback and colleagues, design inspired[14].

This different approach connects two types of innovation: the functional one, made possible by the development of new technologies, and the design-driven, related to the creation of new meanings conveyed by the product inside a determined cultural and social context. The thesis is that there is a radical innovation - and not only incremental - in both innovation models; in other words, also design-driven innovation, though through a different path with respect to technological innovation, is able to confer a differential value to products, comparable to that produced by "radical" technological innovation.

According to this approach, design-driven innovation takes place when the product is able to transform deeply the meaning that the object has for clients, in terms of values, personality, identity and in statuses associated to the product itself. Therefore, design-driven innovation acts on product characteristics, as well as on the social and cultural context, in the context of use in which the object acquires a meaning.

Note

14) R. Verganti (2002), "Gestire l'innovazione design-driven" in F.Zurlo e altri, (2002), Innovare con il Design, Il Sole24Ore, Milano; R. Verganti (2003), "Design as brokering of languages: Innovation strategies in Italian firms", Design Management Journal, vol 13, n. 3, p. 34-42; R. Verganti (2006), L'innovazione guidata dal design, Harvard Business Review (ed. italiana), dicembre; J. Utterback e altri, (2006), Design-Inspired Innovation, World Scientific, New York. The mentioned studies illustrate in detail the case of the lighting devices field, that introduces high-quality companies concentrated in the Milan area, besides some design-focused companies belonging to other industrial sectors, such as Kartell, Alessi, etc.

Therefore, design-driven innovation intervenes on the social and cultural context, modifying it. More in depth, it is interwoven and generated inside the design discourse, that is: the cultural and social context external to the company, design schools, other companies, professional community of designers. Therefore, in the logic of design-driven innovation, the design discourse has a role and a function analogous to the one played by R&S laboratories or specialized scientific centres, in the context of technological innovation: social fields and environments in which objects are manipulated as well as their meanings, their sense is explored, they are tested, experimented, and new solutions are found. Inside this articulated and dynamic environment, through a constant exchange between the different actors, fashions, tastes, languages and consumer trends are elaborated.

The designer is the "gatekeeper" between the company and the external cultural environment; he participates directly and actively to the "design discourse", being also a part of it, and this allows him to anticipate and influence new trends.

6.2 Design-driven innovation: involved factors

The hereby illustrated research has shown how, besides a large number of cases of "opportunistic" use of design as a competitive complementary or secondary asset, there are other cases - which are few, but very significant from the qualitative point of view - in which design plays indeed a strategic role, able to modify the meaning of objects in daily life. In this, they are quite near to the examples mentioned by the researchers of the Politecnico di Milano as paradigms of design-driven innovation.

In this analysis, we won't return on the popular cases of Alessi, or Fiat (e.g. the launch of the new 500), which are two typical Piedmontese cases. We will try to examine two smaller cases instead, few or not at all known to the public, already mentioned in the box in Chapter 3: Ritmonio faucets and B.Lab Italia (with the support of Adriano Design).

Design and productive process. A first identified element, which is necessary for the activation of this kind of innovation processes, is the involvement of the competences of design at the basis of the conception and development process of the product itself. Only using the design in a strategic way, and not only in a perspective of product "styling", it is possible to start a design-driven innovation process. As it will be seen, an important design contribution is expressed in the phases of product ideation and planning, but it goes beyond, also influencing other hard dimensions, ranging from technology to the choice of issue markets and target consumers, including internal organization as well.

Design internalization vs externalization.

Product innovation is the central component of the process design-driven innovation. At this level, a decisive element is the ability of the designer to create a vision with respect to possible future partner-cultural sceneries and to influence such sceneries through the creation of new meanings associated to products. The designer is able to play an innovative role with respect to the product, which is proportional to his involvement in the design discourse, dynamically articulating in external environment. In this sense, the organizational models adopted by the companies to access design competences are very important. As already mentioned, in the Piedmontese companies a "mixed" model prevails; internal organizational structures (typically style centres) are placed side by side to groups of external consultants, and are often in competition with them.

Design-driven innovation as a meaning innovation.

The result of the "radical" type of design-driven innovation it is often a change of the meaning socially attributed to an object (or a service). As for the examined cases, this is evident for Teckel, the football table produced and commercialized by B.Lab and planned by Adriano Design. The vision of the product, as described in the box in Chapter 3, consists in turning the football table, an object of humble origins, into a luxury furniture object (hotel, refined residences, etc.), intervening on product materials and general design.

Therefore, in the case of Teckel, meaning innovation is operated without any substantial change of the original functionalities of the object, but exploiting the company's technical and productive competences (glass processing).

Contrarily, in the case of Bianconiglio by Ritmonio, design innovation is strictly associated to a remarkable functional innovation of faucets. Even in this case, the elements of meaning, constituted by the idea of dematerialization of the supply structure and by the creation of a faucet as "water source", constitute the cornerstone concept around which they are produced and new functionalities emerge (ability to communicate with a system of domotics through a tactile and visual interface, possibility to monitor, regulate and rationalize water resources) and new technical-productive solutions (radical revision of water distribution system).

Technological, market and organisational design-driven innovation.

What characterizes the analyzed design-driven innovation cases is the fact that innovation acts as a "start" factor ("trigger") with respect to other innovation factors (technology, market relationship, and sometimes even organizational and internal management processes). The

Ritmonio case is paradigmatic. Here, a designer who is trusted by the company management "invents" a different way of valorising the technical-productive assets of the company creating a new line of products. Consequently, a company that originally produces components for heating / cooling plants (B2B field) develops a new business line, that is successively internally structured into a new organizational division, devoted to faucets (typical B2C business). At this point, three observations of great importance to our purpose must be made:

- Both businesses insist on the same base of technical-productive competences, especially related to metal and steel processing; it is on these competences that designer Vercelli grafts the design-intensive faucet business
- Innovation produced in Ritmonio has a remarkable impact on issue markets: a B2B business is placed side by side with a B2C one
- Finally, all of this has remarkable consequences on the organizational and management model, and on company culture.

As for the first point, the innovation of Ritmonio can be defined as a process of exploitation of technological assets, or rather - lately - of the competences embedded in the company's productive culture and in personnel's technical know-how. Personnel acquires a new direction, but not radically different, built on the same assets and nevertheless directing them in a new direction. A brilliant example of exploitation of what the company "knows how to do" and "is able to do" with the already mastered technologies and know how.

As regards the market, the described innovation is so radical from the company's point of view that it opens a new market, in which - thanks to the incorporated design contents for the products of the faucets division - new and ample valuable creation spaces are opened, thanks

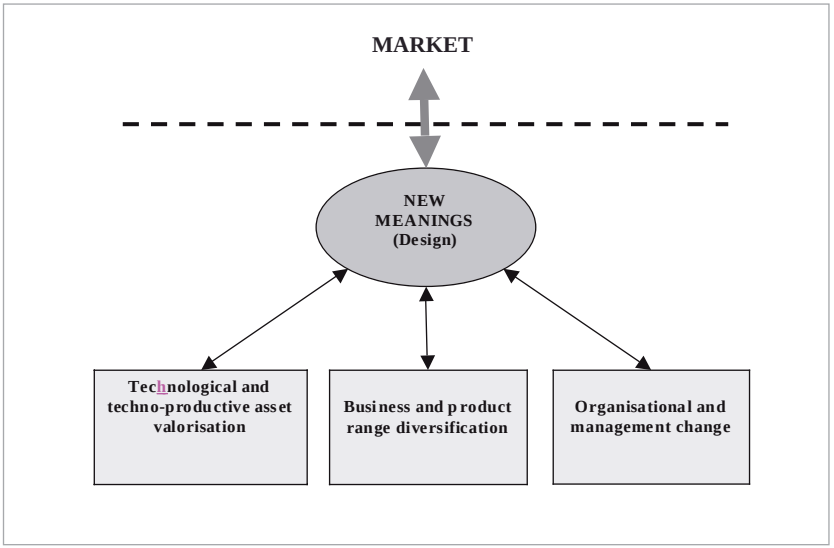
to more "field-specific" products, giving an important contribution to the development of company business.

Finally, the organizational and management dimension. It would be too simple to state that the innovation brought on this plan is simply a passage from a simple form to a divisional one. Actually, the change is far deeper. It is sufficient to think about what it means for a company, used to sell its products to other companies, to pass to a commercial process directed to the final consumers; about the need to create a new sales network; about the need to develop a branding and visibility process imposing the new brand and products on the market; and, finally, about the opening to new technologies as those of domotics to feed the radical innovation of the product "faucet". All of this has required a maturation of the company and an evolution of its very own technological, productive and management culture, that is not limited to organizational superficial changes.

In conclusion, the example of Ritmonio seems a good representation of the relationship that links design-driven innovation and technological, market and organizational innovation. It is interesting to notice that, in the examined case, all four types of innovation coexist, even though with different degrees of intensity. Fig. 36 sumps up all of this in a scheme in which the primary role of the design-related innovation is strongly put in relief.

Figure 36

Key factors of design-driven innovation process



Another element deserving to be underlined is that design-related innovation not only plays the role of trigger but also of "drawing" with respect to the other types of innovation: it creates the conditions for an exploitation of the technical-productive assets in an innovative way, that brings to the opening of new markets and pushes the inside structure (organizational-management) to change. Doing all of this, it transforms the company, conferring her a best competitive positioning than in the past. To paraphrase the bright metaphors used by Salvatore Rossi, Ritmonio has first made a "horse move" operating a "sector trespass" to a higher-value sector; successively, having strongly absorbed the lesson of the design, it has become able to develop

products autonomously establishing themselves on a difficult market, and therefore passing to a strategy of "queen's attack"

In conclusion, the analyzed model of innovation strives to "dig" inside them term design-driven, perhaps aiming its attention more on "what is driven" that on design itself. Therefore, the other dimensions of innovation are driven by design: technology, no more related to metal processing only, but also to electronics, sensors and domotics (see the last products of Ritmonio bath division, such as the previously mentioned "Bianconiglio"); the segments of reference markets; management and organization. Product design connects all of these elements, being the true driver of innovation.

6.3 Design and knowledge areas

Going from the company level - at which the relationship between design and innovation has been analysed - towards the territorial dimension, the question is the following: what type of "industrial aggregation" is the analyzed one? And which are the most appropriate policy actions to promote its development?

We won't tackle the discussion on policy lines in this context, but it is evident that this perspective is of great interest for a Corporate body such as the Chamber of Commerce, in the moment in which phenomena and processes of territorial aggregation are observed. We will only offer some interpretative lines that may help to understand the nature of the pheno-

menon, leaving to policy makers the honour and the burden to elaborate action plans aimed at development.

Our thesis is that the design-intensive Piedmontese aggregation, about the half of which is concentrated in Turin and its province, presents characters which are very similar to those of the innovative districts which have been so much focused on during last years, in terms of policy, to re-launch innovative processes in the Italian industry. The most popular are intensely characterized by a high-tech production, so much that the term "technological districts" has been created to define them, and used as synonym of innovative districts. Though technology in our context plays a limited role, surely secondary and not of primary innovation driver, nevertheless the form and the dynamics of the territorial aggregation of enterprises can legitimately attributed to that model, or, more precisely, to the model of the intensive knowledge districts developing in the knowledge economy.

What are the innovative districts? A recent study, based on the analysis of eight European case studies, provides useful elements to recognize them and to understand their evolution dynamics, also for policy purposes. Therefore, an innovative district, according to this study, it is characterized by the following elements:

- First of all, it is a territorial aggregation of knowledge-based companies, usually belonging to a same productive process and with competences focused on some fields of experienced knowledge - often scientific and technological knowledge - of which the territory is rich and reputed at an international level;

- The composition of the local entrepreneurial tissue is characterized by the dominance of small and micro-companies, very dynamic, that were born, develop and die with a rapidity that postpones to Darwin's selection processes (technological regime "Schumpeter I")
- In this aggregation, experienced knowledge plays a remarkable role, in the sense that it constitutes the main "productive factor". It can be partly encoded, but above all it is mastered by experts and scientists operating on the territory (tacit knowledge)
- Such experienced knowledge, fundamentally tacit, circulates inside the territorial system, thanks to exchange and networking among people, the movements (intense) on the market and creation processes for new entrepreneurship (knowledge spillover)
- The direct consequence of the central role of knowledge as primary productive factor is reflected, in the territory,by the presence of one or more universities of international level, often - but not necessarily - of scientific or technological character, and of a series of specialized scientific centres of great dimensions, often public. In the almost totality of the cases, such centres of excellence perform two key functions: a) they develop the experienced knowledge through research activities, both fundamental and applied; b) they transfer this knowledge to the new generations through remarkable activities of high formation. This obviously occurs in the case of universities, but almost always also in the case of high-level research centres, operating side by side with highly-specializing formation (for instance, aimed at PhDs or post-doc) to the research activity
- The mechanism of competence reproduction plays a remarkable role, since it feeds particularly brilliant knowledge-based work markets, from which companies draw the majority of research personnel.

There are structured connection mechanisms, perfectly working, between companies and university / specalized centers; the main connection mechanisms are research and development projects that companies largely assign to the centres of excellence and work experiences and internships, as well as the introduction on commissioned research projects of the company personnel in specialist formation (PhDs, post-doc etc.). These last mechanisms, that "put in movement" people with excellence knowledge, represent a very important form of meeting between companies and university, and they strongly feed the dynamics intensive-knowledge work markets.

In dynamic terms, these agglomerations that we call innovative districts, of which we have synthetically recalled the essential characters, have their own "life cycle", made of birth, incubation / latency (often prolonged), development, maturity and decline; such life cycle develops within decades, at times it is based on one century or one century and a half of history; the agglomeration is built therefore slowly, for progressive accumulation of incorporated knowledge in the "structures" that bring it (universities, high-tech or intensive knowledge enterprises, scientists, foundations, etc.). The phase requiring more time than the others is incubation, in which economic growth proceeds very slowly[15].

Note

15) The above mentioned study documents innovative districts in which the phase of incubation has lasted even one century.

Once we overcome a certain dimensional threshold - changing from sector - the district begins to grow at an exponential speed, companies develop, income grows along with marginality levels and the district in its complex becomes "visible" on the territory in statistic terms (before this threshold, some business cases that manifest evolutionary and break-up trends are evident, but in aggregated terms, there are no marked evidences). In the phase of development - the triggering phenomena which are analyzed by the mentioned book - it is the general wealth of the territory to grow, dragged by knowledge-intensive production characterizing it and they become the district "world ambassadors".

The European cases are known: from Cambridge and Oxford to Berlin, Karlsruhe, Tolosa, Stockholm, Copehangen / Øresünd and many others that more and more decidedly became areas of concentration of the new knowledge economy.

All those mentioned are science-based innovative districts, in which the growth driver is the development of innovative technologies beginning from a base of high specialization of local scientific knowledge. Our thesis is that these districts constitute a sub-system of a wider phenomenon: that of the knowledge based districts or "knowledge territories" characterizing knowledge economy in its widest meaning[16].

When design aggregation characteristics in Piedmont are analyzed, similar elements overcome differences:

- There are few but qualified places devoted to the formation of new generations of designers, that keep on growing as the design market becomes larger

Note

16) Also experts such as Verganti, who underlines the "territorial aggregation" factor, typical of the design sector development of the design sector.

- There is a lively knowledge-based "work market", fed from semi-community processes and of professional communities that links all field operators
- An increasing number of companies tends to internalize this type of competences to use it as a competitive differential factor, and, at the same time, continues to purchase services from local providers (design and architecture professional agencies, etc.); doing this, it increases the overall system competences.

On the basis of these indicators, it appears evident that what is being observed is the growth of a "system-area" that presents all the characters of the innovative district (for the time being auto-fed, with all the difficulties of the case, without the strong supports from local authorities that characterize - for instance - the experience of the European innovative districts). Its current life cycle phase seems to be still that of incubation, but it seems there are no doubts on the nature of the phenomenon. Policies must take this into account to choose actions and initiatives, also concomitant and following to Torino World Design Capital 2008, representing a great opportunity of visibility and development for this universe.

Design-related economy in Piedmont

Enclosures

ENCLOSURE 1: METHODOLOGICAL NOTES

The illustrated investigation is based on the reconstruction of a widened investigation universe, drawn by the following sources:

- Chamber of Commerce Regional Business Register
- Infoimprese
- ADI member list
- ANFIA member list
- ANETA member list
- "Piemonte Torino Design" exhibition participant list
- "AIDA" database
- Ulisse database (Chamber of Commerce of Torino)

Therefore, the reconstruction of the universe has been integrated by focused searches on the internet and on other public databases, for key words (e.g. White Pages). This last type of

integration has proven particularly useful for the identification of smaller economic operators economic, not constituted in form of company (architecture or design agencies, partnership agencies, etc.).

The identifies universe underwent a selection looking for companies and economic operators clearly connected to design. An esteemed universe of 770 companies, of which details have been retrieved, has been thus obtained.

Information gathering has involved all the 770 companies and the economic subjects of the esteemed universe, and has been performed through telephone survey with CATI (computer aided telephone interview) technique. This technique has allowed to reach and interview 416 companies; the analyses contained in the report refer to these ones.

For what specifically refers to the data on the number of employees and to income, necessary to make an estimate of the financial weight of design-related economy, a wider information collection has been performed, on the whole known universe (770 companies). This has been done primarily working on databases (Ulisse and AIDA databases) and operating a focused search on company websites. Thanks to this additional search, it has been possible to retrieve the data related to the number of employees and, in some cases, to income. In this way, these two specific information have been retrieved (but not the other information picked up in the CATI interviews) for 208 more companies, reaching to a total of 624 enterprises for which further information is available with respect to the registry.

The operated estimates have primarily concerned income data, for which a multiplier of 100.000 of yearly income per employee has been used: by doing this, the estimated income

included in the report has been obtained. The number of employees was easier to detect, through the consultation of the above mentioned databases.

Moreover, the investigation has involved 41 experts and company operators from the Piedmontese design sector. The form of involvement has been represented by 6 workshops of the duration of about 4 hours, one for every sector, held between May and July 2007. The list of the experts and involved economic operators is included in Enclosure 2.

ENCLOSURE 2: LIST OF EXPERTS INVOLVED IN THE SURVEY

- Alessandro Cimenti (Studio ATA - Interior Design)
- Alice Capello (Autopsie vestimentarie - Fashion Design)
- Andrea Filippi (Design Gang - Industrial Design)
- Andrea Mainini (Research Center Lancia-Alfa Romeo-Fiat - Industrial Design Automotive)
- Andrea Righetti (Profilo Design - Industrial Design)
- Angela De Marco (Politecnico of Torino - Cultural and Territory design)
- Armona Pistoletto (Foundation Pistoletto City of Art - Cultural and Territory design)
- Carlo Gaino (Synthesis Design; docente Politecnico di Torino - Industrial Design Automotive)
- Christian Villa (Civico 13 - Cultural and Territory design)
- Daniele Alberti (Altrimenti - Graphic design and Communication)
- Davide Adriano (Adriano Design - Industrial Design)
- Davide Vercelli (Rubinetterie Ritmonio - Industrial Design)

- Emanuela Di Ciompo (freelance - Fashion Design)
- Federico De Giuli (Cluster. AB+ - Cultural and Territory design)
- Franco Amato (Pininfarina S.p.a. - Industrial Design Automotive)
- Fulvio Fantolino (F&F design; docente IED - Industrial Design Automotive)
- Gianluca Macchi (UAU Design - Interior Design)
- Giorgio Olivero (Todo - Graphic design and Communication)
- Giuseppe Accardi (Testaweb - Graphic design and Communication)
- Laura Accornero (freelance - Fashion Design)
- Laura Milani (IAAD - Industrial Design)
- Livio Milanesio (Domino, IED - Graphic design and Communication)
- Lowie Vermeersch (Pininfarina S.p.a. - Industrial Design Automotive)
- Luca Ballarini (Bellissimo, Label - Graphic design and Communication)
- Luca Fioravanti (Fioravanti - Industrial Design Automotive)
- Marco Bernini (Bernini Lab - Interior Design)
- Marco Cassinera (IED - Graphic design and Communication)
- Marco Rainò (Brh+ - Interior Design)
- Marco Stefanelli (The boxer design - Graphic design and Communication)
- Maria De Ambrogio (IED - Fashion Design)
- Mario Saroldi (Saroldi design; docente IED - Industrial Design Automotive)
- Michele Bonino (Studio Marc - Interior Design)
- Monica Mazzucco (Avventura Urbana - Cultural and Territory design)
- Paolo Maldotti (Archiland Studio - Interior Design)

- Riccardo Penna (Ermenegildo Zegna - Fashion Design)
- Roberto Angiono (Autostudi - Industrial Design Automotive)
- Roberto Necco (Elyron - Graphic design and Communication)
- Simone Muscolino (Interaction Design Lab - Graphic design and Communication)
- Ugo Castagnotto (Carma Design - Interior Design)
- Walter Camagna (Uda - Interior Design)
- Walter Dang (Atelier Walter Dang - Fashion Design