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DESIGN DRIVEN INNOVATION: INNOVATION STRATEGIES ADOPTED IN THE FURNITURE INDUSTRY

THE COMPARISON BETWEEN TWO LEADING COUNTRIES: ITALY AND SWEDEN

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ABSTRACT

This thesis aims to compare the design innovation process in the furniture industry in Italy and Sweden, focusing the attention on the strategic approach towards innovation, on the phases of the innovation process and on the internal and external organization of companies involved in the occurring processes.

After a theoretical part about the strategies of innovation, the innovation process and its organization, a reference model about Italian furniture industry has been developed, that had to be compared to the Swedish one. The Italian furniture industry has been analyzed referring to the already known case studies and scientific articles about it and it has represented the starting point for the research. After that, case studies about some furniture companies in Sweden have been presented and a reference model has been elaborated, in order to compare it with the one regarding the Italian reality. The main topics of the analysis and comparison have been the design innovation process (and in particular the meta-project phase and the new product development) and the internal and external organization of those companies carrying it out. Furthermore, the role of the designer and of the other external actors of the innovation process have been identified.

The most relevant commonalities between the two businesses are represented by the fact that both Italian and Swedish furniture companies rely on external designers for their innovation process and they also are strictly related to different other suppliers of the supply network which allow them to use technologies usually exploited in other industries. Additionally business clusters are fundamental for developing new projects in a unique and exclusive geographical context.

The first important difference concerns the strategic approach towards design innovation. Italian furniture companies carry out a radical innovation strategy, Swedish ones an incremental innovation strategy. Whereas Italian furniture approach is a knowledge research process, the Swedish one is defined creativity research process. Secondly, Italian furniture companies base their own innovation process on Design and Technological researches, that come before the concept generation process and they aim at generating new meanings and languages. Swedish furniture companies do not have a well structured meta-project research and their own innovation process basically starts with the concept generation phase. The company is interested in picking up only technical

solutions and concept ideas from the network of interpreters of the design discourse, and not in elaborating radically new socio-cultural models and product languages.

Moreover, Italian furniture companies rely on Design Driven Laboratories (DDL) and on the active participation of the designer in the first processes for the upstream phase of the innovation process. Those laboratories are independent identities from the furniture company and have their own internal organization. Swedish furniture companies, instead, elaborate every phase of the innovation process inside the company. They rely on the Design Council for the elaboration of the design concept and its components are internal members of the company and are exponents of the different departments. The designer has an active role only later on during the concept generation phase and, above all, during the new product development phase. Whereas in Italy they often build up a close and exclusive relationship with the company, in Sweden their collaboration is not exclusive. From this latter difference some important managerial implications in the management of the relationship between company and external designers and in the criteria of their selection have been derived.

ABSTRACT

Questa tesi si propone di confrontare il processo di innovazione di design nel settore dell'arredamento in Italia e Svezia, focalizzando l'attenzione sull'approccio strategico verso l'innovazione in entrambe le realtà, sulle fasi del processo di innovazione e l'organizzazione interna ed esterna delle aziende analizzate.

Dopo una prima parte teorica riguardante le diverse strategie di innovazione, il processo di innovazione e la sua organizzazione, è stato sviluppato un modello di riferimento sull' industria dell'arredamento italiana, da confrontare con la realtà svedese. L'industria italiana è stata analizzata facendo riferimento ai casi studio e articoli scientifici già a disposizione in letteratura e questa analisi ha rappresentato il punto di partenza per la ricerca. Successivamente sono stati presentati casi studio riguardanti alcune aziende dell'arredamento svedese ed è stato elaborato un modello di riferimento, al fine di confrontarlo con quello riguardante la realtà italiana. I temi principali affrontati nell' analisi e nel confronto sono stati il processo di innovazione di design (e in particolare la fase di meta-progetto e lo sviluppo di nuovi prodotti) e l'organizzazione interna ed esterna delle aziende. Inoltre sono stati identificati il ruolo del designer e degli altri attori esterni del processo di innovazione. Le analogie più rilevanti tra le due imprese sono rappresentate dal fatto che sia le aziende italiane che svedesi si affidano a designer esterni per il loro processo di innovazione; inoltre tali aziende sono strettamente legate a diversi fornitori facenti parte del supply network che consentono loro di utilizzare tecnologie sfruttate usualmente in altri settori.

La prima importante differenza riguarda l'approccio strategico nei confronti dell'innovazione. Le aziende di arredamento italiano attuano una strategia di innovazione radicale mentre quelle svedesi una strategia di innovazione incrementale. In secondo luogo, le aziende di arredamento italiane analizzate basano il proprio processo di innovazione sulla ricerca socio-culturale e semantica, con lo scopo di generare nuovi significati e linguaggi. Le aziende svedesi non dispongono di un processo di ricerca ben strutturato e il loro processo di innovazione comincia sostanzialmente con la fase di concept generation. Le aziende sono interessate ad applicare solo le soluzioni tecniche provenienti dalla rete di interpreti del design discourse, e non ad elaborare nuovi modelli socio-culturali radicali e nuovi linguaggi di prodotto.

Inoltre, le aziende di arredamento italiane contano su Design Driven Laboratories (DDLs) e sulla partecipazione attiva del progettista nelle fasi a monte del processo di innovazione. Tali laboratori sono entità autonome rispetto alle aziende di riferimento e hanno una propria indipendente organizzazione interna. Le aziende di arredamento svedese, invece, elaborano ogni fase del processo di innovazione all'interno dell'azienda. Si affidano al Design Council per l'elaborazione del design concept e i sui componenti sono membri interni alla società, rappresentanti dei diversi dipartimenti in cui l'azienda si articola. Il designer ha un ruolo attivo soprattutto nella fase di sviluppo prodotto. In Italia spesso si instaura un rapporto stretto ed esclusivo, mentre in Svezia il rapporto tra designer ed azienda non è esclusivo ed è legato primariamente al progetto contingente su cui si concentra il processo di'innovazione. Da questa differenza, infine, sono state ricavate alcune importanti implicazioni manageriali nella gestione del rapporto tra azienda e designer e nei criteri scelti per la selezione di questi ultimi.

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It would not have been possible to write this master thesis without the help and support of the kind people around me, to only some of whom it is possible to give particular mention here.

Above all, I would greatly like to thank my supervisors at Politecnico di Milano Professor Roberto Verganti and Professor Claudio Dell'Era for the continuous support given to me during this thesis work. Their presence has been a fundamental milestone for the elaboration of this paper and they have represented a steady professional and moral support throughout the entire project.

Since this thesis work has firstly been elaborated in collaboration with the Royal Institute of Technology (KTH) in Stockholm, I would like to thank my supervisor at KTH Professor Staffan Laestadius. His advices for the choice of the main topics of the thesis and of the companies being interviewed during the research process have represented the right guide for this work.

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For any errors or inadequacies that may remain in this work, of course, the responsibility is entirely my own.

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EXECUTIVE SUMMARY

This first introducing chapter figures out the objectives of the thesis and the problem setting concerning the final results of this work. Afterwards the research methodology is presented and finally a brief summary of the conclusions and managerial implications is stated. The idea of this thesis work was born in Sweden during my exchange program at the Royal Institute of Technology (KTH) in Stockholm from August 2009 to June 2010. Attending a course in Innovation Management, topics concerning design-driven innovation have been discussed during the academic classes held by Professor Staffan Laestadius (KTH) and also presented by the guest visiting Professor James Utterback (MIT, Boston). The idea to compare Italian and Swedish approaches towards design innovation spontaneously came up in my mind. After further investigations the furniture industry has been chosen as a focus theme of the research, being one of the most representative businesses where design-innovation actually takes place both in Italy and Sweden. In the following paragraph the executive summary of the work is presented, according to the scheme already mentioned.

1.1 OBJECTIVES AND PROBLEM SETTING

The purpose of the thesis is to compare the design innovation process in the furniture industry in Italy and Sweden, focusing the attention on the innovation process and on its internal and external organization. Italian and Swedish furniture industries might be considered excellence and top-class realities in their own business and even internationally. Design companies involved in the furniture industry in Italy and Sweden serve a cliché market, with their focus on innovation and on semantic and technological research. The strategy associated to this industry sector addresses an exclusive market by producing high level quality products. Starting from the consideration that companies inside this industry both in Italy and Sweden definitely are successful companies, the objective of this thesis is figuring out whether they apply different strategies for what concerns the concept of innovation, the company's strategy and, above all, the innovation process and its organization. Indeed, the different functional and aesthetic characteristics of their products, even if successful, imply different ways to conceive innovation, to interpret socio-cultural and technological research, to apply the innovation process and organize it, both from the internal and external point of view. The question is: "might the differences in functionality and forms of furniture products be influenced by the innovation process and by the way it is organized?". The already known reality of the innovation process in the Italian furniture industry has made possible to find out a reference model, that had to be compared with the one in Sweden. The elaboration of the reference point model for the Italian furniture industry is based on case studies about Kartell and Alessi, two of the most representative companies of the Italian furniture industry. The elaboration of this model has been based on secondary information. After the definition of study research questions, four case studies about furniture companies in Sweden have been presented, and the main topics of those case studies have been the organization and the design innovation process. The task has been finding out a parallel model for Swedish furniture industry, in order to be able to set a comparison and finally figure out a set of managerial implications and organizational solutions. Consequently, after having analyzed each particular company, a model has been elaborated, and commonalities and differences with the one regarding the Italian furniture industry have been found out. The main topics been analyzed are the strategies associated to the concept of innovation, the innovation process divided into meta-project phase and new product

development. Furthermore, the internal organization of the process, such as the actors involved in it and how this is linked to the external organization. Moreover the role of the designer and of other external actors of the innovation process have been analyzed, in order to develop some managerial implications linked to this topic.

Coming to the disposition of the thesis, after the first introducing chapter, it continues with the description of the theoretical background about innovation and, in particular, design-driven innovation. While chapter 2 gives a general background of the different innovation strategies (among them technology push, market pull and design-driven innovation), chapter 3 focuses on the organization of the innovation process, both internal and external. In chapter 4 the research methodology is illustrated, the way the interviews have been carried out and the main topics illustrated is explained. Chapter 5 presents a reference point for the Italian furniture industry. Basing the observations on the already known case studies about Kartell and Alessi (two of the main furniture companies in Italy) a model about them has been created. Furthermore, chapter 6 presents four case studies of Swedish furniture companies. The focus of each case study has been the design innovation process, the actors involved in the meta-project phase and in the new development process, including also some examples of products actually produced by the firms, in order to give a concrete view of the design innovation process carried out within the firm. Chapter 7 presents a comparison between the model regarding design innovation process occurring in Italian furniture companies and in Swedish ones, aiming at finding out commonalities and differences. Chapter 8 finally presents the conclusions of the work, the managerial implications and limits and follow-ups of the thesis.

1.2 RESEARCH METHODOLOGY

In order to fulfill the objectives and build up a solid reference point for the further research, a research process has been followed (Figure 1 Outline of the study). Firstly a literature review has been necessary. Scientific articles and texts concerning innovation, design-driven innovation in the furniture industry and corporate organization have been collected in order to gather information and build up a consistent knowledge about this topic. In particular it has been crucial to acquiring knowledge about the new theory of design-driven innovation, actually applied among Italian furniture companies and in so

doing the comparison with the Swedish furniture industry has been possible. According to the literature analyzed, research questions have been formulated in order to gather information about the Swedish reality. At the same time the reference point about the Italian furniture industry has been elaborated. The main topics that have been faced have surely been the ones analyzed in the previous section of literature review, with the focus on process and organization of innovation. During the interviews held by the four Swedish furniture companies two different kinds of personnel have been interviewed, designers on one side and product developers and production managers on the other. Afterwards data collected during the interviews have been analyzed and illustrated through the presentation of the case studies. A model about innovation in Swedish companies has been elaborated, and it has been compared to the corresponding one for the Italian furniture companies. After that, results and conclusions have been presented.

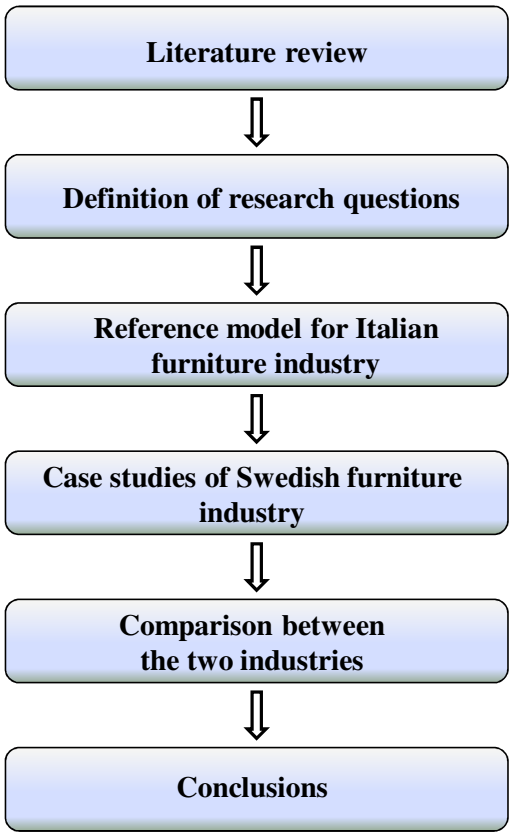

Figure 1 Outline of the study

At the beginning literature about innovation and design-driven innovation has been collected in order to gain a noteworthy knowledge about these topics. The main topics

analyzed are concerning the strategies of innovation, mainly found in academic texts. Among them design-driven innovation strategy has been deeply analyzed reading the book “Design-Driven Innovation” by Roberto Verganti. After that, in order to collect information about the Italian furniture industry, two case studies about each one of the two companies Kartell and Alessi have been read and further analyzed. Additionally, many scientific articles about Italian furniture companies have been read through and after this phase the main topics and characteristics regarding Italian furniture companies have been identified. The literature analysis has been the theoretical support for presenting the reference model about Italian furniture industry, for the presentation of the Swedish case studies and also for the final comparison, the identification of the final results and for deriving the managerial implications in the end. Indeed, literature analysis allows the researcher to connect the research data directly gathered during the interviews and the theoretical models illustrated in the scientific articles and also to guide the interviews and select proper questions (Voss et al., 2002).

After the literature review a list of questions to be asked to the respondents have been completed. The questions have been divided into three sub-groups. The first one aims at finding out what are the similarities and differences between Italian and Swedish furniture companies in the strategic approach towards the innovation process and the concept of design research and innovation actually carried out by the company. The second group of questions regards the individuation of similarities and differences between Italian and Swedish companies towards the structure of the innovation process and finally the third group aims at figuring out commonalities and differences between Italian and Swedish furniture companies in the organization of the innovation process, both from the internal and external point of view. Moreover some questions are focused on the relationship between the company and the external partners (suppliers, manufacturers and all the other members of the design discourse), since one of the purpose is to find out how the company is inserted into the production environment and what are the limits of those relationships. Obviously the degree of detail of the answers have been graduated according to the managerial sensibility shown by the respondents.

After that, a reference model for Italian furniture industry has been formulated by analyzing two of the greatest and successful Italian companies applying design-driven innovation (Kartell and Alessi) that have also been key examples for the formulation of the theory regarding design-driven innovation.

Following the definition of the research questions and of the reference point model for the Italian furniture industry, case studies about Swedish furniture industry have been investigated. The research carried out is qualitative and it is based on a theory study and followed up by data and information collection in the form of interviews in four organizations (Lammhults, Offecct, Blå Station and Mitab). The selection of case studies has been based on suggestions coming from my supervisor at the Royal Institute of Technology in Stockholm (KYH) professor Staffan Laestadius, according to the business addressed by the companies and on the topics to be analyzed during the research. The first company to be chosen was Lammhults, since it is one of the most representative furniture companies in Sweden, actually competing internationally with Kartell. The other companies have been chosen according to a specific criterion, the "literal replication" according to Eisenhardt (1989) and Yin (1994), which asserts that the cases following the first one should be selected so that they predicts similar results. Interviews have been held with designers and product managers in the four Swedish furniture companies. Indeed, the prime source of data in case research has been structured interviews. Other sources of data have been personal observations, informal conversations, attendance of meetings and showrooms. The selection of respondents was related to their contribute to the design innovation process inside their own companies and at the same time their availability. In this research multiple respondents have been interviewed, among whom product developers have given the most detailed overview of the innovation process and of the organizational setting of the company. Designers often have given more information about the different phases of the innovation process and their relationships with the other external suppliers.

After gathering the interviews data, general concepts and theories related to every single case have been elaborated. The process of generalization and modeling has been a crucial phase as every step has to be tested among all the case studies. Usually a relationship between data and theory is shown by the case evidence, but other times it is revised or it is not definitely accepted since it is not present in every single case. The closure of the research has occurred when it has not been likely to be added cases because of data saturation and even because similar and repetitive characteristics among the already analyzed cases have been noticed. Indeed, the data analysis about Swedish furniture companies collected during the first steps has shown that almost every single case is

characterized by many common features. This is the reason why just four case studies have been considered enough for this research.

1.3 RESULTS AND CONCLUSIONS

The first topic object of the comparison between Italy and Sweden has been the strategic approach towards design innovation. Whereas in Italy furniture companies carry out a radical design innovation process and it can be defined as a knowledge research process, Swedish furniture companies apply an incremental innovation process and it is based on technical creativity and technological research. So Italian design innovation companies apply a proactive approach towards the socio-cultural models, trying to influence the way customers perceive the projected product. In Sweden the approach is basically a user-centered approach, where customer needs are the starting point of the whole innovation process. Therefore, whereas in Italy the innovation process is focused on socio-cultural research (otherwise called design-research), which implies a generation of new meanings and languages, and technological research, in Sweden the focus is on the concept generation phase, such the operative part of the meta-project phase and on product development phase, where sharing technical solutions among the actors of the design discourse covers a much more important role than sharing knowledge about semantic dimensions of products and about socio-cultural topics. Focusing the attention on the downstream phase of the innovation process, whereas in Italy the Design fair is seen as a market test, in order to get feedback from visitors and marketers about the prototype that has being developed (since the product introduces a radical innovation in meanings and technologies), in Sweden the Design fair is seen as a simple presentation of the final product, which then is soon placed in the market. For what concerns the internal organization it must be said that whereas in Italy the entire meta-project phase is carried out within organizations (Design Driven Laboratories, DDLs) that are independent from the furniture company, in Sweden the entire innovation process (from the design and technological research to the final product development) is carried out inside the company. In particular, the internal organization leading the entire process is called Design Council and it is characterized by multidisciplinary competences, since it groups together representatives of each organizational department. Instead, in Italy DDLs are composed by mono-disciplinary competences, it groups together R&D personnel who are

experts of products technology, they carry out the relationship with the external designer and their competences are exclusively linked to the research dimension. The final topic analyzed in the comparison is the external organization. Whereas in Italy the DDL nurtures the relationship with external suppliers and with designers (network coordinated by the DDL), in Sweden the designer is the one who looks after the relationship with external suppliers and producers (network coordinated by the designer). The designer in Italy is just seen as socio-cultural researcher, whereas in Sweden she is a technical drawer, who also plays the role of technological gatekeeper.

Italian and Swedish furniture companies also have different ways to manage the relationship between company and designers and different strategies for what concerns the selection of the right design consultants. Among Italian companies designers act as brokers of knowledge, such as strategic gates that facilitate a firm access to the design discourse and as an active connection between different socio-cultural worlds and industries. Thus, designers collaborating with Italian furniture companies definitely have to be able to gather knowledge from the discourse, observing and analyzing inputs coming from the market as well as from the rest part of the actors involved in the innovation process. Their ability of collecting knowledge is considered much more important than their technical creativity and their tools used in the operative processes. In Italy there is also the tendency to collaborate with foreign designers in order to combine and integrate the brokering of knowledge on both local and global contexts. Moreover, among Italian companies the designer is seen as an internal resource and consequently the collaboration between her and the company is a long-term relationship. Consequently, designers' selection should also be based on the correspondence between designers' values and the ones of the company. This process of identification between company and design consultants also entails the establishment of personal relationships between designers and companies' leaders. In opposition to that, designers collaborating with Swedish companies, being especially involved in the late and operative phases of the innovation process, are considered fundamental for being brokers of technologies, they are supposed to establish connections with industrial manufacturers and with every interpret that might give its own contribute to provide innovative technological solutions for the developing products. Being considered technological drawers much more than socio-cultural researchers, their technical tools and creativity are necessary conditions for being

considered suitable for the Swedish furniture business. Most part of the production processes are performed outside the company, outsourced to other suppliers who are usually located in the same geographical area. So the role of the designer in coordinating the network of suppliers becomes strategically important both for the technological research in the upstream phase of the innovation process and, especially, in the late downstream phases. The evident difference between the two ideal profiles of designer leads to the conclusion that whereas in Italy furniture companies request designers with the profile of an architect, Swedish furniture companies need industrial designers. This difference is of course linked to the different role covered by the two types of consultants. Whereas the architect is much more sensitive towards socio-cultural researches and towards the semantic dimension of the innovation process, the industrial designer is much more linked to the technological dimension, which covers a key role in the Swedish furniture industry.

According to the model on which the relationship between designers and furniture company is based, the contract formalizing the relationship between the furniture company and the designer in Italy definitely has to be a long-term relationship contract that lets the designer develop a symbiotic relationship with the referent company. The best way to attract the designer consists on establishing a contract based on royalties related to the specific project. This type of contract gives the designer a percentage (usually 5%) of the turnover from the product designed. Royalty contracts involve the designer with the company for long periods of time and they are also subject to the risks involved. Incentives in royalties may facilitate more ‘hard work’ and better solutions from the designer who has a personal incentive to design solutions being appreciated by the market. Most of Italian companies prefer to work solely with these designers. Collaborating with a low number of designers and for a long time consequently implies an insight into the modus operandi of the company and also the likelihood of mutual loyalty and trust, that enables the designer to identify herself with the company and take the risk related to the specific project together with the company. In Sweden designers, even if they are freelance as well as in Italy, do not actively participate to the first meta-project phase, their task is to elaborate an idea individually, without sharing it with the other companies of the design discourse. Consequently, the relationship between designer and company is not exclusive. The designer is seen an external resource, her collaboration with the

company is just limited to a particular project. Her tools used to develop new products are much more important than its ability to involve other interpreters in the innovation process. According to the model on which the relationship between designers and furniture company is based, the contract established is necessarily a temporary project-based contract. Once the new product or set of products developed are launched into the market, the relationship between designer consultant and enterprise might be easily broken up. In Sweden designer and company do not share the same expenses and risks linked to the particular projects. In this context the most diffused type of contract established with external designers is the fixed-price contract, where the designer gets a fee on hourly basis, or simply a contract that specifies a total amount.

1.3.1 LIMITS AND FOLLOW-UPS

The initial purpose to compare the two different approaches towards innovation among Italian and Swedish furniture industries has faced some limits and restrictions. Italian and Swedish companies chosen for the comparison are actually focused on producing different furniture products, and this difference will be further explained in the following chapters. Anyway, those companies belong to the same industry and share similar contexts in the respective geographical environments and this definitely enhances the validity of the research findings. Furthermore, analyzing companies being part of similar or identical industries is enough to consider the research process plausible, since design processes are significantly different when other industries are compared with each other (Kristensen, 2005). Moreover this industry might be considered one of the best representative sectors in the field of design innovation, where designers get much more inspiration and companies embody some principles generally common in the rest of the design field.

Actually reading through this thesis many repetitions of the same concepts throughout the entire work can be found. This is related to the nature of this thesis. Indeed, in order to develop a reference model and then a comparison between the two different realties (Italy and Sweden) many key concepts have to be reminded in each section. This makes the reading sometimes pedantic, but at the same time the reader has the possibility to have a clear overview of the themes analyzed and of the theoretical basics of the research.

Coming to the start-ups of the project, since the managerial implications have just focused on the relationship between external designers and company, a further study could focus on the interconnections and supply networks in the furniture business and on the multiplicity of markets and networks involved in this industry. So it would be interesting to analyze the relationship between furniture company and suppliers in order to find out peculiarities and differences among the two realities and figure out managerial implications from this point of view. Secondly, it would be also interesting to analyze whether the involvement of users in the design innovation process would be useful to improve the degree of radicality of innovation and what would be the managerial implications linked to this involvement from the organizational point of view.

CHAPTER 2

STRATEGIES OF INNOVATION

In this second chapter an introduction to the concept of innovation based on literature review is presented. Different theories and definitions about design innovation are explained, in order to have an overview about the general topic of this thesis work. Additionally one of the two main themes of the research is introduced and analyzed, such as the innovation process in design driven companies and its different phases. A varied range of authors have written articles and produced scientific literature about this wide topic. This is the reason why the different theories are presented briefly and in a concise way and only the ones directly related to the subsequent sections of the thesis have been deeply described. In particular, the design-driven innovation process has been presented in detail and theory about it has been further explained compared to other theories about the process of design innovation.

2.1 INTRODUCTION TO INNOVATION

The term Innovation can mean either a simple renewal of a product or a practical application of a radical invention. The Oxford dictionary defines innovation as "the introduction of new things, ideas or ways of doing, a new idea that has been introduced or discovered". Schumpeter founded the innovation theory in 1911 and he asserted that innovation is about introducing a new product or a new business into the market. An innovation is supposed to introduce a concrete advantage to previous solutions and additionally it potentially diversifies itself from them. Since then, many researches tried to detail more the innovation issue introducing different kinds of classifications about typologies, characteristics and dynamics.

2.1.1 INNOVATION TYPOLOGIES

According to Abernathy and Clark (1985) four categories of innovation can be identified in relation to two principal drivers: the firm's technical competence and the firm's customer base. The four innovation typologies are the following ones:

- *Regular innovation*: it implies changes that build on established technical and production competences and that is applied to present markets and customers. The effect of these changes is to enhance and potentiate existing skills.
- *Revolutionary innovation*: it disrupts and makes established technical competences obsolete and at the same time it is applied to existing markets and customers.
- *Market niche innovation*: it opens new market opportunities through the use of existing technology, the effect on technical systems concerns to strengthen established designs.
- *Architectural innovation*: it defines ex novo the basic configuration of product and processes and establishes technical and marketing skills that will lead to subsequent development.

Every product is made by components and subsystems and some subsystems are usually connected to each other. Therefore innovation can be divided into different

typologies, depending whether it regards the single component or it impacts on the whole product. Henderson and Clark (1990) defined four typologies of innovation (see Figure 2):

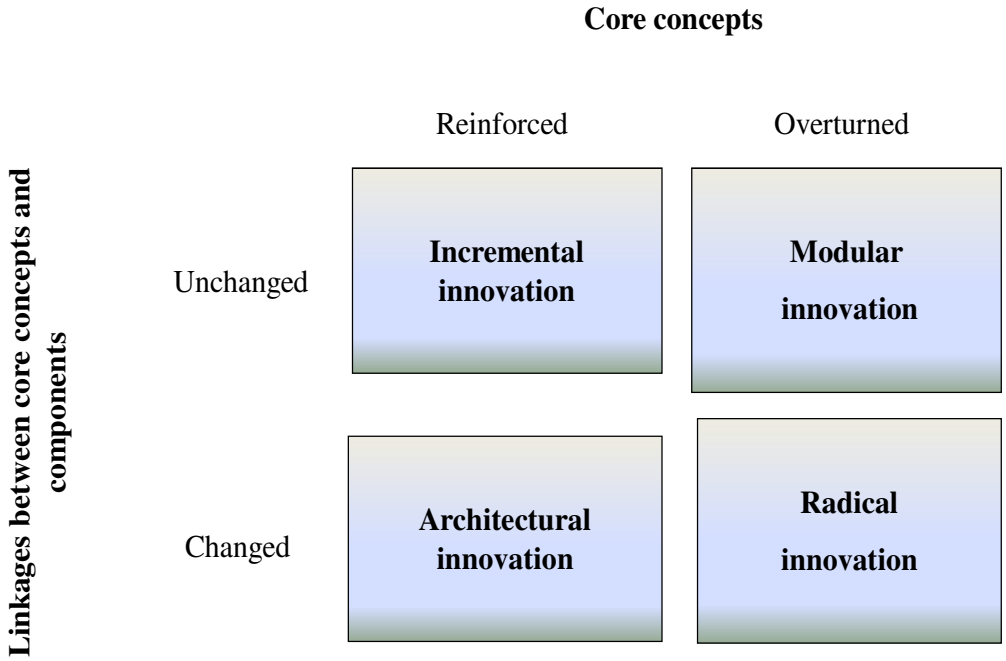

Figure 2 Innovation typologies (Henderson and Clark model)

- *Architectural innovation*: it modifies the way by which the components of a product are linked together, and it keeps the core design concepts and thus the basic knowledge used to ideate the components.
- *Radical innovation*: it defines a new dominant design and thus a new set of design concepts that are embodied in components and linked together in the new architecture.
- *Incremental innovation*: it enhances and extends an established design improvement, even though the core design concepts and the links between them remain the same.
- *Modular innovation*: it only changes the core design concepts without changing the product architecture.

2.1.2 INNOVATION CHARACTERISTICS

Technological capabilities of the firm and the relationship with the existing customer are structural factors of innovation. In terms of magnitude of innovation, many studies describe the difference between incremental and radical innovations (Nelson and Winter, 1982; Dewar and Dutton, 1986; Green et al, 1995). As explained in Figure 3, radical innovation implies a significant modification of an existing technological trajectory and incremental innovation allows to go through a specific technological trajectory (Dosi, 1982).

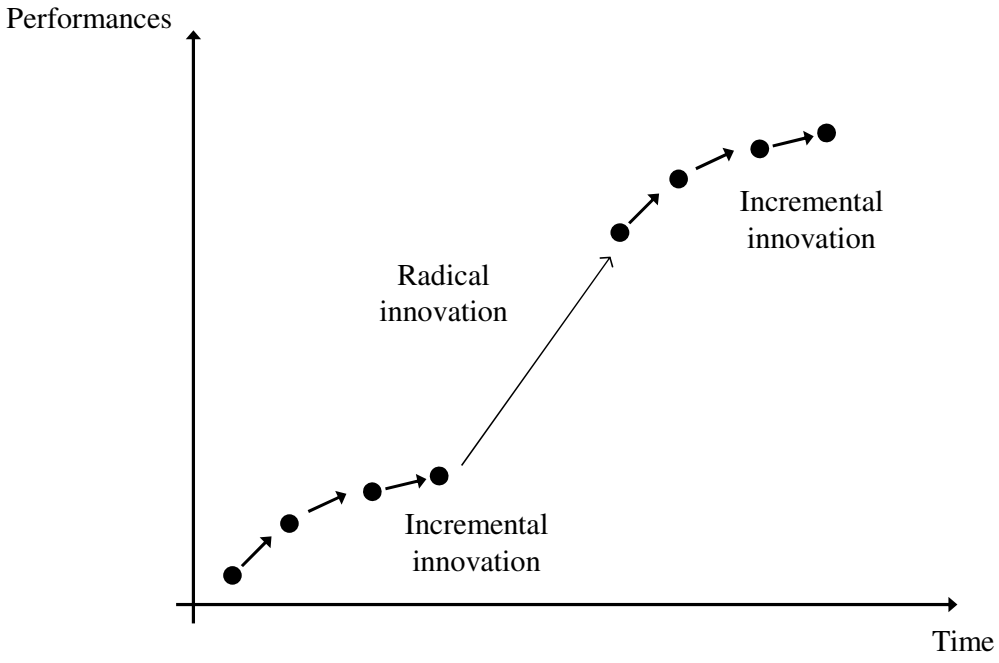

Figure 3 Radical and incremental innovation

Measuring radicality is a particularly complicated issue. Green et al. (1995) propose a multidimensional measure of the innovation radicality based on four issues:

- The quantity of innovative technologies new to the scientific community incorporated by the company.
- The quantity of innovative technologies new to the firm but well known outside incorporated by the company.

- How innovation represents a departure from the firm's existing management or business practices.
- The financial risk represented by introducing innovation into the firm.

Starting from Schumpeter's intuitions and analyzing the impact of innovation on the firm's existing capabilities in three different industries (minicomputer, cement and airlines), Tushman and Anderson (1986) make a deeper distinction between competence destroying and competence enhancing innovations. Furthermore they claim that innovative competences require new skills, abilities and knowledge in the development and production of the product. Instead, competence enhancing discontinuities are order-of-magnitude improvements in price/performance and are founded on existing know how within a product class.

2.1.3 INNOVATION DYNAMICS

Schumpeter (1942) introduces the concept of innovation dynamics using the term of creative destruction. Technological evolutions allow the creation of new technologies and new companies, but at the same time they threaten the survival of the already existing enterprises. By the way innovative entrances of entrepreneurs represent the force that sustained long-term economic growth, even if it destroyed the value of established companies that benefited from some degree of monopoly power. The introduction of radical innovations determines the beginning of the destructive phase, since the stability of the existing enterprises is threaded by the implementation of new technologies by new competitors who are able to develop them. The phase of creation begins when the most skilled enterprises show to be able to manage new technologies managing continuous incremental innovations. Abernathy and Utterback (1978) notice a regularity in the sequences of incremental and radical innovations inside an industry and suggest that industries follow a natural path of evolution. Tushman and Anderson (1990) formalized the concept of cyclical model of technological change as the succession of four phases: technological discontinuity, era of ferment, dominant design and era of incremental change. The technological cycle starts with a technological discontinuity, usually it is a rare and unpredictable event and allows to get results otherwise unattainable with the present technological potentialities. The development of a technological discontinuity

favors the emergence of several alternatives that have a relevant impact both on the organization of the existing enterprises and on the relationships between companies and industries. During the era of ferment every new technological solution has to compete with the consolidated technology that currently guarantees best performances and with the other solutions that implement the new technology. The low performances of the new technology discourage the enterprises to introduce it on the market. In order to avoid such competition it is necessary to place this new technologies in niche markets where instability and elevated costs are acceptable. Only after the definition of the performances and the market needs to be addressed, a dominant design can emerge among the various technological alternatives. Finally the era of incremental change is characterized by several improvements adopted on the basis of the dominant design (see Figure 4).

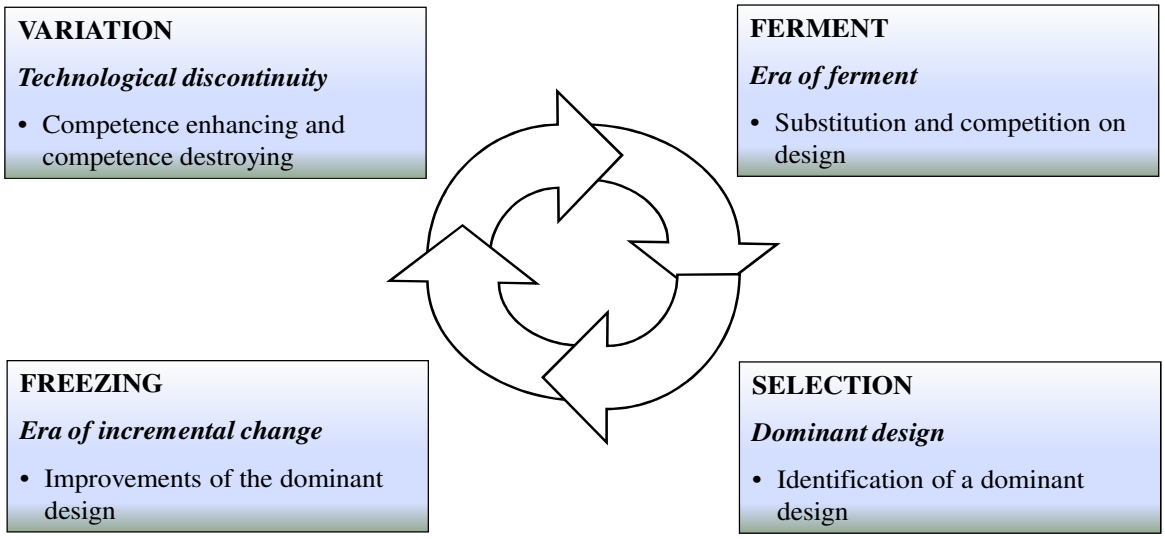

Figure 4 Cyclical model of technological change (adapted from Tushman and Anderson, 1990)

All classifications and models described above focus primarily on technological and market problems. Many studies analyze the development of new technologies or the evolutions of the markets. The following paragraphs analyze the different strategies of innovation that might be implemented by a company.

2.1.4 STRATEGIES OF INNOVATION

A new product development is a process of generation and integration of knowledge and we can identify two principal sources of knowledge: the knowledge about technology and the availability of new technologies solutions and the knowledge about customers' needs. From this distinction we can identify (Dosi, 1982) two main approaches towards innovation: market-pull and technology-push (Martin, 1994). In the market-pull approach the understanding of market needs plays a crucial role and it is considered more important than the introduction of new technologies. The main source of innovation is the market and the new product development is a direct consequence of explicit needs expressed by the consumer. However, the main important assumption is that user needs are explicit elements that can be identified and finally translated into new products.

A specific approach of market pull strategy referred to design is called user-centered design. User-centered design approach states that product development should start from a deep analysis of user needs. A company can successfully innovate by asking users about their needs or by observing them as they use existing products and by tracking their behavior in consumption processes. In the literature it is possible to find several contributions about tools and models that support the application of user centered design approach (Kumar and Whitney, 2003; Rosenthal and Capper, 2006; Sutton, 2001). Some theoretical references related to the classification of the needs are particularly important before describing the methodologies mostly used in the analysis of the users' needs. The basic classification of needs in explicit and latent depends on the degree in which they are clear and evident to the person. Obviously the more needs are explicit, the more it is easy to satisfy them, whereas it could be particularly hard to understand and satisfy the irrational feelings that cannot be explicit. Maslow's theory (1974) classifies human needs according to a hierarchical structure that goes from the most urgent to the less pressing. (Figure 5)

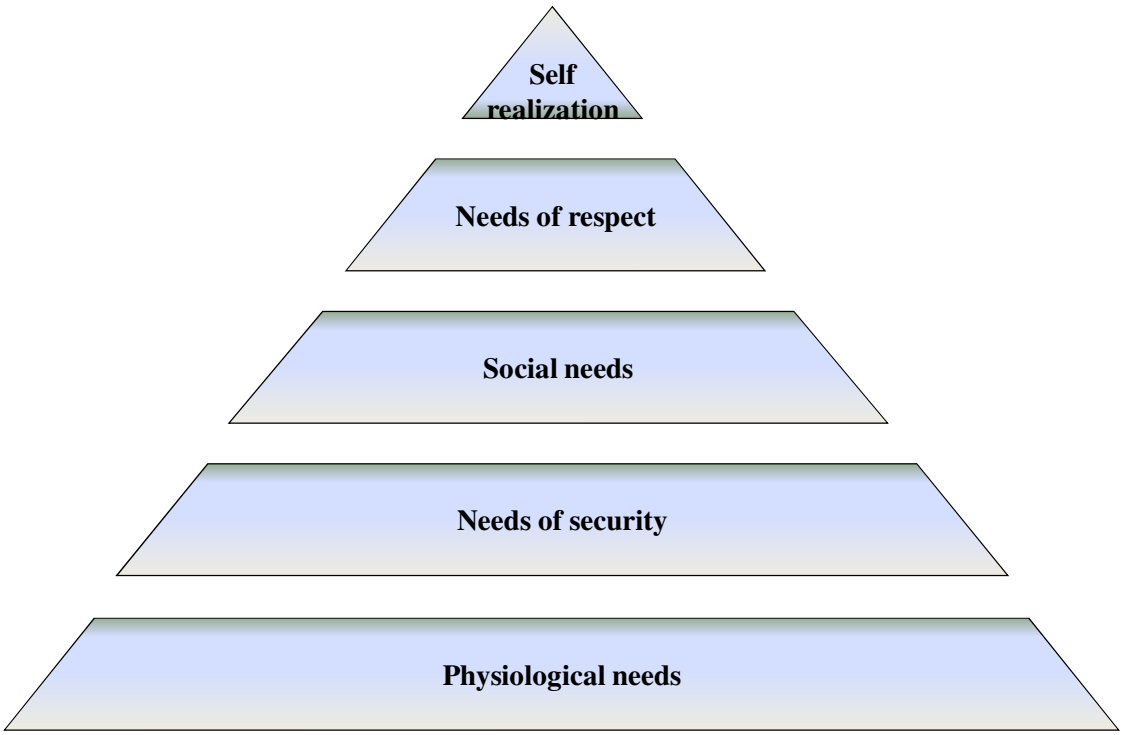

Figure 5 Hierarchy of needs (Maslow, 1974)

The classification proposed by Maslow describes a broad range of needs: from primary needs up to need of respect and self-realization. According to the structure proposed by Maslow, product attributes assume different importance and consequently a company can design them in a precise way: at the lowest levels, the set of functional characteristics respond to the hygienic and safety regulations. Rising in the structure, the needs gradually move towards the semantic, symbolic and cultural dimensions: sense of affiliation, love, status, style, recognition, etc. In this sense design plays an important role in the development of basic and crucial product aspects that satisfy needs and desires connected with the last three levels of the pyramid.

Literature about new product development process describes the interconnections between users' needs and context of use going from the "design for users" paradigm to the "design with users" one (Sanders, 2002). During the first years of the 1980s many designers used to collaborate with sociologists and anthropologists in the process of user needs analysis, but this kind of approach showed very soon several limits: it does not consider some aspects connected to the emotions, to the memories of the consumer, to his actual and ideal experiences. Thus, it is necessary to introduce the philosophy of

triangulation that analyzes the three following different degrees of knowledge about the consumer (Sawhney et al., 2003): what people say, what people do, what people make (Figure 6).

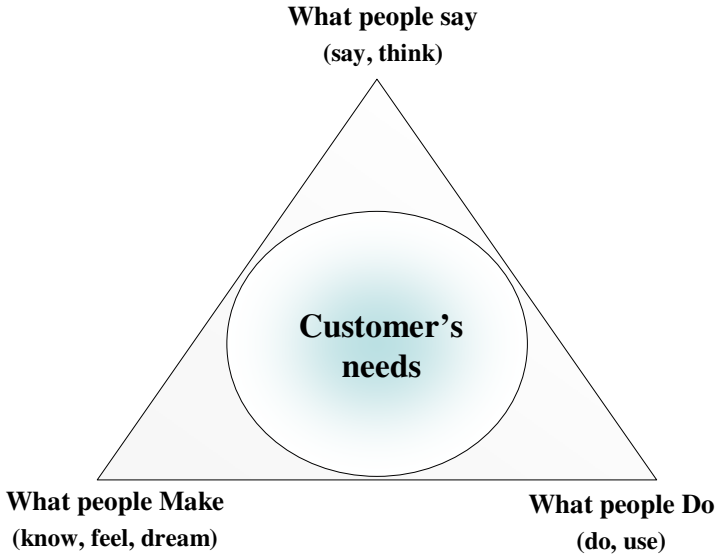

Figure 6 The philosophy of triangulation (Sawhney et al., 2003; Sanders, 2002)

Explicit needs can be identified by listening to the customer. At the same time it is necessary to consider that customer reveals only what he wants, and consequently he determines the direction of development of the analysis. To analyze what the customer does and uses might not be enough because it underlines only the observable needs skipping an unexplored area connected to what the customer knows, feels and dreams (Sanders, 2002). The investigation related to knowledge and convictions of the customer provides to the researcher some indications about perception of the reality and different experiences of the customer; moreover the comprehension of feelings and sentiments can allow to increase the empathy with the analyzed subject, underlining the tacit knowledge (Polanyi, 1983). However, in order to gather up such information it is necessary to actively involve the studied subject in the development process in order to observe the kind of solutions that he/she proposes without knowing the need from which they originate. For example the paradigm of the Experience Design (Sanders, 2002) focuses on the creation of an experience for the customer: the emotional aspect of the interaction with the product becomes the fulcrum of the entire project (Figure 7).

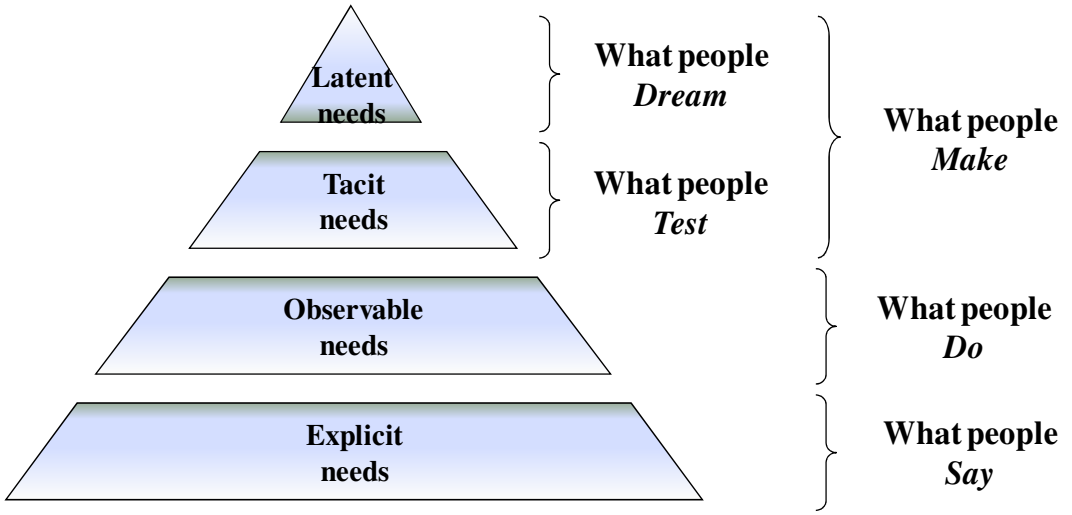

Figure 7 Typologies of needs (adapted from Sanders, 2002)

It is possible to observe that the analyses traditionally carried out by the marketing are directed to the identification of the explicit needs (what people say), while the observation on the contexts of use, typical of the designers, are more directed to identify what the customers do with the products (what people do and what people make). The category of needs that a company wants to analyze has obviously also an impact on the more appropriate technique of investigations to apply. In the research field a first great distinction consists on qualitative and quantitative investigations. The quantitative investigation uses formalized systems of data collection. Its most common tool is the questionnaire with multiple-choice answers, it allows to implement statistical analysis. It is typically very useful for the detailed verification of well-circumscribed hypothesis (eventually consequential from a first qualitative investigation). Instead the qualitative research uses tools that do not present a rigid formalization and the most typical tool is the free interview. This kind of analysis is detailed, and it allows to examine also variables initially not anticipated. The qualitative investigation usually foresees strong interaction between the researcher and the observed subject. Market investigations (from the analysis of the sales of a product, to the investigation of the percentage of stock-out, from the observation of the unsold up to benchmark with the direct competitors) and questionnaires to be submitted to statistic revision can be considered quantitative investigations. Instead the qualitative researches go from the focus-groups to the analysis of the lead-users, from the ethnographic to socio-cultural researches. As shown in Figure 8, moving from the left

side to the right, the capability to interpret the influence of context of use on user needs and his/her active role increases.

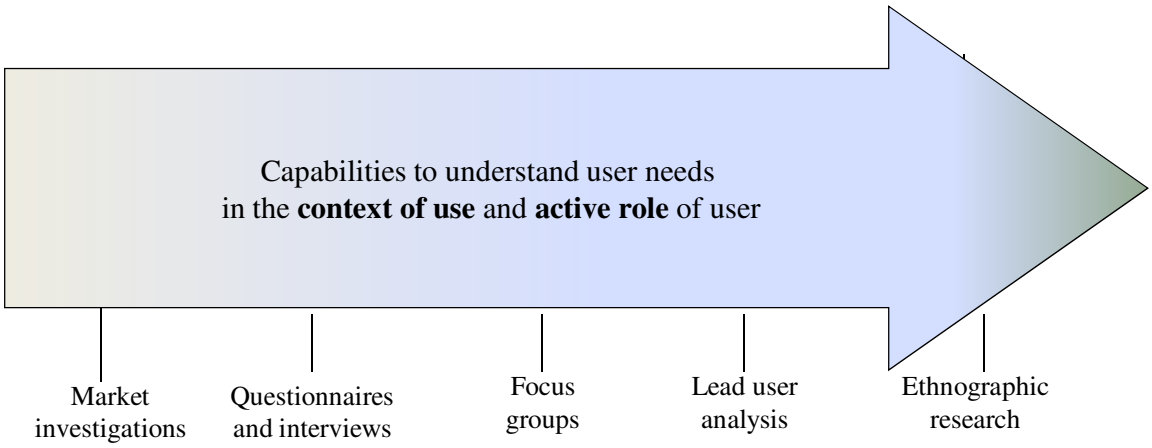

Figure 8 Methodologies of user needs analysis (adapted from Verganti, 2001)

On the other hand, the technology-push approach argues that the source of innovation comes from the research and development activities of the company and the identification and development of new technologies based on the previous research work. In the market-pull approach the market and the consumer play a central role, while the technology-push approach is based on the company and the development of new technologies that subsequently drives the innovation process.

In addition to the two previous approaches, we identify a third one: the design driven innovation process. In this approach, the semantic dimension that guides the innovation process plays a more important role rather than the market or the technology. According to that, a third source of knowledge has to be added to the knowledge about user needs and the one about technological opportunities, such as *"the knowledge about the signs that can be used to deliver a message to the user and about the socio-cultural context in which the user will give meaning to those signs" (Verganti 2003 and 2006).* See Figure 9.

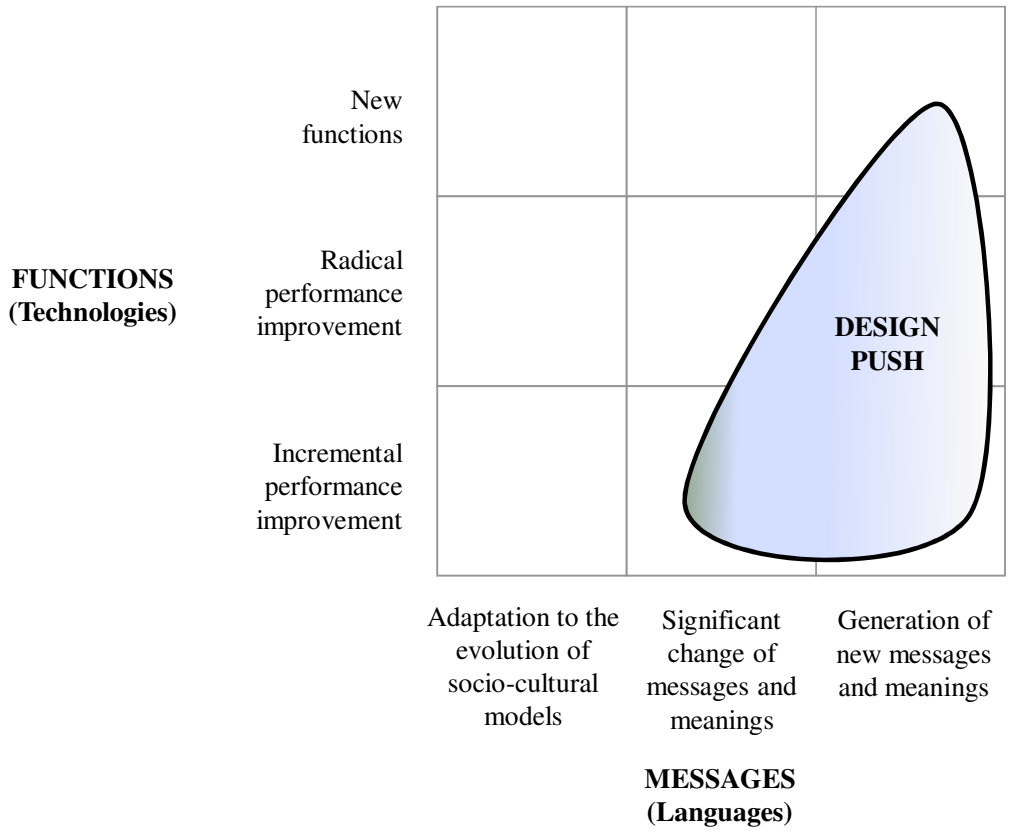

Figure 9 Design-push approach to innovation (adapted from Verganti, 2003)

In a design-driven strategy the crucial aspect of innovation concerns the capability to understand, anticipate and influence the emergence of new product meanings. Verganti defines the radical design driven innovation as *"an innovation where novelty of message and design language is significant and prevalent compared to novelty of functionality and technology"*. Figure 10 clearly identifies the differences between the three already mentioned strategies, where colors and directions of arrows show up the peculiarities of the three approaches towards innovation.

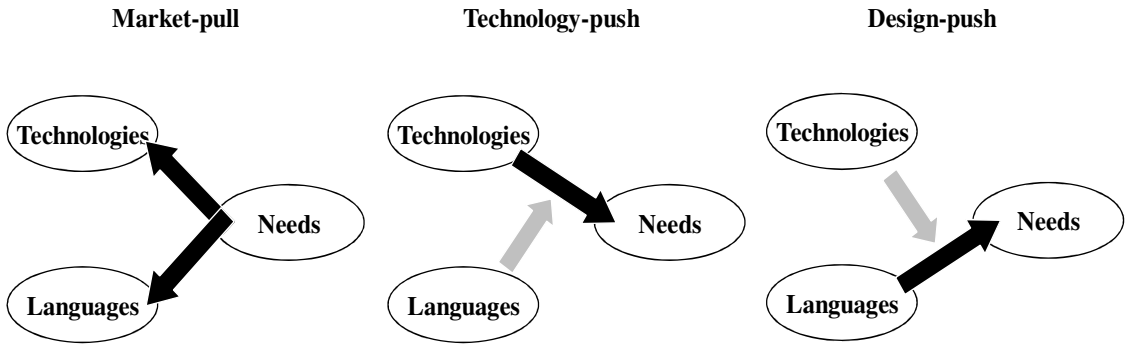

Figure 10 Knowledge drivers in different approaches to innovation (Verganti, 2003)

While in the technology-push approach the driver is the development of new technologies, in the design-driven approach the driver is the meaning of the developed product, and product languages and messages can even be modified working on the technologies used in the products. A consumer can manifest explicit needs from a semantic perspective only when the innovation is incremental. When the degree of innovation tends to be radical, the market and the consumer is not able to manifest coherent needs that can stimulate the company in developing new breakthrough product meanings. Consequently, the role of market factors in the design-driven approach changes accordingly to the level of novelty of product meanings. Market drivers become important in the case of incremental innovation of product meanings where incremental adaptations to the product semantics are determined by the continuous evolution of explicit needs expressed by the customers (see Figure 11). The more radical is the change in meaning, the less the market becomes capable to propose semantic innovations. Thus, since the design driven innovation is radical it cannot be generated by a market-pull approach. Furthermore, if the technology represents a mean to generate a change in meaning the technology-push approach to innovations can be turned to design-driven.

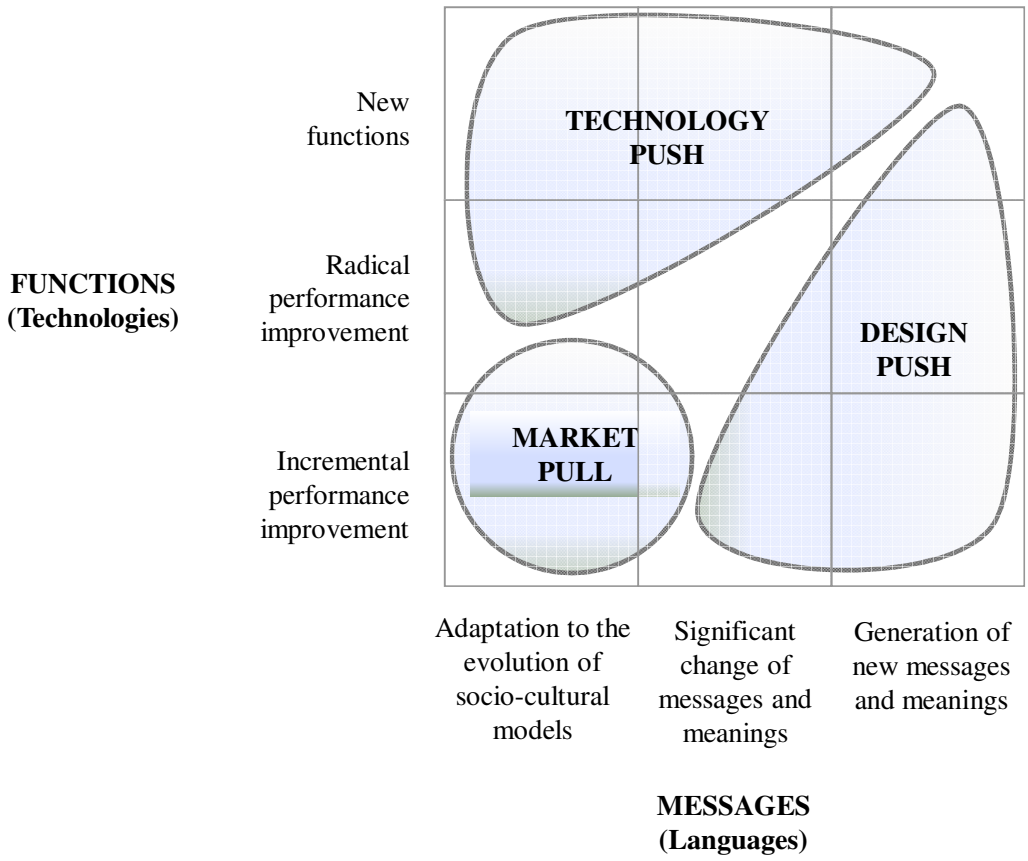

Figure 11 Mapping different approaches to innovation (Verganti, 2003)

In order to adopt a design-driven approach it is necessary to be able to comprehend the socio-cultural context and to recognize signals that can lead to this radical innovation. A proper management of radical design driven innovation supports companies to interpret new lifestyles and subsequently to suggest a coherent system of values to the market. For this specific reason it is important to access a series of stakeholders connected to each other in order to understand the evolution of socio-cultural contexts and then to introduce radical innovations.

A design-driven innovation company should be able to interpret the meaning that a customer gives to products and this depends on the cognitive schemes and socio-cultural context of customers, filtered through individual and cultural parameters. For this reason in design driven innovation it is vital to develop a great capability to interpret the social context in which the user lives, since the contextual cultural factors have a strong influence on the consumer. Kotler and Scott (1999) introduce a model presenting the analysis of factors influencing consumer needs (Figure 12).

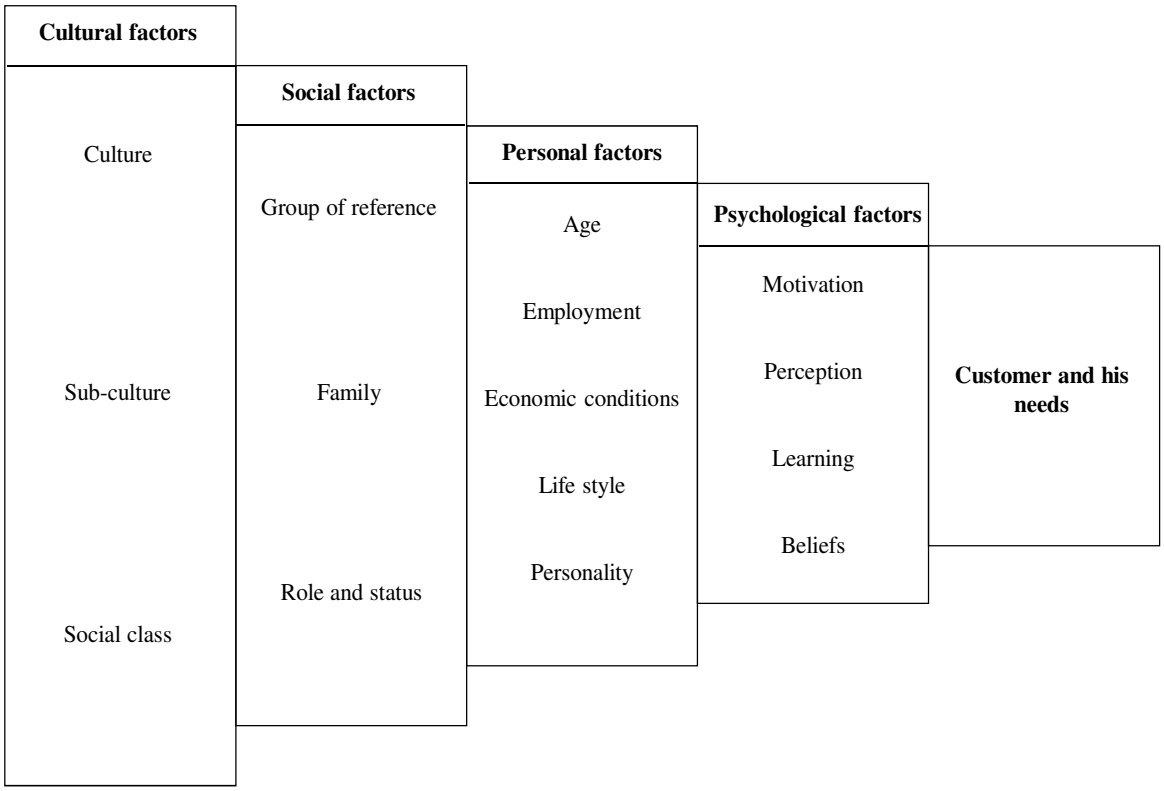

Figure 12 Factors influencing consumer needs (Kotler and Scott, 1999)

Each product has particular language and meaning which can be innovated. The following framework (Verganti, 2003, Figure 13) enhances and elaborates the concept of form and additionally it considers the symbolic and emotional values of a product.

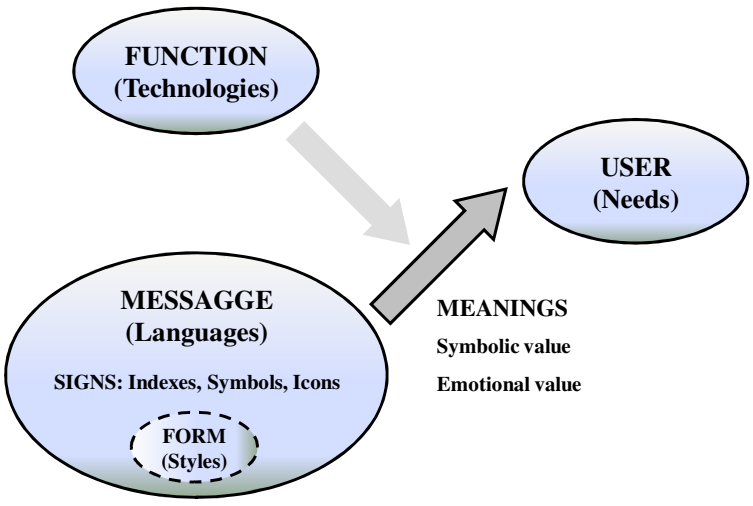

Figure 13 Design driven innovation (Verganti, 2003)

The radical design-driven innovation implies that the novelty of design messages and languages are more important compared to the functionality and the technology of the product. Design can also be defined as a set of activities that aim to create meanings (Krippendorff, 1989). For this reason designers have both to understand the socio-cultural context that surrounds customers and, on the other hand, they should be able to translate it into concrete product languages. Consequently, it is particularly important to introduce the disciplines of product semantics and semiotics in the study of the design innovation process. According to 'Zurlo model' (Dell'Era et al., 2008), there are three levels of interpretations of the relationship between product and consumer: tools, results and effectiveness. Tools can be defined as the intrinsic characteristics of the product, that actually include both the semantic and functional perspectives. On the other side results concern the effects of the product on the consumer. Finally, effectiveness regards the performance characteristics and the meanings that the costumer gives to the product. The semantic dimension influences the meanings of products and the way they evolve within the society. So acting on the semantic dimension of the product, the company can create and propose new meanings in relation to the socio-cultural context where the products are introduced.

As empirical studies about Kartell proved (Verganti and Dell'Era, 2010), R&D department aims at providing the technological solution to the ideas elaborated by designers and at ensuring the innovativeness of this initial ideas. This fact emphasizes the meaning and the role of technology in a design-driven company: it is the enabler of new product meanings and languages. Companies with this innovative approach do research activities related to new technologies and studies about social lifestyles in order to introduce radical design-driven innovation. The interaction between design and technology concerns the fact that research on new meanings and styles done by designers are combined with research on new materials, surface treatments and engineering processes.

2.2 THE DESIGN-DRIVEN INNOVATION PROCESS

In this section the design-driven innovation process will be investigated in order to find out and analyze the phases carried out during this process and figure out what are the main peculiarities of this approach. In particular the definition of the three main

phases of the radical design-driven innovation process comes from the analysis carried out by Professor Verganti in his own already quoted book “Design-Driven Innovation”.

2.2.1 THE MACRO-PHASES

According to Clark and Wheelwright (1993) and Hohalan and Markham (1996), the process in design-driven innovation can be divided into three macro phases. This distinction will be further explained and compared with the one referred to design-driven innovation proposed by Verganti.

- Concept development. This first phase addresses the problem of identifying market needs and studying the possible technological solutions, taking into account the matching between the new product and the corporate strategy and the economic feasibility of the project (Giacomazzi, 2001). Only after those verifications the specifications and the actual project plan can be concluded. Planning is crucial for the success of the project, and the estimated costs during the planning phase affect functionality and performance of the final product (Cooper, 1988).

- Product design**.** This phase receives as input the concept defined in the early stages and then it defines the operational specifications of the product. Then components and architecture appropriate to support the specifications established are defined. The final phase is the engineering of the product modules and their integration, and the testing of the final product (Hohalan and Markham, 1996).

- Planning process. At this stage there is the definition of the configuration not only of production (machinery and working practices) but also of the stages of delivery and sales, and in addition there are phases of testing with pilot lines in the production system (Clark and Wheelwright, 1993).

From this description it is obvious that decisions taken in the early stages are crucial for the whole process, so difficult to change in an advanced state of work (Bartezzaghi et al., 1999). For this reason, various theories have arisen with the aim of improving the performance of the decisions taken in the early stages of the process:

- Anticipation of constraints: anticipating the constraints means predicting possible problems arising from downstream stages of the process, which would continue to conduct audits of the solutions adopted in the following stages. To anticipate these constraints it is necessary to involve stakeholders in early stages of the project, enhancing the experience and the ability to identify the systemic impact of a decision, introducing a continuous experimentation and using management techniques that allow the planning monitoring of the project plan (Verganti et al., 2004). The approach arising from these considerations is the stage-gate approach, which consists in identifying specific phases (stages) separated by moments of control (gates) with contributions from all stakeholders involved: you cannot go to the next stage without having passed all the tests of a gate in order to reach the goal of analyzing all possible constraints (Cooper, 1990);

- Adaptive Management: due to the uncertainty of the context you can develop a project management, continuously learning and adapting your work during the course of the project. Operationally there are frequent cycles of problem solving (MacCormack, 1997).

The initial phase of research is conducted in a strictly informal way and activities are focused on searching information about the external environment (Marchesi et al., 2004), where the goal is to capture trends, which is crucial for design-driven innovation. At this point in the process there are not predetermined stages to follow, the important thing is the collection of more information on the socio-cultural and latent needs of consumers. The meta-project phase makes a synthesis and an elaboration of the information collected during the research and leads to the definition of meta-product concept. This is not a real concept because they are not related to a single product, but rather the definition of scenarios related to the use of the product. The following ones are the main steps of the phase:

- Selection of designer: The company that operates strategically through design establishes its own brand over time, that must match as well as possible with the style chosen by the designer. If the company aims to communicate a message must be sure that the designer is convinced of the validity of that message and is able to express it without ambiguity.

- Development of the relationship with the designer: designers are free to express their creativity, but they develop a formalized relationship with the company to align the strategies of the company.

- Development of relationships with other external actors: in this phase consultants are also involved, suppliers and all those who are able to bring expertise necessary for developing the meta-concept.

- Identification of latent needs: this phase starts from the information gathered during the research and from the identification of socio-cultural trends.

- Definition of the meta-concept: all the previous stages convey to the definition of a brief, that will be the input to the process of new product development.

- Definition of communication strategy and product launch: The strategy of the product lunch has to be coherent with the image and the message that the company wants to communicate through the product and should therefore be drawn to the same meta-concept, in order not to create ambiguity in the later stages.

2.2.2 THE THREE MAIN PHASES OF DESIGN DRIVEN INNOVATION

This paragraph is totally inspired to the book “Design-Driven innovation” by Verganti, 2009. He identifies three main phases in the design-driven innovation process. Creating design-driven innovation requires two assets: knowledge of how people could give meanings to things and the seductive power to influence the emergence of a radical new meaning (Figure 14). As already stated, the core capability in design driven innovation is participating as much as possible to the design discourse and, in particular, the design driven innovation process is rooted in three different phases:

- *Listening* to the design discourse: this action consists on accessing knowledge about possible meanings and languages of new products. Companies are involved in understanding where this knowledge is and how to internalize it. It implies identifying and involving key interpreters of the design discourse.
- *Interpreting*. This phase entails generating the unique vision and elaborating new

proposal for a radical change in meanings and languages. It implies collecting and reinterpreting information gathered in the design discourse and at the same time elaborating internal researches and experiments in order to produce radical innovation.

- *Addressing*. Addressing the design discourse implies diffusing the new vision to the variety of interpreters. At the same time in consists on defining the most appropriate means through which interpreters can discuss and then internalize those new proposals.

These three actions aim at securing privileged access to external assets: knowledge and seductive power. The adjective privileged is referred to the fact that the dialogue with the members of design discourse is better and more complete than the one between competitors and thus it might be defined as a competitive advantage. This implies that you may build a unique and inimitable relationship with the other actors of the design discourse. Additionally generating design-driven innovation does not imply sharing knowledge with interpreters, but instead it is a proactive process that entails generating new proposals and meanings. So the crucial ability is participating in the design discourse, actively interpreting the information coming from interpreters and developing a new and radical vision. There are some reasons why this approach is significantly different from the user-centered process. First of all it implies a deep research process and an action of developing and sharing knowledge instead of a mere brainstorming mixed with extemporaneous activities. Secondly it implies participation rather than observation. The aim is defining new meanings and languages rather than simply observing what is going on in the society. Thirdly the process is based on the ability to build an external and internal network of relationships rather than following a defined sequence of steps. It is impossible to give a handbook about this process, it implies hard and soft skills inside the society that cannot be even totally identified and codified. Figure 14 shows how interpreters who do research interact and it finds out how the two main assets of design driven innovation (knowledge and seductive power) are shared and the role of the executives in the generation of design-driven innovation.

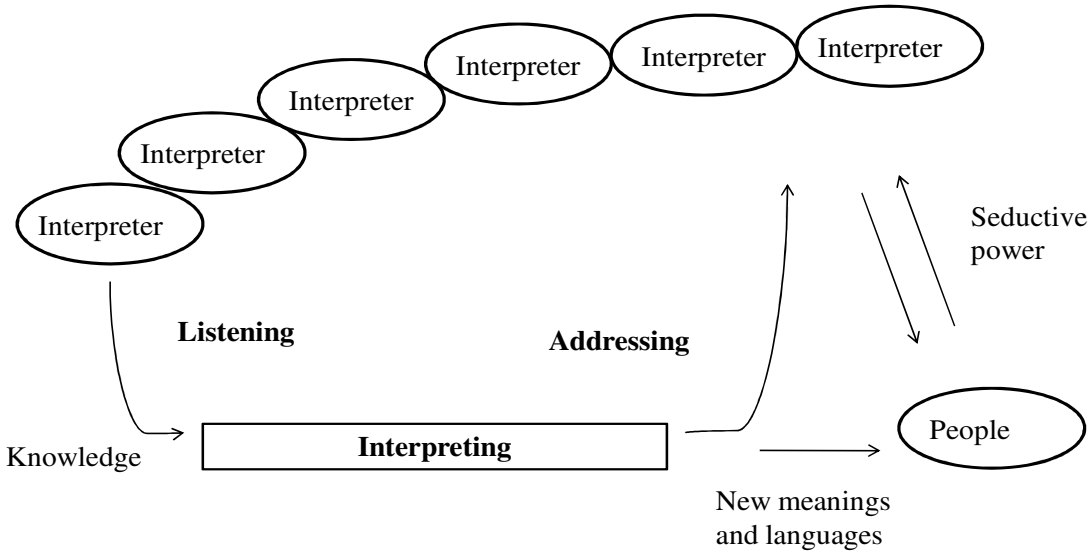

Figure 14 The process of design-driven innovation (adpted from Verganti, 2009)

2.2.2.1 LISTENING

Considering the design discourse it might be noticed that designers in design firms play an essential role and they may be the primary contributors to an innovation project, but they are never the sole interpreters. A successful design-driven innovation company spot key interpreters, attract them before their competitors and develop a preferential relationship with them. First of all, scientists conduct basic exploration and the technicians develop products based on their findings. After that some other interpreters are engaged in radical, untargeted experiments exploring new languages, and others last suggest more focused targets, transferring the results of those experiments into concrete marketing applications. Interpreters who might really introduce a radical change of meanings have to be broker of languages. Firms usually tend to involve only interpreters who already take part and play a central role in their own industry. This is not the right approach in design-driven innovation: languages are more culturally dependent than industry dependent. An important criterion is to look for people who can act as bridges, who do not belong to the same industry but who target the same life context. Creating bridges to worlds that are relevant for the user but not for the competitors there is a concrete chance to end up with breakthrough proposals.

The first kind of bridge is represented by “language brokers”, who might be defined as breakthrough interpreters who provide knowledge about meanings in a way that is primarily inaccessible to the company. They identify new and innovative meanings and languages and they communicate them to the company, and in so doing they represent one of the most important source of radical innovation for designers. The second type of bridge is represented by mediators. These individuals do not directly provide knowledge but rather access to other interpreters and make the communication among interpreters possible and easier. Design-driven innovation companies that have not yet built an extensive dialogue with the design discourse may find those interpreters more useful than brokers who provide solutions directly. At the same time, in order to favor the communications between interpreters, there is requirement of immersion in the discourse. This means that verbal dialogues, workshops and joint projects have to be organized so that the company is directly connected to designers, students, researchers and suppliers, both from the same culture and from different cultures, which creates original visions. Most of the interactions in the design discourse occur in forms visible to a large audience, such as knowledge about how people could give meanings to things might be embedded in a codified form. This is the reason why the company and its members need to be there, to listen to the whispers and promote experiments. The most important forms of interaction between different actors are verbal dialogues, workshops and joint projects. In order to differentiate from competitors, a design-driven company has to discern important whispers in the crowded sea and noise of information and produce radical innovation.

Companies cannot rely only on local dialogues. There must be a combination and hybridization of local sources and information coming from different and foreign visions. This important theme will be further investigated in chapter 3. Once the company has identified the key interpreters, it needs to attract them. Usually they should not be attracted by money, but by the breakthrough project that they are going to build. The designer and all other interpreters have to be treated as members of the same family, the relationship between designer and manufacturer has to be extremely personal and all together try to realize the project as well as possible. Moreover, the best way to attract key interpreters is to pay them back with assets: technological capabilities, experimentation ground, and your own knowledge of meaning. That is why even the organizer of the project has to take part to the design discourse as a key interpreter and not simply to exploit it. Designers working for a design-driven innovation company find

technologies, flexibility and brand asset that they rarely find among competing manufacturers. They also value the climate of mutual esteem and exchange of experience among interpreters. That means that a radical innovation implies a design circle, where breakthrough thinking benefits from interaction, mutual trust and sense of mission typical of circles. First of all a interpreter can become obsolete for an endogenous dynamic: when a key interpreter becomes a talent she starts focusing on reinterpretation of her own breakthrough vision, others imitate her and she may end up working for her competitors. Secondly a change in the context might occur and it may spoil the network to investigate future changes in languages and meanings. Consequently the challenge for the firm is not only changes in technology but also the need to refresh their network of interpreters.

2.2.2.2 INTERPRETING

The second phase is a process through which the company creates its own proposal and concretely develop a radical new meaning and language. To realize this mission the company needs a proper process through which it can share knowledge from the design discourse and turn it into concrete visions. The company has to organize a workshop (called Design Direction Workshop) with a specific format (Figure 15).

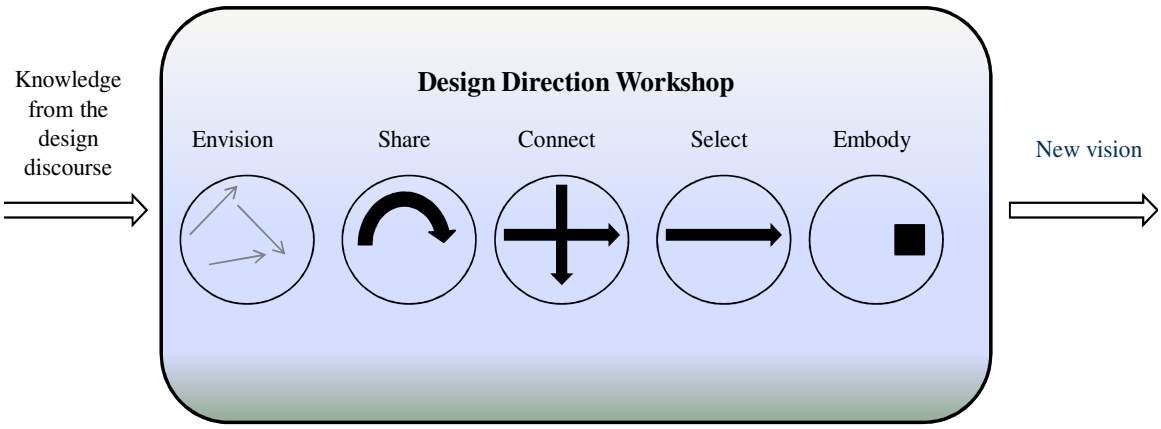

Figure 15 The Design Direction Workshop (adapted from Verganti, 2009)

The first activity in a Design Direction Workshop is called *envision* and it involves producing insights. The convener asks the participants to envision the implications of their own research and to apply the knowledge of the design discourse to the problem at hand. This activity can last a few weeks or even some months and it can be considered

real lab-research. Indeed the possibility that each participant will envision new scenarios is based not on his creativity but on the extent to which he has tapped into the design discourse before and developed his own exploration. The second activity is to *share* the insights in team sessions in order to bring together the results of the previous activity and reach a further identification of new interpretations. Afterwards it is the time to build possible new scenarios by finding *connections* between the proposals envisioned by the key interpreters. In this phase the firm should identify several dimensions through which to collect participants insights. Some of them should be closer to current meaning, others may envision radical change. The next phase may include the *selection* of the best breakthrough project. The first parameter is the functionality, then come costs and price of the project. Secondly communication and language, such as the product's symbolic meaning and the social motivation the can lead to buy it. Thirdly comes the sensation/memory/imagery referred to the product's emotional and poetic meaning and to the imitate motivations that can lead people to buy the product. A company may decide to market products that are weak in one dimension (for example low functionality and high price) but that they are strong on other features (for instance they are particularly exiting and evoke motioning feelings). The last activity of the Design Direction Workshop is called *embody* and it entails giving form to a new meaning and language and communicate the produced cultural ideas to the different interpreters who are inside the design discourse. First of all to the company's board or to the team that actually will pursue concept generation and development, and on the other hand to the design discourse, in order to leverage its seductive power. Books, exhibitions at fairs are examples of this kind of communication.

Once this Workshop is ended, the firm has to translate its radical vision into functional and concrete shortcomings. Bang & Olufsen shifts its focus during the innovation process in the way described in Figure 16. Design driven research is aimed at defining a product's identity. Then concept generation focuses on features that customers expect, that can be observed through user analysis and if it is well designed it provides incremental value.

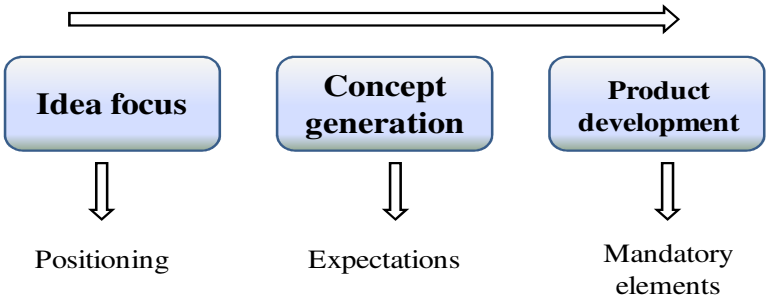

Figure 16 Bang & Olufsen way to shift its focus during the innovation process (adapted from Verganti, 2009)

In the third phase we talk about product development which focuses on mandatory elements: those elements that people take for granted and that the product cannot lack. This final phase is very important since technological best practices in product development usually compromise the radical change introduced in the previous step and sometimes they push in the opposite direction. That is why product development should always preserve the uniqueness of the product in every detail. On the other side firms should not rely on market tests to decide whether to launch a product: markets tests can be tricky and should be only used to understand possible improvements of the product and should aim at making the new product language more comprehensible.

2.2.2.5 ADDRESSING

When a radical innovation is introduced, advertising is not the ideal medium to communicate it. Design-driven companies should adopt a different strategy, by leveraging the interpreters in the design discourse. Indeed they actually should have a seductive power, because they influence how people will give meanings to things and influence the way new proposals are given to people (see Figure 17). For this reason we might say that interpreters have seductive power, because they influence how people interpret and give meanings to products.

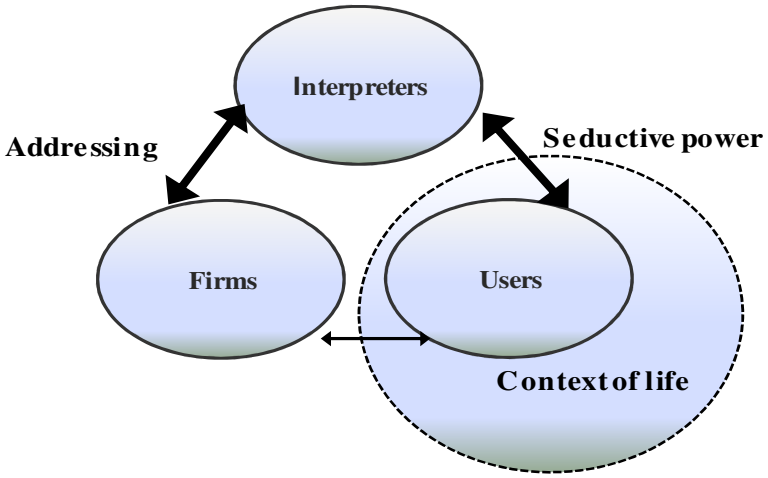

Figure 17 Diffusing seductive power by leveraging the seductive power of the interpreters (adapted from Verganti, 2009)

Interpreters need to access to insights that can embedded into projects. They create novel proposals for their own sake. This is why the company needs to be sure that they are exposed to its vision and they are able to assimilate it during their research. First of all, to address the design discourse the design-driven company relies on cultural prototypes. They might use books, exhibitions, cultural events, concept products shown at fairs, journal articles, presentations at conference, firm's conference etc. It has to be a cultural prototype because rather than being a specific product it is an articulation of a new meaning or language. Cultural prototypes are not brochures promoting a product, they are not meant for final users but for interpreters and firms need to conceive them as research outputs. They should offer novel visions if they are conceptually deep and challenging and if they leave space for further interpretation, and the brand should not be visible or it should appear instead through the symbolic language of authorship and copyright. Additionally many types of prototypes should be produced in order to address larger numbers of interpreters and a firm should not make profit from them.

Finally design driven innovation should protect its findings from imitation. Imitators usually wait for what innovators do, see how the market reacts and invest only in successful languages. Competitors can easily imitate a product's function and even its form, but they will never be able to imitate its real meaning, because that meaning and language is inevitably attached to the innovator's brand. Moreover imitation requires a very complex strategy when it comes to radical innovation of meanings. It takes several

years to clearly discern whether a radical new meaning is actually efficient and on this fact the innovator company has to build its own authorship and reputation.

In their product portfolio innovators introduce a few languages they have identified through design-driven research, whereas imitators introduce a variety of languages and signs in their product portfolio. Innovators make experiments and investigate uncertain avenues, whereas imitators wait, observe and see how the market reacts and they invest only in successful languages. Since design-driven innovation consists on open debates and discussions and they do not happen simultaneously, it is difficult for imitators to grab some useful information from this discourse and need to wait several years in order to see whether the product represents a success or not. In the meanwhile the innovator company has had enough time to establish authorship and reputation, benefiting from the application of the most important principles of design driven innovation.

2.3 DESIGN DRIVEN INNOVATION AS A NETWORKED RESEARCH PROCESS

According to Verganti (2009) and his model about Design-driven innovation, the company is surrounded by several actors that share the same needs such as firms in other industries but that address the same user-consumers in the same context, product designers, architects, magazines and other media of design suppliers of raw materials, universities, design schools, showrooms and exhibitions, designers, artists. All these actors are interested in understanding possible future scenarios and carry out researches into those scenarios, therefore developing knowledge about future socio-cultural models. With their actions and outputs (products, projects, reports, artworks, shows, etc.) they also contribute to influence what people will actually think about the pieces of furniture. Interacting with these actors therefore increases the company's capability to understand and influence socio-cultural models, and therefore increases its probability of developing radical innovations of meanings that in the future would be successful in the market place.

Italian manufacturers value the interaction with this network of actors, who are considered as interpreters of the evolution of future scenarios, with whom to share their own visions and exchange information. Manufacturers have realized that knowledge about socio-cultural models is diffused within the external environment, and that they are

immersed into a huge research laboratory. In particular the basic characteristics of design-driven innovation are the following ones. Firstly it is a networked research process and it crosses widely over the boundaries of the firm. Additionally it is based on sharing of knowledge (about socio-cultural models, meanings and product languages) and it also includes an action of influencing and modifying the socio-cultural regime. Whereas the key capability in user centered design is to get as close as possible to users, figure out their needs and be creative in finding solutions, the key capability in design driven innovation is accessing and sharing knowledge with the design discourse, and more precisely to identify the key interpreters, attract them and develop with them a privileged relationship, to recombine knowledge and build unique proposals. Radical design-driven innovative firms care not only about the creation of a new proposals, but also about the modification of the context in which to propose innovation.

Design has been usually defined as a creative process occurring during concept generation and product development. Actually the process that leads to design driven innovation is not based on peculiar creativity tools or methods. It focuses on the process of generating and assimilating knowledge about the evolution of socio-cultural models (through interaction with the design discourse) and it belongs to the meta-project phase and starts definitely before concept generation and product development. As we can see in Figure 18, at the beginning of the research process two different (but at the same interrelated) phases occur. After the designer selection, intentionally shown with the circle upstream, the first concrete phase consists on a design research, which actually implies a generation of new meanings and languages. Normally the contribute of the designer in this research is more important and relevant than the one of the other actors, both internal and external, of the discourse. At the same time the technological research also involves all the members of the design discourse and it is based on the contribute of the internal and external actors of the company. The role of the designer (especially in a *radical* design-driven innovation company) is less significant. After that comes the concept generation phase, that implies a deep analysis of a targeted user, but it is actually based on the previous socio-cultural research carried out in the precedent phases. Finally the product development phase technically develops the idea generated in the previous phase. During this step the contributes of designer and product developer are crucial.

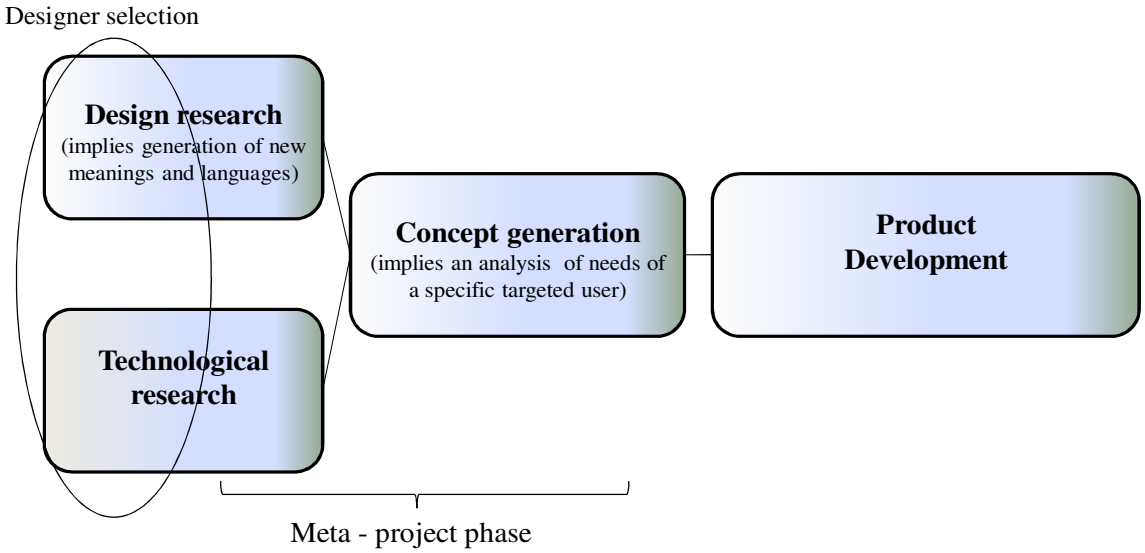

Figure 18 Design-driven innovation as a research process (adapted fromVerganti, 2008)

While user-centered design moves its attention upstream from product development to concept generation, the investigation of design driven innovation moves its focus even earlier in the innovation process, where firms sense the dynamics of socio-cultural models and think of new languages and visions with the aim of exploring new meanings and languages. Differently from concept generation, this is more a knowledge-based process rather than a creativity-based process.

CHAPTER 3

ORGANIZATION OF INNOVATION

In this chapter the second macro topic of design innovation is introduced, such as the internal an eternal organization of the innovation process. Literature about this theme has been read through and its review is here presented. The relationship between socio-cultural models and product languages depends on the interactions that take place between stakeholders within and outside the company. Designers are not considered the only actors who are able to support companies to identify, capture, interpret and integrate knowledge about product semantics. Instead, the diffusion of product languages depend on several types of interactions among different stakeholders: users, firms, designers, products, communication media, cultural centers, schools, artists, etc. As already stated in chapter 2, Verganti (2006) argues that "this knowledge is present within our environment in a sort of networked process, the design discourse, that occurs through several explicit and tacit interactions among several actors both in a global and local context" (see Figure 19). Observing the design discourse knowledge transfers move from the left side of the model (educational institution, artists, technology suppliers) to the right side (media, professional consultants, retailers).

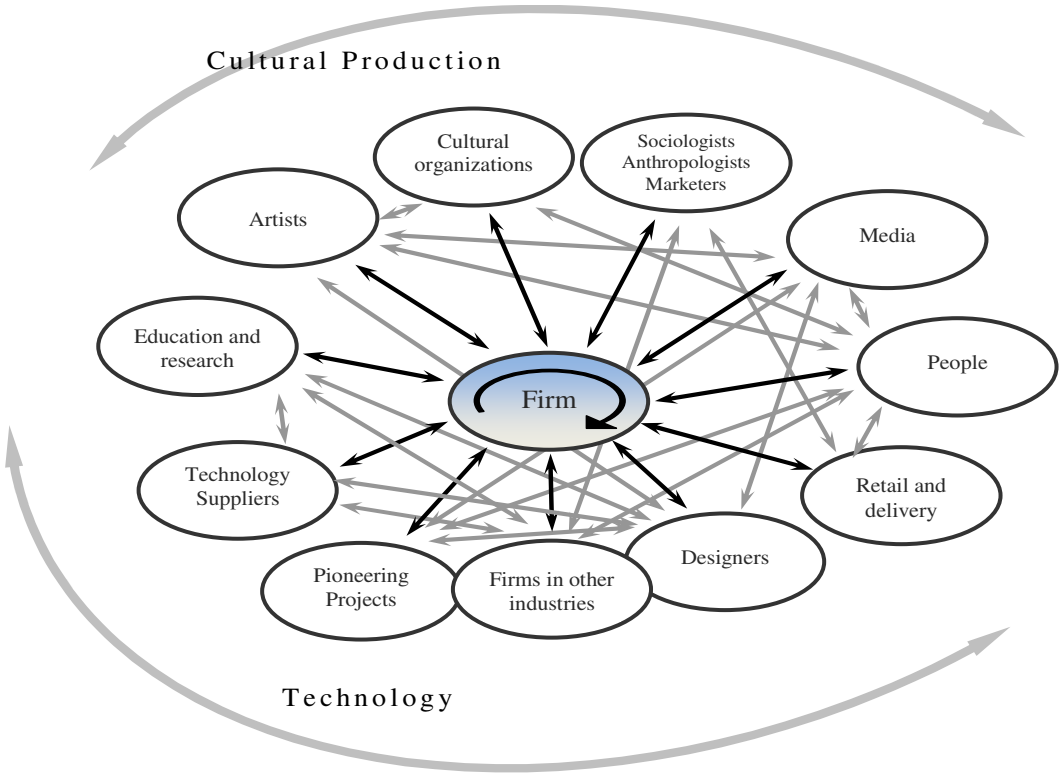

Figure 19 The design discourse surrounding a firm (Verganti, 2006)

In order to manage design driven innovation, Italian leading companies such as Alessi, Kartell, Artemide, B&B Italia have developed a significant capability to "understand, anticipate, propose and influence the emergence of new product meanings". Knowledge about the dynamics of socio-cultural models is tacit, it is not codified in books or in "socio logical scenario of the future" because design driven innovation foresees the proposal of meanings that are able to modify the current scenario. Innovation in the cultural industries is based on the interaction between several interpreters, such as designers, firms, artists, schools, that develop their own investigations and researches and they represent an interactive research laboratory. Each actor that takes part to this dialogue can support the company in the identification of signals that can potentially become future trends, and on the other hand, influence meanings, aspirations and desires of people and users.

All these actors are interested in understanding possible future scenarios and they also have the possibility to influence user needs and desires with their actions and outputs (products, projects, reports, artworks, shows, etc.). "Design-driven leading companies consider these actors key interpreters of the evolution of future scenarios and for this reason they develop continuous dialogue about possible visions of the

future, share information about emerging trends, verify the importance and the applicability of their assumptions. In this way they can be part of design discourse and, on the other hand, influence its evolution. The networked research process can be considered one of the principal difference between design driven innovation and user centered design". (Verganti, 2009).

Design driven innovation is based on a huge amount of relationships that are spread widely outside the boundaries of the firm. Furthermore it is based on sharing and exchanging of knowledge about socio-cultural models, product languages and meanings. Surely one of the main actors of the design discourse is the designer, since he/she acts as interpreter of customer needs and translates them into real product ideas. In addition to designers, other actors that work in the companies participate to the design discourse such as management executive, gatekeepers and knowledge brokers:

- *Designers*. Designers capture, recombine, and integrate knowledge about socio-cultural models and product semantics in several different social and industrial fields, designers act as brokers of design language and contribute to create breakthrough product meanings (Verganti, 2003). The designer often even outlines a strategy for the whole company or a whole product family, and plays a unique role in forecasting trends and in translating abstract knowledge into actual ideas and concepts. Styling elements can be used to enhance the product's performance or to make sure that original and particular qualities are noticed. Moreover, affective symbols can be used to communicate product meanings and messages about the user and they are signs that tell something about the user in its context. Different product design, such as the use of time-related symbols or national symbols, can be used to express the customer's belonging to a group. (Tennity, 2003; Gierke et al., 2002)
- *Management executive*. Rochford and Rudelius (1997) suggest that innovation requires both the sponsorship of someone in the organization who has political influence, and someone who has access to necessary resources. It also requires support by a person who is the "sponsor man" of the new idea. Those supporters guide innovation through the organization of the decision-making process. Hamel and Prahalad (1995) suggest that managers should focus on investigating the external issues, such as the implications of a particular new technology, they should spend time looking outside the company's boundaries, consulting

colleagues, building a deeply, shared view of the future. Lifestyle trends have to be understood by the management executive, and this requires a deep and broad curiosity from them.

- *Gatekeepers*. They allow the communication between team members and external actors. Caldwell (1990) discovered that team members with similar backgrounds communicate more easily with each other and the more the cultural difference between interpreters is big, the more communication problems occur. Gatekeepers have the purpose to reduce the communication gap between different units within and outside the organization. (Cohen and Levinthal, 1990).

In order to differentiate themselves from other competitors design-driven companies should define a clear editorial line, such as a frame and orientation that has to be taken in account by every designer and in every project (Dell' Era and Verganti, 2010). Companies have to maintain a durable relationship with designers and every project is the result of this relationship. Since designers often elaborate original concepts the correspondent firm has to limit the technological constraints that might compromise the designer's freedom and innovativeness. Furthermore, a successful design-driven company does not base its work on a specific designer, but is has to be able to identify and manage a portfolio of designers. They also might have different backgrounds and come from different industrial fields and this has to be interpreted as a way to collect and set different and creative competencies by the company. In so doing the company has more possibilities to enrich the knowledge concerning social and cultural phenomena and consequently to introduce a breakthrough innovation in the launched product.

Dell'Era and Verganti (2010) come to the conclusion that innovators tend to rely on external designers to a greater extent than the competitors (imitators), since a large part of the product portfolio is developed in collaboration with designers coming from different fields. Moreover, innovators tend to develop half of their products in collaboration with foreign designers and the educational backgrounds of those designers are extremely heterogeneous. Companies developing design driven innovations have to be able to provide the necessary flexibility and dynamism. The project resources involved in the innovation process have to be organized with the purpose to favor the

creativeness and the possibility of exploration and recombination. Iansiti and Levien (2004) introduce the concept of "business ecosystem" and assert that drawing the precise boundaries of an ecosystem is impossible, but still the company has to be extremely open to the contribution of innovative and external resources. It may be said that also a radical innovation in meanings is usually the result of a collaboration between "internal" designers and external contributions. As a consequence, the company which actually wants to be radically innovative has to be able to attract and select key designers and this requires a deep knowledge of the world of innovation.

3.1 INTERNAL ORGANIZATION

In this following section a literature review about internal organization is presented. First of all, the historical background related to the internal organization of research departments is briefly introduce. Afterwards the dimensions of the internal organization and the structure of Design-Driven Laboratories are analyzed, with a special focus on the theoretical part. Finally the main theories concerning the external organization are presented, regarding in particular the relationship between firm and external actors of the design discourse.

3.1.1 R&D ORGANIZATIONS: THE FIVE GENERATIONS

Research and development (R&D) is composed by several activities that have changed many times over the last 50 years from the point of view of management styles and organization: the first generation was an exclusively technology push model, while the last has reached a progressive integration with a market pull approach. In literature five principal R&D generations are described (Roussel et al., 1991; Rothwell, 1994; Miller and Morris, 1998; Chiesa, 2001; Nobelius, 2004). As we can see in Figure 20, the first generation is characterized by a low level of interaction with the rest of the company and strong focalization on future technologies. The management style corresponds to the technology push paradigm and the R&D unit acts as a sort of ivory tower where employees do not have any interactions with other business functions. In the '50s R&D units were centralized at the corporate level and for this reason they had great autonomy and possibility to identify the research fields more interesting.

Corporate research labs had to promote technological innovations and to stimulate scientific advances.

R&D Generations	Context	Process Characteristics	Company response	Managerial approaches
First generation	Black hole demand (1950 to mid-1960s)	R&D as ivory tower, technology-push oriented, seen as an overhead cost, having little or no interaction with the rest of the company or overall strategy. Focus on scientific breakthroughs	Corporate research labs	• Stimulating scientific advances • Choosing location after competencies
Second generation	Market shares battle (mid-1960s to early 1970s)	R&D as business, market-pull oriented, and strategy-driven from the business side, all under the umbrella of project management and the internal customer concept.	Business unit development	• Appointing internal customers • Ideas gathered from market
Third generation	Rationalization efforts (mid-1970s to mid-1980s)	R&D as portfolio, moving away from individual projects view, and with linkages to both business and corporate strategies. Risk-reward and similar methods guide the overall investments.	R&D projects	• Structuring R&D processes • Evaluating long-term technology strategies • Integrating R&D and marketing
Fourth generation	Time-based struggle (early 1980s to mid-1990s)	R&D as integrative activity, learning from and with customers, moving away from a product focus to a total concept focus, where activities are conducted in parallel by cross- functional teams.	Cross-functional projects	• Parallelizing activities • Involving suppliers & • lead customers • Integrating R&D and manufacturing
Fifth generation	Systems integration (mid-1990s onward)	R&D as network, focusing on collaboration within a wider system involving competitors, suppliers, distributors, etc. The ability to control product development speed is imperative, separating Research from Development.	Cross-boundary alliances	• Involving company network • Focusing integration of systems • Separating / linking R&D

Figure 20 The five generations of R&D organizations (Roussel et al., 1991; Rothwell, 1994; Miller and Morris, 1998; Chiesa, 2001; Nobelius, 2004)

In the second generation the market pull approach prevailed and it was characterized by an increasing importance of the marketing function in the innovation process (Nobelius. 2004). This historical period (mid-1960s to early 1970s) was characterized by the necessity to increase the market shares (Rotwell, 1994) and the main goal was not to propose a new technological standard, but to obtain maximum margins in the periods. For this reason R&D units were incorporated into single business units and turned their attention to the customers' needs, consequently the marketing function assumed the integration role between several business functions. In the '70s the interpretation of technology push and market pull paradigms shifted from alternative solutions to complementary ones. Two approaches can be applied in a synergic way giving life to a more interactive research and development paradigm rather than linear as in the first generations. In this historical period, R&D units were characterized by a strong resource rationalization. The main goal was developing a balanced portfolio of R&D projects in terms of risk and temporal horizons of investments. For this reason, this R&D generation favored a great diffusion of project management techniques with the purpose to get all consequential advantages to operate for projects. At the same time a progressive integration among R&D and Marketing occurred, shifting from a sequential collaboration to a parallel and cyclical interaction in order to anticipate in the first stages of the innovation process all possible constraints. The fourth generation considered the R&D as an activity of integration between client and enterprise, it introduced the concept of lead user and foresaw the early involvement of suppliers in the innovation process in order to compare different perspectives and consequently to increase the cross-functionality. The fourth generation emphasized the role of feedbacks and the fact that innovation is by definition cross-functional. In the '80s, the economic context was characterized by the introduction of new functionalities and new services associated to the existing products as a new kind of differentiation. The fifth generation of R&D proposed to manage the innovation process as a network, in which all those people that could bring useful know-how (suppliers, clients, distributors and even competitors) had to participate. The role of teams shifted from cross-functional and cross-disciplinary to cross-firms and cross boundaries. The necessity to share the huge technological investments and to divide the Research department from the Development department, which consequently increased costs and resources, spontaneously suggested to cooperate with other subjects and extended the relationships to different interpreters of

the design discourse. This is exactly the foundation of the radical design innovation process carried out nowadays among Italian furniture companies.

3.1.2 DIMENSIONS OF THE INTERNAL ORGANIZATION

Basing our considerations on the previous paragraph about the five generations, we can say that there is not a better configuration, instead the performance evaluation cannot be separated from the economic context and from the purpose of the R&D department (Chiesa, 2001). The analysis of literature shows that R&D studies are managed by means of projects. For this reason, the study of organization of research and development is conducted on two different levels of analysis. The first level considers the organization of the laboratory as a whole, while the second level studies the structure of individual project teams. These two different approaches to the organization of the innovation process reflect the difference between the two realities analyzed during this thesis work, such as the Italian and Swedish furniture industry. As we will deeply discuss in the following chapters, the innovation process occurring in the Italian furniture industry is based on a laboratory approach, while the Swedish one is based on a project-team approach.

The study of literature has identified three major dimensions: size, composition and integration. The issues discussed on each dimension vary with the level of analysis, and for this reason the three following sections are explained below. The concept of downsizing the laboratory is related to the use of slack resources (and therefore an oversized staff). The advantages of such choice arise from the flexibility and the ability to open lines of research with a totally technology push approach, which may lead to radical innovations. However, the risk is a chronic inefficiency of research and development (i.e. resources are slack resources in excess) and the possibility to create investment that do not follow the corporate mission and absorb financial resources without leading to any profit (Keegan and Turner, 2000). Regarding the individual team, you cannot find an optimal size valid for every kind of project because of the peculiarities linked to internal company issues (organizational culture, resources available) and the external environment (project risk, undertaking competitors), and at the same a ideal leadership style cannot be found, according to the situation faced (Clark and Wheelwright, 1993). However, by adopting the perspective of social sciences, there is a number of people in

the same team (8/10 people) beyond which the benefits related to the choice of working in teams fade down. In particular, the opportunity to elaborate cognitive processes in groups (groupthink) decreases as well as the internal cohesion of the team, creating phenomena of fragmentation into sub-groups and prevalence of individual units (Tosi et al., 2002). In a group of *n* people, the direct relationships that might be established are *n (n-1) / 2* (Bartezzaghi et al., 2004) and then the organizational complexity grows very rapidly with the increasing size of the team, with effects both on the performance of the whole team and on the motivation of the individual (Tosi et al., 2002). Following these considerations it is clear that we need to reduce the large number of working groups in order to enhance these benefits. The literature identifies two methodologies in order to reduce the size of the team. The first one asserts that the establishment of a core team should include the representatives of specialized teams working on individual aspects of the project (Clark and Wheelwright, 1993). The alternative solution of the problem consists on a breakdown of the work in work packages, which are then assigned to sub-multifunctional teams, after establishing a coordinating role aiming at caring about the final goal of this project (Hoahalan and Markham, 1996). This dimension first examines the type of resources in the research group, and then the cultural background and experience accumulated by each resource of the laboratory. A further problem concerns the type of contract that is established between the human resources and the R&D department. We must consider the value that these projects may have in the long term period for the enterprise and the need not to lose the accumulated knowledge (Bartezzaghi et al., 1999).

Within a single team the selection of components is crucial, since they have to be selected based on relevant skills. Regarding the project leader particularly important characteristics are social and leadership skills, as well as skills in all areas covered by the project to discuss with each team member (Muffatto, 1998). The individual components of the working group should have motivation and attitude to complement their skills with those of other components, in addition to technical knowledge in their area of competence (Hart, 1996). Regarding the composition of the team we must consider two roles that have to be covered in the process of a working group establishment: the sponsor and the champion (Muffatto, 1998). The sponsor is essentially the link between the team and the rest of the company and has the task of legitimizing the validity of the project

(and thus the very existence of the team) within the organization, presenting the results of the work (Tosi et al., 2002). The champion is instead a member of the team who deeply believes in the objectives of the project, and he has to contribute to maintain motivation and enthusiasm inside the team. This figure becomes important when a project might be abandoned for various reasons: if the champion is really motivated he keeps being updated about the development of the project itself, and to propose the project later on to the senior management. In this way the new team is allowed not to start from a green-field situation, but instead it gives the possibility to exploit the results which were already obtained before the closing of the project. Integration concerns the link with the rest of the enterprise and the problem regarding the strategic decision to create an internal R&D laboratory or outsource the research activities. For the benefit of the second hypothesis the possibility to make variables costs instead of fixed increases, since R&D researches have to be committed only when there is an actual need, "building an organizational structure that has a cost even if unused has to be avoided" (Ambèc and Marsh, 2001). One of the problems associated with this choice, however, is related to the coordination: undoubtedly having a R&D totally outside can create severe problems in managing the relationship, especially when the center seeks to optimize its utility function, given the opportunity to work with companies among their competitors and use the information obtained, and exploiting the information asymmetry to their advantage (McDermott, 1999).

Besides the integration of R&D function with the rest of the company, the integration of people dealing with individual projects has to be considered. In this type of analysis two distinct issues can be identified: the communication within the group and the work organization. Particularly interesting is the concept of redundancy, which may be of two types: the first indicates the possibility not to fully saturate the inputs, while the second considers the fact that each team member is able to play multiple roles and has therefore the ability to replace another member in case of need (Morgan, 1998). Regarding communication, you can use the four dimensions identified by Clark and Wheelwright (1993) to evaluate the integration of a team:

- Quality of communication: the first hypotheses regards the exchange of documents, corresponding to the simple transmission of information without an immediate search for a feedback from the interlocutor, and the face-to-face

communication, which provides a direct contact between members and the sharing of ideas through preliminary sketches and models.

- Frequency of contacts: it takes into account the number of contacts between the members of the group. If it is high it means that the team discusses each step of the choral work through continuous meetings (discussions piece-by-piece), and when it is very low it proceeds by processing block (batch) assigned to individuals or small sub-teams, presenting the results at the end of the batch in the few meetings that involve the whole team.

- Direction of communication: monologue corresponds to the situation where each component simply communicate its findings to the team, instead dialogue indicates a continuous dialogue among members of the working group in order to identify a solution that optimizes the overall result.

- Timing of communication: the temporal location of the contacts can be found, so if they are located in the early stages of the project (strategy of anticipating constraints), or concentrated at the end of the project in order to validate the solution with the risk of recycle of information.

3.1.3 THE ORGANIZATION OF DESIGN DRIVEN LABORATORIES

According to Dell' Era and Verganti (2009), design driven innovation companies have to combine researches on technology and new technical solutions on one hand, and analyses about the evolution of socio-cultural model on the other hand, “separating research form development and accessing the knowledge dispersed in a huge network of actors” (Figure 21).

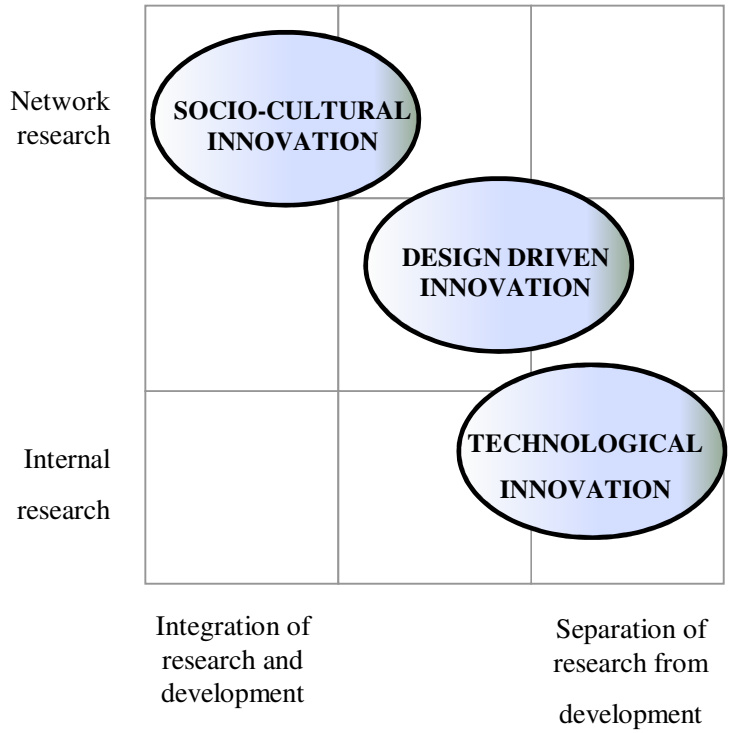

Figure 21 Socio-cultural innovation, Design driven innovation and technological innovation (Dell'Era and Verganti, 2009)

Inside the company we can identify important actors who play an active role in the design innovation process:

- Technologist: he coordinates the production department and he contributes to find better solutions about product and process development, such as introduction of new materials or surface treatments.
- Socio-cultural researcher: he participates to fairs, artistic exhibitions, fashion shows and cultural events and his/her purpose is to find out new and interesting meanings to be embedded in the product.
- Marketing expert: he has to understand marketing needs and connect laboratory researches with the marketing strategy.
- Designer: he can be both internal to the company or freelancer and in his activity he has to take in account available technologies, strategic objectives of the companies and emerging trends in the society.

The internal communication includes richness of media, the frequency of communication and the timing, such as the time distribution of the contacts between team

members. According to the same article (Dell'Era and Verganti, 2009) we can identify three types of Design Driven Laboratories (DDLs) where actually design innovation takes place (Figure 22). The classification is related to the importance that companies give to innovation of languages and meanings or to the innovation of the functionality of products.

- **Linguistic DDLs** focus on "the generation of mew meanings and languages. Their products are characterized by strong communicative and semantic impacts that confer ironic and symbolic values to the products". In this context there is a great and more intense interaction with external actors rather than with internal departments. These collaborations are with designers of other industries and also there is a massive participation in fairs, exhibitions, fashion shows, etc. Most of the time these companies develop and publish magazines to communicate their findings to the design discourse.

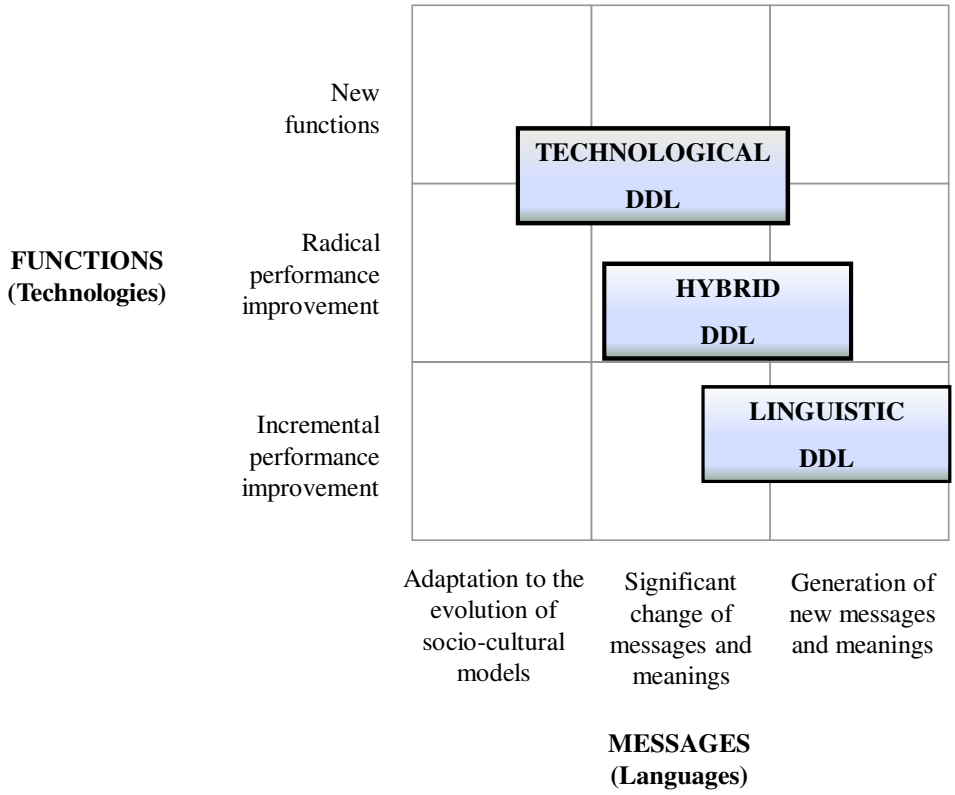

Figure 22 Innovation strategies adopted by design-driven laboratories (Dell'Era, Verganti, 2009)

- **Technological DDLs**: they give more importance to the functional needs of the product than to the semantic ones. Technologists play a really important role since they focus on identifying new technical opportunities.

  The marketing department has the task of identifying customers' needs and communicate this information to technologists. On the opposite side socio-cultural researchers and designers do not play any particular role. The actors that actually contribute to the innovation process are internal to the company: marketing and production department. There are no strong relationships with external interpreters but at the same time these companies develop collaborations with local universities, and the contacts among the several actors are formalized through events such as conferences and workshops.

- **Hybrid DDLs**: they can be considered at an intermediate level. They work both on new technological and linguistic solutions and they are supposed to find a compromise between the collaboration with the company departments (marketing and production) and freelance designers. Besides them, usually these companies develop collaborations with companies of other industries and have a strict relationship with the world of art.

Moreover it must be said that Linguistic and Hybrid DDLs are characterized by a strong emphasis on the internal communication among the members of the laboratory, preferably informal and not standardized.

3.2 EXTERNAL ORGANIZATION

We define an external organization the multitude of relations between the design laboratory (or the project team) and the external actors surrounding the company. Table 1 Dynamics of the design discourse and guidelines for identifying and attracting key interpretersidentifies the dynamics of the design discourse and the guidelines for identifying and attracting key interpreters.

Dynamics of the design discourse	Guidelines for identifying and attracting interpreters
• Debates	• Listen to multiple voices
• Skewed distribution of interpreters	• Find key interpreters
• Trasnfers	• Harness forward looking researchers
• Bridges	• Leverage brokers and mediators
• Whispers	• Immerse the company in the discourse
• Two tiered geography	• Hybridize the local and the global
• Elite circles	• Attract interpreters by acting as an interpreter
• Obsolecense	• Keep searching for new interpreters and circles

Table 1 Dynamics of the design discourse and guidelines for identifying and attracting key interpreters (adapted from Verganti, 2009)

First of all, the design discourse is not a plain and straightforward dialogue but a noisy and usually confused debate among people, where different interpretations coexist. The insights among the discourse are scattered among several interpreters and the company develops its own vision by combining all these inputs and perspectives. According to this theory the variety of the perspectives is crucial as well as the heterogeneity of sources of information. Secondly, key interpreters are not only designers but an array of unrelated resources, where variety and heterogeneity are essential. Within the design discourse there are different and various proposals and they become ambiguous as participants move from utilitarian features to emotional and symbolic meanings. In order to find key interpreters a company should first define the *life context* that its innovation process addresses. The company should find out who are the interpreters who conduct research on how people could give meaning to things in that same life context, and who are likely to influence the emergence of new meanings. An important statement is that among a variety of interpreters only a handful have the potential to generate radical innovations of meanings, since the number of interpreters in the design discourse who can provide radical insights is small. The difference between innovators and imitators seems to come from which interpreters

firms choose. The company needs to choose the ones who provide knowledge and seductive power. Figure 23 underlines that the quality of interpretation is positively skewed.

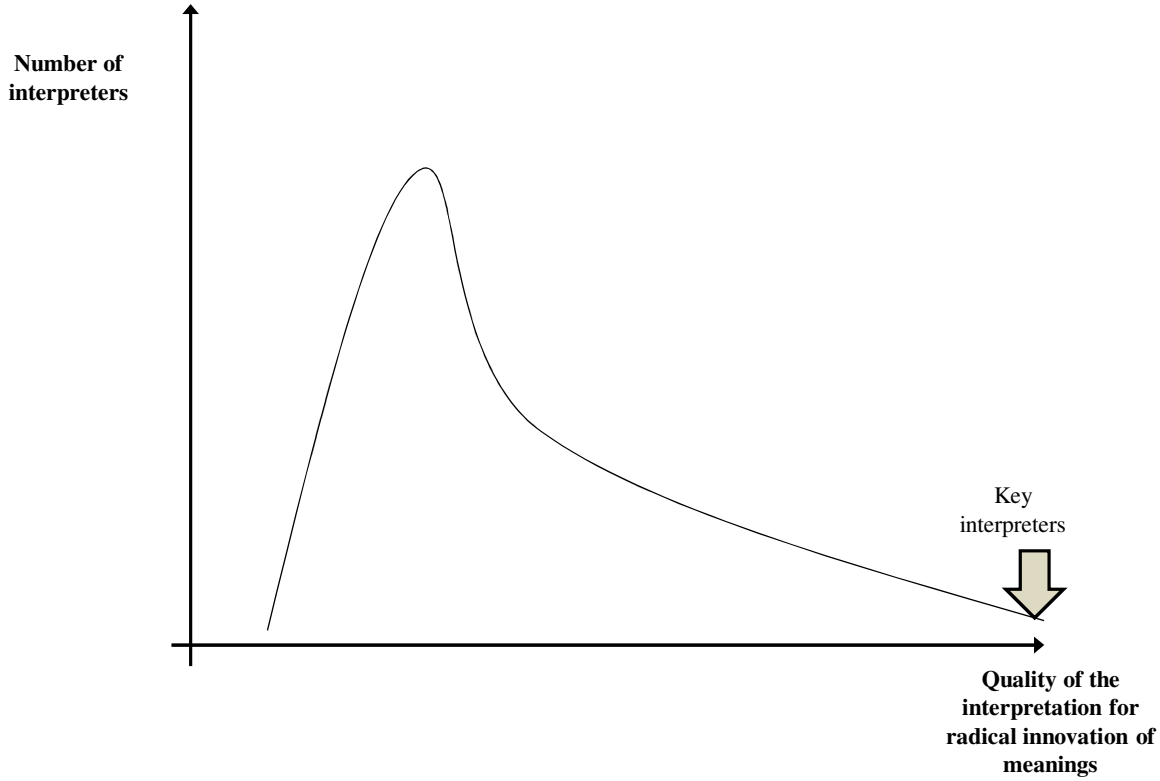

Figure 23 The skewed distribution of interpreters in the design discourse (Verganti, 2009)

Once the company has identified the key interpreters, they have to be attracted by the project that they are going to build. The designer and all other interpreters are treated as members of the same family, the relationship between designer and manufacturer has to be extremely personal and all together realize the project. Moreover, the best way to attract key interpreters is to pay them back with assets: technological capabilities and knowledge of meaning. That is why even the organizer of the project has to take part to the design discourse as a key interpreter and not simply to exploit it. Designers working for a design-driven innovation company appreciate technologies, flexibility and brand asset that they rarely find among competing manufacturers. That means that a radical innovation implies a design circle, where breakthrough thinking benefits from interaction, mutual trust and sense of mission typical of circles. “We need to continuously search for new talents if we want to create radically new languages and stay ahead of competition”

said Alberto Alessi, chairman of the homonymous Italian company. The design discourse suffers from obsolesce and at a given point relying on the same interpreters may even become a barrier to further innovation and the network should consequently be refreshed. Firstly an external interpreter can become obsolete because when she becomes a talent she starts focusing on reinterpretation of her own breakthrough vision, others imitate her and she may end up working for her competitors. Secondly a change in the context might occur and it may spoil the network to investigate future changes in languages and meanings. Consequently the challenge for the firm is not only changes in technology but also the need to refresh their network of interpreters.

One of the most important part of the collaboration between companies and of the collaboration between the company and the external actors of the design discourse is the definition of the relationship.

- The first kind of setting is the *ex-ante* relation. The rules of the collaboration are settled a priori and they are linked to the strategic line of the companies involved. The limit of this setting is that everything is settled from the beginning and thus the flexibility is low.

- The second type is called *ex-post*. The collaboration is informal from the beginning and then an operation of *sense making* occurs, in order to the define the strategic line of the collaboration. In this way the collaboration is more flexible, even if sometimes it can happen that the first steps are not aligned to the strategically objectives of the companies (Olsen e Torsvik, 1995).

- The third type of collaboration establishes that knowledge sharing among the companies is casual and not regularized by precise deals. According to this, the most important problem is that all the activities are not formalized and might not be aligned to the strategy of the companies (Freeman, 1991; Cainarca et al., 1989).

In order to find out the partner of the company the lacking competences and the complementary resources have to be traced (Theter, 2002; Belderbos et al., 2004). For instance, in order to introduce an innovative productive process a strict collaboration between the company and the supplier is requested (Belderbos et al., 2004). To introduce

a product innovation the customer demand has to be investigated and a collaboration with the marketing department has to be extremely deep. A particular kind of collaboration is between competitors. Even if it is difficult to share data and information, with a collaboration between competitors radical changes might be introduced for the market. (Fusfeld and Hacklisch, 1985). Furthermore, a collaboration with universities and research centers might lead to radical changes; most of the time universities come up with radical inventions that have to be economically applied to the industrial field (Belderbos et al., 2004).

The purpose of this following part is to identify the individual dimensions that might characterize a collaboration, in order to find out which configuration fits with the design-driven innovation management. Some dimensions of a relationship between two companies (or between a company and an innovation laboratory) are the following:

- Extent of collaboration: it indicates the number of active members involved in the collaboration. Depending on that number the complexity of coordination increases, but also in proportion the amount of skills brought into play (Freeman, 1991).

- Type of participation: participation is defined as a dynamic model where actors who are active in the report might change (D' Atri, 2004).

- Regulation of participation: the legal regulation is an important document where the rules are determined ex-ante. The adjustment procedure is instead based on informal relationships of individuals of R&D (D' Atri, 2004), and may not turn into a partnership from the formal point of view.

- Length of collaboration: the duration may vary depending on the type of innovation, but a temporary relationship may lead to opportunistic behavior, while the long-term oriented cooperation also includes the involvement of top management to ensure alignment with the strategic objectives (Soh and Roberts, 2003).

- Level of decision-making delegation: the problem of proxy must be studied carefully, because information on long-term objectives of the company is in the hands of a few people, while those who manage the relationship on a daily

activity are much more oriented to the short term; so a good level of delegated decision-making can lead to greater flexibility but also to a progressive loss of adhesion to the strategic objectives (Bartezzaghi et al., 1999);

- Technology: it influences the performance of the collaboration in terms of quantity and quality of information exchanged, the technologies used to manage the relationship can be considered a proxy for the efforts made by individual company report. It is very different to use an integrated information system, which implies a significant investment, compared to the use of Internet technologies, which may imply even an opportunistic behavior (Verganti et al., 2004).

In order to coordinate the collaboration between the company and the designers, there is a person called *boundary spanner* (Pieple et al., 2005), who has to contribute to assicurate the *creation of difference* of the designer and at the same time addresses the company's needs. The mission of the boundary spanners (also called gatekeepers) is to collaborate with different people, get information about the internal processes occurring inside the company and communicate them to the external designers in order to make the process more sustainable. They usually have a deep knowledge about the modus operandi of the company, such as the strategy and the main objectives.

3.2.1 THE ROLE OF THE DESIGNER AS BROKER OF LANGUAGES

Among all interpreters in the design discourse with which a firm may interact special attention is given to designers. In companies where design driven innovation is applied designers act as brokers of knowledge on languages and also on technologies. As it will underlined in the following chapters, whereas radical design driven innovation, especially carried out in Italy, foresees that designers embed the role of brokers of languages, in other companies, especially in Sweden, designers are valued for being brokers of technologies. According to Hargadon and Sutton (2002), designers access to different technological solutions with organized routines for acquiring and storing knowledge in the organization's memory. Then they recognize and blend existing ideas transforming them into new and innovative combinations. The authors have individualized a process model composed by five separate phases (Figure 24):

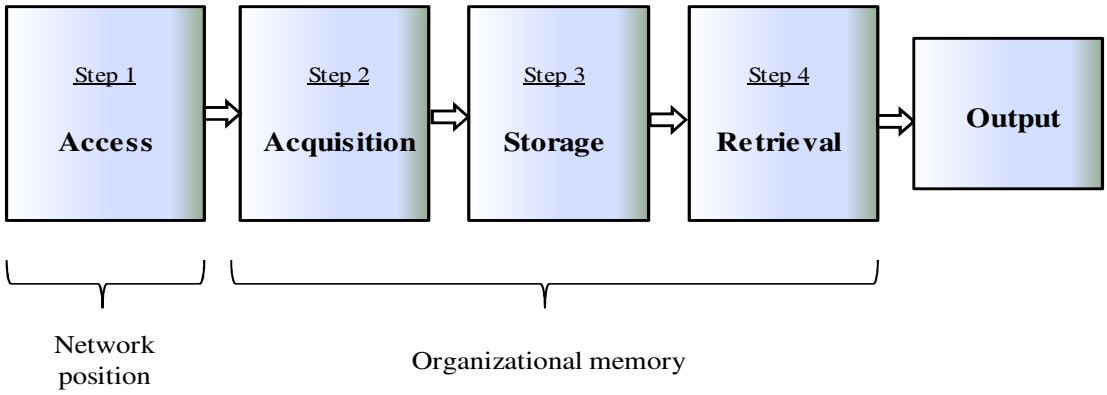

Figure 24 How innovation occurs through technology brokering (adapted from Hargadon and Sutton)

- Access: designers are exposed to technological solutions that are potentially valuable, yet previously unseen in others.
- Acquisition: designers bring these solutions into the organizational memory and into potential use in future design projects.
- Storage: The potential solutions remain in memory until design projects coming up might benefit from them.
- Retrieval: Designers working on new products retrieve technological solutions from organizational memory in appropriate forms to fit the new combinations that they are creating.

One crucial aspect regarding the efficiency of this brokering process is related to the ability of the designer to be well connected to the industries that offer technological solutions, and to enable the flow of information between the industries that have such knowledge and those that do not have them. Reasonably there also has to be an organizational structure inside the furniture company that enables this brokering of knowledge. One of the main occurring process is the brainstorm, that pulls together groups of designers to work on an identified problem. Usually designers call these meetings to seek the help of other designers who are not already involved in a particular project, but who can actively contribute to the innovation process.

Design languages and technological solutions can easily move across different socio-cultural contests and across different countries, even if this process is peculiar for technological solutions that are less culturally embedded than socio-cultural ones and they are weakly linked to the cultural context in which people live. Anyway, design companies usually involve foreign designers in their innovation process, because they favor exchange of information and styles beyond the firm's boundaries and enable the development of radically innovative products. This strategy guarantees better performances for those companies that compete at the international level and need to satisfy desires and expectations of different cultures. Designers, as brokers of product languages, can support companies in the interpretation and development of languages that can match social and cultural needs, although this process is particularly complex and it requires a deep understanding of the local and global situation. This particular activity foresees a deep and long-lasting relationship between designers and company, that occurs especially in Italy. The collaboration between Swedish furniture companies and design consultants is usually temporary and this is the reason why the designer is chosen according to her suitability with the project planned to be realized. The non-exclusive relationship with designers can anyway be interpreted as a possibility to introduce new messages and breakthrough proposals to the market, and to increase the variety and heterogeneity of products.

3.2.2 MANAGING THE NETWORK OF INTERPRETERS IN THE DESIGN DISCOURSE: ALLIANCES AND CO-DESIGN

Managing the interaction with key interpreters in the design discourse is a crucial issue. Indeed, Italian manufacturers place great attention to identifying the key interpreters in the design discourse, attracting them and developing with them a privileged relationship. A good question is the way by which firms pursuing design driven innovation should effectively select, attract and cooperate with key interpreters, and how they should be rewarded. Several factors that can lead to successful cooperation have been identified and analyzed in the literature, such us trust, cognitive proximity and weak ties (Granovetter 1982, Noteboom 1999).

A firm that is supposed to apply design-driven innovation needs only to get in direct actors with interpreters of the design discourse, but also to interpret this knowledge, to

select the important suggestions and reject the others, to interiorize them and finally to work out its own unique proposal. Actually it should be interesting to understand how selection and assimilation of knowledge on new meanings and languages occur. One of the most interesting model about this theme is the concept of absorptive capacity, introduced by Cohen and Levintal (1990). An organization's absorptive capacity is indeed defined as its ability to understand and value external knowledge, and therefore to learn and adopt new approaches starting from it. Assimilation and exploitation of external knowledge may occur only when the organization has already had prior experience in its field (combined together with diversity of expertise) and it is supposed to start a long circle of creation of absorptive capacities, interacting with the design discourse and establishing strong relationships with successful partners.

CHAPTER 4

RESEARCH METHODOLOGY

In this fourth chapter the research methodology used to address the objectives of this thesis work is presented. Firstly the purposes of the thesis and in particular of the research regarding the Swedish furniture companies will be briefly reminded. Afterwards the outline of the study further explained and illustrated. Initially a brief description and presentation of the Italian companies objects of the analysis will be done and, afterwards, each phase of the research process concerning the Swedish furniture business will be described, from the selection of the secondary information, the selection of the case studies and of the respondents, finally to the data analysis related to the interviews. At the end a brief anticipation of the results, limits and follow-ups of this research process and generally of the entire work will be presented, although a deeper analysis of those results will be further investigated in the last chapter, where conclusions and managerial implications are derived.

4.1 OBJECTIVES

The main objective of this research is to analyze the different way by which the design innovation process takes place within the Swedish furniture industry, in order to compare them to the Italian ones and find out the main differences and commonalities. Basing my observations on the already explained theory about design-driven innovation and on the design-innovation process in the Italian furniture companies, it has been necessary to interview four Swedish furniture companies. The targets of this interviews have been designers as well as product developers and process managers, in order to have a broad view about the innovation process in those firms. The focus of the interviews and of the consequent analysis has been the innovation process, the phases that it includes and its organization, both from the internal and external point of view.

4.2 OUTLINE OF THE STUDY

In order to achieve the objectives and elaborate a reference point for the further research, a research process has been followed (Figure 25). Firstly a literature review has been necessary. Scientific articles and texts concerning innovation, design-driven innovation in the furniture industry and corporate organization have been collected in order to gather information and build up a consistent knowledge about this topic. In particular it has been acquired knowledge about the theory of design-driven innovation, actually applied among Italian furniture companies and in so doing it has been possible to make a comparison with the Swedish furniture industry.

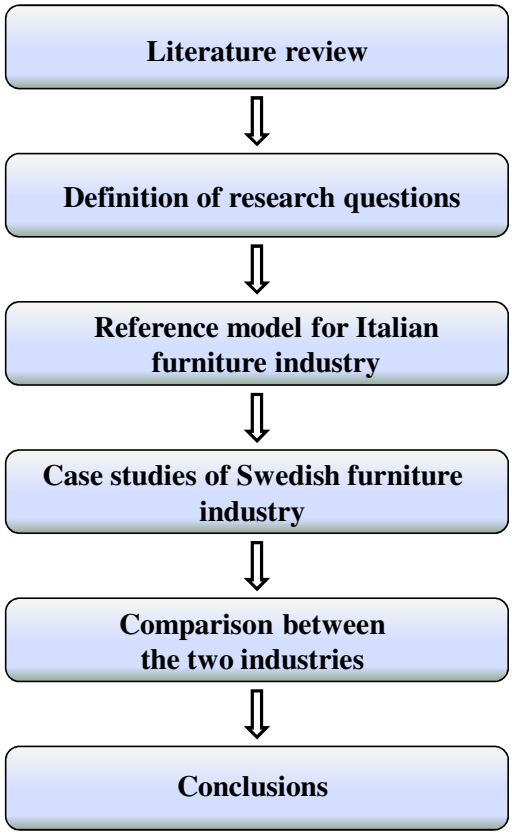

Figure 25 Outline of the study

According to the literature analyzed, research questions have been formulated in order to gather information about the Swedish reality. At the same time the reference point about the Italian furniture industry has been elaborated. The main topics that have been faced have surely been the ones analyzed in the previous section of literature review, with the focus on process and organization of innovation. During the interviews held by the four Swedish furniture company two different main kinds of people have been interviewed. From one side, designers have given to me an idea about the design process occurring in the company. On the other side, product developers and production managers have introduced to me the structure of the innovation process itself and the organization of the new product development process. Afterwards data collected during the interviews have been analyzed and illustrated through the presentation of case studies. A model about innovation in Swedish companies has been elaborated and it has been compared to the corresponding one for the Italian furniture companies. After that, conclusions have been presented, among which the most important are the managerial implications regarding the

relationship between furniture company and designers and also the profile for the right designer fitting with the company in both realities.

4.2.1 LITERATURE REVIEW

As a starting point of the research, literature about innovation and design-driven innovation has been read in order to possess a consistent knowledge about this topics. In particular the new theory of Design-driven innovation has been one of the first topics analyzed in detail, that also actually captured my attention. The main topics analyzed concern the strategies of innovation, mainly read in academic texts. Among them design-driven innovation strategy has been deeply analyzed reading the book "Design-Driven Inonvation" by Roberto Verganti, Harvard Business Press, 2009. This book has been the milestone upon which my research has been based. Afterwards, some case studies about Italian furniture industry have been analyzed in order to collect information about it. Basically for each one of the two companies analyzed (Kartell and Alessi) two case studies have been read through and further investigated. In support of that, many scientific articles about Italian furniture companies have been analyzed and after this phase the main issues regarding Italian furniture companies have been clearly identified. The literature analyses have been fundamental for this research since it has been the basis for the elaboration of the reference model, the presentation of the Swedish case studies and, above all, for the final comparison and the identification of the final results and managerial implications. The literature analysis has made it possible to link the research data directly gathered during the interviews and the conceptual models already explained in the scientific articles and also to guide the interviews and select the feasible questions to be asked to the respondents. Moreover, once the data have been collected the interpretation of the scientific articles has made it possible to select useful information and interpret it in a proper way, in order to elaborate new findings and theoretical conclusions.

4.2.2 DEFINITION OF RESEARCH QUESTIONS

After the literature review a list of plausible questions to be asked to the respondents have been compiled. As already stated above, the main topics are the design innovation

process and the organization of the companies during the innovation process. Moreover some questions are referred to the relationship between company and external partners, in particular designers, in order to derive some managerial implications linked to that. The questions might be divided into three sub-groups. The first one aims at finding out similarities and differences between Italian and Swedish furniture companies in the strategic approach towards the innovation process and the concept of design research and innovation actually carried out by the companies. Here below a brief list of questions is presented:

1. How would you classify your approach to innovation: market pull or design push?
2. Do you have an "editorial line" for your innovation process?
3. How do you classify your company in terms of being innovator or imitator?
4. If you are firm is innovator how do you protect your findings from imitators?

The second group of questions regards the individuation of commonalities and differences between Italian and Swedish furniture companies towards the structure of the innovation process and it includes the following questions:

1. How is design process organized? Which phases does it include?
2. What are the most important parameters used in order to decide the best design project?
3. How is the communication among the several actors? Informal or planned?
4. How do you attract and collect information from interpreters of your design process?
5. How do you address the design discourse and the market after the realization of the design project? Do you publish books, organize exhibition or fairs?

Finally the third group of questions aims at finding out similarities and differences between Italian and Swedish furniture companies in the organization of the innovation process, both from the internal and external point of view.

1. Do you have a Design laboratory in your design process?
2. Do you manage a portfolio of external designers or do you base your innovation process on only one key designer? What are the main resources/actors that actually contribute to the innovation process?
3. Do you have a strict relationship with actors external to the company (designers, cultural word, companies of other industries)? Or do you mainly interact with internal departments and local institutions (universities, research centers)?
5. How is your relationship with the marketing department?

6. Network of suppliers: how do you relate your company to suppliers and manufactures?
7. Is there a network of manufacturers and furniture companies in your area?

The order by which questions have been asked and analyzed in detail might have changed according to the respondent and his or her role inside the company. Therefore the degree of detail of the answers have been graduated according to the managerial sensibility shown by the respondent and to the operative position covered by the respondent inside the company.

4.2.3 REFERENCE MODEL FOR ITALIAN FURNITURE INDUSTRY

The need to elaborate a reference model for Italian furniture industry has been faced by choosing two companies that might be considered two of the greatest Italian companies that apply design-driven innovation and that have also inspired much of the theory regarding this new radical kind of innovation. The choice of those specific companies is also related to the fact that each of them is characterized by two different types of internal organizations (this will be deeply explained in chapter 5) and they can consequently be considered the two emblematic examples of a radical innovative furniture company. Here below you can find a brief description of the two companies, Kartell and Alessi, in order to have a general idea about their dimension and the business they address.

Kartell is an Italian company founded in 1949 in Noviglio, near Milan, which produces furniture and industrial design sought plastic. The company was founded by Giulio Castelli, a chemical engineer who began his work producing accessories for cars and household plastics. It expanded into home furnishings in 1963 and the brand's success was consolidated in the sixties, a particularly positive period for Italian design. The international consecration came in 1972 with the participation to an exhibition at the Museum of Modern Art in New York dedicated to furniture products made in Italy, pieces designed by Game Aulenti, Ettore Sottsass and Marco Zanuso. In the nineties the company began a lasting collaboration with several international designers, including Antonio Citterio, Ron Arad, Vico Magistretti, Philippe Starck, Piero Lissoni and many others. A number of Kartell products were awarded international prizes including the

Golden Compass, the prize awarded annually by ADI (Industrial Design Association), considered the most important prize in the world.

The peculiarity of Kartell is the use of plastic furniture in a completely original shape and with the use of processing technologies traditionally used in other industries. Kartell products are entirely produced in Italy, although the largest sales market is the United States. Among the most famous and successful products we can name Maui by Magistretti, the only two pieces in transparent chair La Marie and Eros armchairs, chairs series of rotational molded one-piece "Ghost" and Bubble Starck, and the Library Bookworm by Ron Arad.

Alessi is an Italian kitchen utensil company. They design everyday items from plastic and stainless steel. From the 1980s onward, Alessi has been particularly associated with the notion of "designer" objects, otherwise ordinary tools and objects executed as high design, particularly in a post-modern mode, from designers such as Philippe Starck. Most of the memorable "designer kettles," "designer toothbrushes," "designer graters" and so on are Alessi products. Alessi was founded in 1921 to produce crafted products in metal for eating and drinking, by Giovanni Alessi. By the 1980s, Alberto Alessi took over the management of Alessi and launched the Alessi company into the design decade through collaborations with designers and architects such as Alessandro Mendini, Ettore Sottsass, Richard Sapper, and Achille Castiglioni. Among the best known of the company's product range are Richard Sapper's Kettle with a two-tone Whistle, Michael Graves' Wettle with the bird shaped Whistle, Massimo Giacon's Mr Suicide, and Philippe Starck's playful three-legged Juicy Salif Citrus Squeezer. In 2006, the company reclassified its products under three lines: A di Alessi (products with lower price points), Alessi (the main collection) and Officina Alessi (the most experimental and limited edition pieces), making the company become a definitely international and worldwide spread company.

4.2.4 CASE STUDIES FOR SWEDISH FURNITURE INDUSTRUY: THE RESEARCH PROCESS

Once defined the research questions and the reference point model for the Italian furniture industry, four case studies about Swedish furniture industry have been analyzed. The theoretical study previously mentioned has made it possible to face the objective of

following up data and collect information in the form of interviews in four organizations, such as Lammhults, Offecct, Blå Station and Mitab. Both primary and secondary sources of information have been used. Primary information has been gathered directly from the respondents, secondary information has been collected from many sources, especially university library, furniture showrooms and scientific articles given by my supervisors. The interviews carried out by 4 Swedish furniture companies took place between March 2010 and May 2010. Many interviews have been carried out over the phone, since many companies have their own headquarters far from Stockholm. However, some interviews took place by some companies' showrooms located in Stockholm.

4.2.4.1 COLLECTION OF SECONDARY INFORMATION

The secondary sources of information consist of academic literature, published academic articles, newspaper articles and companies catalogues. This data collection was carried out throughout the entire period spent on this work in Stockholm, from January 2010 to June 2010. The approach that has been followed is the case study approach, a research strategy which focuses on understanding the dynamics present within single setting (Eisenhardt, 1989). In the first phase, the "getting started" step, the research question has to be defined and the *a priori* specifications of constructs have to be clarified. Since there were not any certainties about the theory being developed, it had to be considered the fact that the purpose of building a theory might be turned into a testing theory o vice versa (according to Gersick 1988). In our case, we already had information about the innovation processes occurring among the Italian furniture industry. Our research question was almost defined, even if we knew that the focus of our interview might have changed during the research processes (as stated by Bettenhausen and Marnighun, 1986). The different phases of the research process are summarized in the following Figure 26.

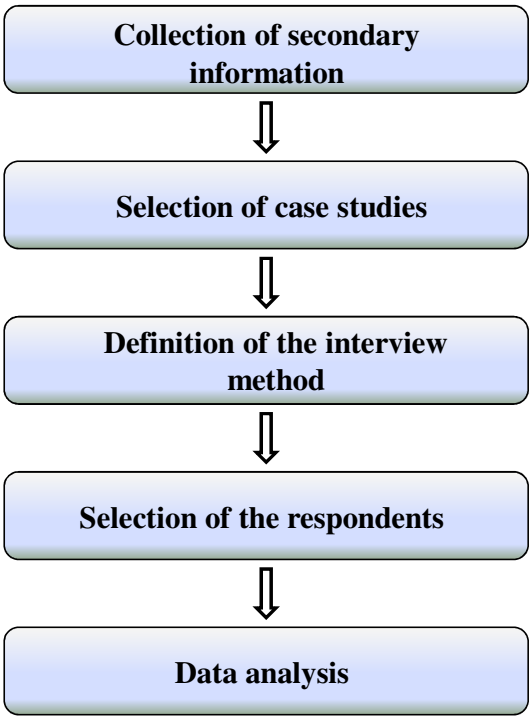

Figure 26 Research process

4.2.4.2 SELECTION OF CASE STUDIES

The selection of case studies has been based on suggestions coming from my supervisor at the Royal Institute of Technology in Stockholm (KYH) professor Laestadius, who based his own advices considering the business of the companies and the topics intended to be analyzed during the research. Lammhults AB was the first furniture company to be chosen, since it represents one of the representative furniture company in Sweden, actually competing internationally with Kartell. The other companies, such as Offect, Bla Station and Mitab, have been chosen according to a specific criterion. Indeed, in order to build a theory from case studies a case selection using replication logic rather than sampling logic is likely to be used (Eisenhardt, 1989; Yin, 1994). Each case should be selected so that it either predicts similar results (a literal replication) or produces contrary results but for predictable reasons (a theoretical replication). Actually the logic adopted in this work has been the first one. The selected case studies might be chosen in order to find out commonalities and differences between the new case studies research and the ones that are already known. This strategy was defined “extension strategy” by Pettigrew (1998) and it

has been actually adopted in this thesis. The Italian furniture industry was already known, the case studies concerning Alessi and Kartell have been the starting point of this research and it has been the point of reference for the comparison between the Italian and Swedish furniture industry. Multiple cases within the same industry allow findings to be replicated in the same categories (Eisenhardt, 1989) and this occurred in this work. The Swedish furniture companies are characterized by many common features and this helped to find out a general theory regarding the Swedish furniture industry. Anyway the data collected have been exclusively qualitative and since the research has been conducted only by one person a team investigation has not been possible.

4.2.4.3 DEFINITION OF THE INTERVIEW METHOD

The purpose of the interviews conducted by those four Swedish companies was mainly to understand how the innovation process in these furniture companies takes place and who are the main role players involved in its each phase. Particularly for the first interviews and meetings talking to the designers has been a way to gain more sensibility and inspiration towards design-driven innovation, towards the furniture business and the main phases by which a design-process is structured. This naturally helps it when it is time to analyze the gathered data and create a general model upon the specific case studies. The prime source of data in case research has been structured interviews. Other complementary sources of data have been informal conversations, discussion with my supervisor at KTH, visiting showrooms. According to Voss et al. (2002), interviews can be either unstructured or more focused and structured, or highly structured resembling a questionnaire. Actually my approach towards my interviews has been the latter, since I talked to the respondents having a questionnaire of question previously prepared that represented the formal guide for my analysis. According to Yin (1994) the reliability and validity of case research data should be enhanced by a well-designed research protocol. A protocol contains the procedures and the general rules that should be adopted in using the instruments of the interview. Its aim is setting questions to be used in interviews and it additionally outlines the subjects of the interview, states the questions to be asked, and indicates the specific data required. A research protocol has been used in this work and it has actually facilitated the phase of collecting data and analyzing data, both within the single cases and throughout the entire analysis.

4.2.4.4 SELECTION OF THE RESPONDENTS

The selection of the respondents (Table 2 Interviews respondents has been influenced by their role in the design innovation process, the position covered inside their own companies and at the same time their availability. In this research multiple respondents have been interviewed, or alternatively a follow-up survey with multiple respondents. Indeed in researching case-based data, it is important to seek out the persons who are best informed about the data being researched and this person is often known as the principle informant (Voss et al, 2002). In this research product developers have definitely been the most important respondents for the established purpose, since they generally have the most detailed general overview of the innovation process and of the organizational configuration of the company. Designers, instead, give their contribute for what regards the different phases of the innovation process and their relationships with the external suppliers. This will be further explained in the following chapters.

LAMMHULTS	**Employee**	**Role in the organization**
	Per-Hevert Johsson	Product developer
	Anya Sebton	Freelance designer
	Gunilla Allard	Freelance designer
	Peter Hiort-Lorenzen	Freelance designer

OFFECCT	**Employee**	**Role in the organization**
	Anders Englund	Product developer
	Luca Nichetto	Freelance designer

BLÅ STATION	**Employee**	**Role in the organization**
	Johan Lindau	Managing Director
	Fredrik Mattsson	Freelance designer

mitab	**Employee**	**Role in the organization**
	Marcus Torstensson	Managing Director
	Joel Karlsson	Freelance designer

Table 2 Interviews respondents

4.2.4.5 DATA ANALYSIS

Each case study has been analyzed individually and during the interviews within the same company notes and schemes about its reality have been written down. As Gersick and Pettigrew (1988) stated, notes about each individual case is crucial for the generation of general insight. During the analysis of each case studies an overlapping of information about the different companies has occurred. For this reason during the ongoing process of data collection supposition of general observations have to be taken (Burgelman, 1983).

One of the most important trouble which occurs during the data analysis is making generalizations of a fact that is present in a limited context. As Eisenhardt explains, there are several tactics by which a coherent and true theory can be derived. One tactic consists on considering couples of case studies and analyzing commonalities and differences among them. Another tactic consists on choosing recurrent topics and analyzing them throughout the several companies analyzed. In this way the investigator has the possibility to analyze each aspect of the research and find out commonalities and differences related to that particular topic. In our case, the last tactic explained has been chosen.

After the data analysis it is time to define general concepts and theories that have to fit with every single case. The first step is to find out and write down the topics and the second steps consists on testing them among the cases. Sometimes a relationship is confirmed by the case evidence, while other times it is revised or it definitely thrown out for lack of evidence among the case studies. Actually, according to this process sequence, the selection of relationships and common topics has been crucial for the elaboration of the comparison and of the findings of this thesis. As Glaser and Strauss (1967) stated, the closure of the research occurs when the investigator stops adding cases for data saturation, since he observes similar characteristics among the already analyzed cases. At the same time the iteration process between theory and data has to be stopped when the incremental improvement to the theory is minimal.

The analysis of the data about Swedish furniture companies collected during the first steps has shown the fact that almost every single case is characterized by many common features. This is the reason why just four case studies have been analyzed and added to this research. One other Swedish firm, Kallemo AB, had been previously analyzed, but its contribute in terms of the incremental information to the already existing theory that had been elaborated was irrelevant and redundant for the aim of the research.

4.2.5 COMPARISON AND CONCLUSIONS

The last phase of the research process consists on defining the terms of comparison between the two realities and derive the final conclusions, among which some managerial implications. The first topic that has been analyzed in the comparison between Italy and Sweden has been the strategic approach towards design innovation. Looking at the catalogue products and also getting to direct contact with the members of the furniture companies, has made it possible to easily derive that Italian furniture companies tend to apply a radical design innovation process which can be even defined as a knowledge research process, Swedish furniture companies apply an incremental innovation process and it is based on technical creativity and technological research. In Sweden the approach is definitely a user-centered approach, where customer needs are the starting point of the entire innovation process and where the study from the market perspective during the innovation process plays a central role. This implies that in Italy the innovation process is focused on socio-cultural research, where the purpose is generating new semantic meanings and languages and introducing technological newness into products. In Sweden, instead, companies focus more on the concept generation phase, such the operative part of the meta-project phase and on product development phase, when new technical solutions being to be introduced are shared among the actors of the design discourse. For what regards the downstream phase of the innovation process, whereas in Italy the Design fair is a test for the market and the company gets feedback from visitors and marketers about the prototype that is being developed (the process of innovation is radical in meanings and technologies and this is the reason why the company can have an idea whether the new products might be appreciated by the market and can fit with the customers' needs), in Sweden the Design fair is seen as a presentation of the final product, which then is soon placed into the market.

Coming to the analysis of the internal organization related to the innovation process, in Italy the entire meta-project phase is carried out inside the Design Driven Laboratories (DDLs) that are basically autonomous identities from the furniture company. In Sweden the entire innovation process, from the design and technological research to the final product development, is carried out inside the company. In particular, the internal organization which oversees the entire process is the Design Council and it is composed by multidisciplinary competences, since it gathers together one representative of each

organizational department. Italian DDLs, instead, are composed by mono-disciplinary competences, they gather up R&D people who either are experts of products technology or they sustain the relationship with the external designer and their competences are exclusively linked to the research processes.

Finally the external organization has been object of the comparison. In Italy the DDL heals the relationship with external suppliers and designers and the general network of external actors of the discourse is coordinated by the DDL. In Sweden, instead, the designer is the one who takes care of the relationship with external suppliers and producers and for this reason we can define it a network coordinated by the designer. The designer in Italian companies is just seen as socio-cultural researcher, whereas in Sweden she usually has more technical competences as technical drawer and also interprets the role of technological gatekeeper (further explanations will be found in the following chapters). Both realities also have different ways to manage the relationship between company and designers and different strategies for what concerns the selection of the right design consultants. Designers in Italy definitely have to be able to gather knowledge and solutions from the external interpreters, capturing inputs coming from the market and from the other persons involved in the discourse of the innovation process. Between company and designers there is tendency to build up mutual trust, and the designer identifies herself with the company and preferably takes the risk related to the specific project together with the company. In Sweden designers, even if they are freelancers as well as in Italy, do not actively participate to the meta-project phase with the company and the relationship between designer and company is not exclusive. The designer is an external resource, her tools are considered much more important than its ability to gather knowledge from the innovation process. Those radical differences have relevant consequences from the managerial perspective, that will be further explained in the last chapter.

CHAPTER 5

INNOVATION IN THE ITALIAN FURNITURE INDUSTRY: A REFERENCE POINT

After the second and third chapter where the theoretical background and the literature review have been presented, and the fourth where the research methodology has been explained, the task of this following chapter is to present the themes concerning design driven innovation in the Italian furniture business, and in particular the design innovation process and the organization of the innovation process, both from internal and external to the company. In order to find out a reference point for the Italian furniture industry, two case studies Alessi and Kartell have been investigated and analyzed. The main references for this preliminary study have been case studies and scientific articles about this companies already available in the literature. The choice of those companies has been related to the fact that both of them apply radical innovation, each of them is characterized by two different types of internal organizations and they might be considered emblematic examples of design-driven innovation.

5.1 THE DESIGN INNOVATION PROCESS IN THE ITALIAN FURNITURE INDUSTRY

The innovation process in Italian furniture companies is based on the relationship between the company and freelance designers, external actors with whom the company builds up a original and exclusive relationship. The furniture company usually gives the designer an "editorial line" to orient the relationship with him, even if the designer has to feel free in his own artistic elaboration and has to "free" his creativity from as many constraints as possible (Dell'Era and Verganti, 2009). The design innovation process can be schematized into three main phases (Figure 27): the design and technological researches, the concept generation (that includes a brief evaluation) and the new product development process (NPD). The meta-project phase counts in the final part of the research and, above all, the concept generation.

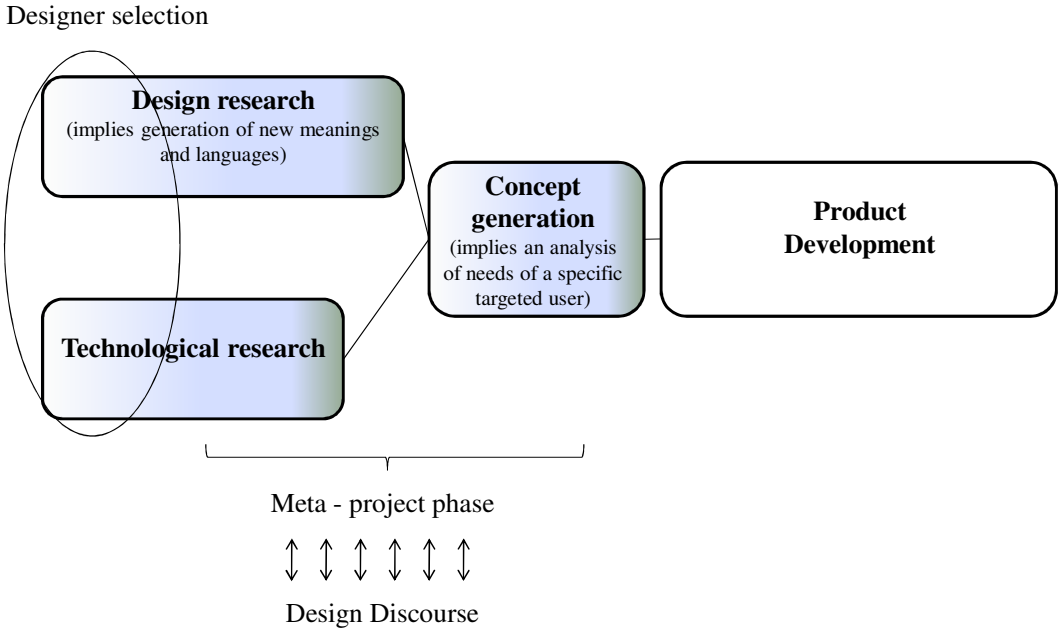

Figure 27 The design-innovation process in the Italian furniture industry (adapted from Dell'Era et al., 2008)

The meta-project phase is the most important one, since it is the part where the concept idea is elaborated and the design direction is developed. There are two different ways by which it might be handled by the company. The first one consists in the possibility that the company elaborates its own researches in order to identify specific needs of the market and let the designer know what are the particular characteristics that the product should

have. In the second case, new meta-projects can emerge from an interaction between the company and the designer, who might come up with breakthrough product meanings which introduce radical innovations from the semantic point of view and at the same time reflect the mission of the company. “The company skill in selecting the designer is to select the designer who best embodies its image, in such a way as to have a product that is always in keeping with the company’s mission and philosophy” (Pellizzoni, 2001). During the meta-project phase the contribution of the designer does not have to be considered the only support. From this point of view the company has to be seen as a part of a design discourse (see chapter 2), where values and socio-cultural models come from the society and affect the elaboration of new ideas.

Recent studies about Alessi, one of the most important company applying design-driven innovation in Italy, have figured out how new meta-projects come out from a continuous interactions with external designers who have the task to support the company in the creation of breakthrough product meanings and catch up and aggregate knowledge about product semantics. Alessi is part of a design discourse immersed into a continuous dialogue on socio-cultural models, behaviors and values of the society.

According to the model previously mentioned in the second chapter (Verganti, 2009) and reported in Figure 27, the crucial phases carried out during the innovation process in the Italian furniture industry are the first ones, such as the Design research and the Technological research. In these phases the contribute of the designer (in terms of invested time and resources) and of the other internal actors of the innovation process is different. In the Design research phase the contribute of the designer is much more relevant then the contribute of the other members of the innovation process. At the same time the contribute of the actors internal to the company is fundamental during the other complementary phase, such as the Technological research phase. As it will explained in the following sections, the Design research has much more relative importance than the Technological research.

One typical example of a company where technical research, linked to the research of new meanings, represents a strategic part of the innovation process is Kartell. The designer collaborating with this company is the owner of product meanings and the technological research provides technologies that embed values conceptualized by the designer. One of the most indicative product considered as example of radical innovation

of meanings and technologies by Kartell is Bookworm (Figure 28), a bookcase designed by Ron Arad in 1994. “Arad created a sculpture that could serve as a wall, the idea being to exploit the stable flexibility of tempered steel to form a series of shelves on a single continuous thread” (Dell’Era et al., 2010). Even though Bookworm was initially designed for professional offices, it was destined to become much more than a simple work of art available to a limited number of people and it started to be sold to a huge amount of people. The challenge linked to this product was transforming a piece of art into a piece of furniture. “Making Bookworm was very complex because the blend, the mixture of polymers, had never been produced by anyone before” said Ron Arad. Indeed, the company went to chemical companies like Bayer to see how they produced the materials in order to understand their characteristics and then use them in furniture production. The R&D department selected the flame-retardant polyvinyl chloride as material. “The band was extruded by machines called single screw and double screw extruders, which force molten thermoplastic resin through a draw plate and then through a calibrator to achieve the required profile. The shelves, while made with the same material as the band, were formed using injection molding and solidified by cooling”. (Dell’Era et al., 2010).

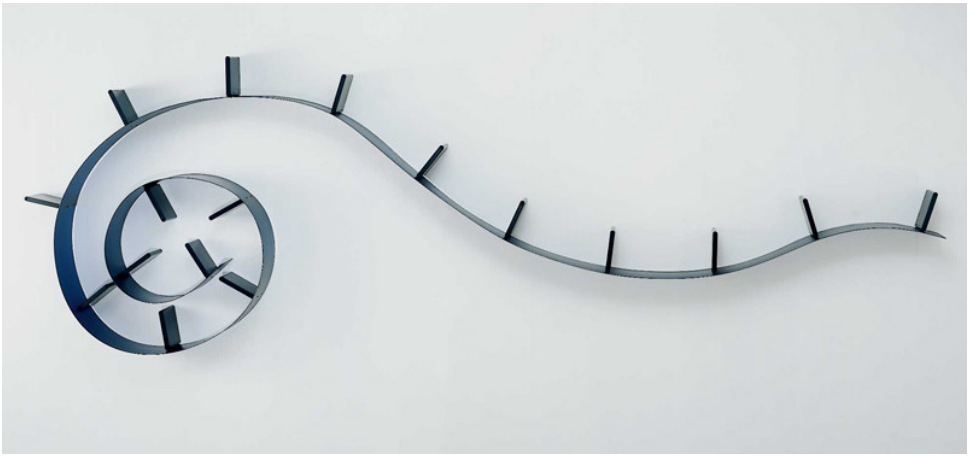

Figure 28 Kartell Bookworm, Ron Arad, 1994

A product of Kartell, as well as a product of Alessi, is a typical translation of the Italian radical design driven innovation in the furniture industry. “It is foremost a feeling, the industrial translation of an artistic expression, the perfect combination of design and business, new materials and art. By concentrating on all these factors the business has managed to build a market niche that is absolutely personal, one where it is unlikely other competitors can muscle in” (Pellizzoni, 2001). The Kartell product is the expression of the

creativeness and imagination of international designers who have the capability to transform cold and shapeless plastic into a precious and genial material.

Referring to the two leading companies analyzed, Alessi and Kartell, it is interesting to briefly describe the relation between material utilized and the cost of products. Kartell's products are the only ones of their kind on the furniture market and their target is an extremely varied clientele. Material used are extremely particular and unique in the market. Both Kartell and Alessi have in common the medium/high cultural level: the person who buys a Kartell product buys more than a simple piece of furniture, he or she buys a small artistic expression and must understand its intrinsic value. Alessi is characterized by the usage of less innovative materials but nevertheless the costs of products are really high (Figure 29).

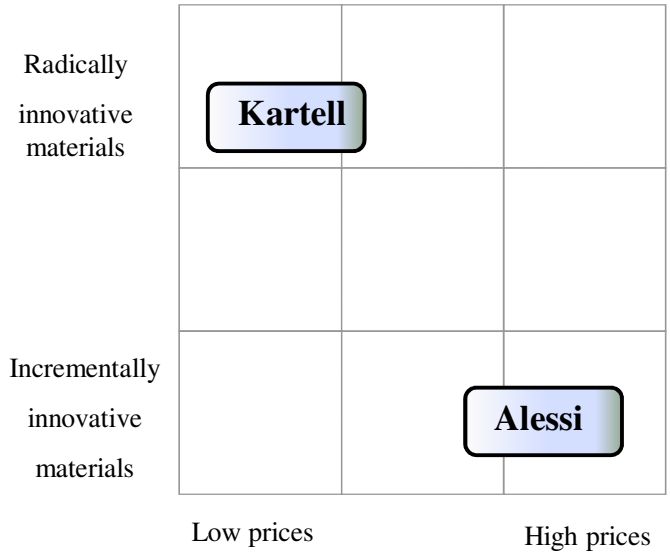

Figure 29 Relation between material utilized and the cost of products in Kartell and Alessi

Moving forward to the following phases, the concept generation phase implies a deep analysis of a targeted user, but it is actually based on the previous socio-cultural research carried out in the precedent phases. The contribute of the designer is as important as the contribute of the company. All the internal actors of the innovation process concur at apply in concrete projects the idea elaborated in the antecedent phases. Actually it has been defined as “the real explorations of new languages embedded into artifacts, and this

indeed implies playing and studying with new materials, new technologies and new technical solutions for the company" (Verganti, 2009).

The meta-project ends with the formulation of a written brief that describes and synthesizes all reflections developed during the previous phase. The fundamental idea of the project can be related to a family of products or a single product, and its principal aim is to summarize the basic idea of the project in terms of product languages and meanings. It is usually synthesized and described in a written document. This evaluation phase is developed and leaded by the chairman of the company, together with a few collaborators coming from the financial and commercial department. The proposals presented by the designers in terms of sketches and drawings are carefully evaluated in order to come up with a "desiderata", which is a written document where all the characteristics that a product should have are described and precisely explained. During this phase there is an intense dialogue between the company and designers and it might take more than one year. In Alessi, for istance, only a small percentage of the proposed projects are accepted (10–20%) and they have to respect the initial innovativeness.

Finally, once the design is selected, the engineering process is elaborated and the new product development phase takes place. This phase has to be extremely coherent with the initial "desiderata". In this phase the contribute of the technological potentialities available inside the company as well as the technological solutions available outside the company by the external suppliers and manufacturers are fundamental in order to develop a product that introduces a radical innovation.

5.2 THE APPROACH TOWARDS THE MARKET LAUNCH OF THE PRODUCT AND THE RELEVANCE OF THE DESIGN FAIRS

Most of the Italian furniture industries do not use traditional publicity. The firm's brand usually does not appear in design and furniture magazines and prefers to communicate its message trough different media such as shows, events and fairs. According to the philosophy of this companies, only those means of communication enable them to transfer the spirit of the companies, which aims at underline the importance of emotion and design more than the functionality.

"Lightness and harmony are sensation that Kartell wants to communicate to visitors at exhibition" (Pellizzoni, 2001).

Many furniture companies present their own new products at the fair as prototypes, and afterwards they focus on improving the already presented product completing the product development process and also on the hand-crafted realization of the products. In the last few years Kartell and Alessi aligned themselves with most of the other companies, that propose a prototype of new products that can only be delivered to customers six to eight months after this first vision. Indeed, many Italian furniture companies develop their own prototype in order to exhibit it in the fair. Then, it might take even one year before it is actually introduced into the market. The reason has to be found in the structure of the innovation process. In the Italian companies the Managing Director is usually the direct responsible of the product development and of its launching into the market. His extremely focused attention on the product and the continuous research of the optimization of its meaning let the fair be the opportunity to get feedback by visitors and by the market in order to reach an optimization of the product. The product development process, as well as the primitive phases of socio-cultural and technological meanings, are seen as iterative activities where the interaction between al the internal and external actors of the design discourse is important in order to elaborate a radically innovative product.

5.3 THE INTERNAL ORGANIZATION OF THE INNOVATION PROCESS

The innovation process occurring in the Italian furniture industry is based on a laboratory approach. The organizational focus of the entire process is the Design Driven Laboratory, where both the Design research and Technological research, as well as most part of the Concept generation, take place. The organization and the operative steps occurring inside the laboratory will be presented in the next paragraph below.

For what concerns the final part of the meta-project and, above all, the product development, that are carried out inside the firm, most part of the furniture companies present a “Central Manager Configuration” (Dell’Era et al., 2008) reported in Figure 30, where the innovation process in centered on the competencies of a Central manager, who actually oversees on the main activities of the process. The two main activities carried out by the manager are the management of the designer portfolio and, above all, they are continuously involved in a constant relationship with the design discourse, in order to keep the company up to date about new meanings and product languages. The task of the manager is even taking the final decision about the choice of the product to be launched

into production, and additionally he concretely participates to the product development process, sharing technical and economical information with the Design discourse. In most of the Italian furniture companies this role is covered by the company leader.

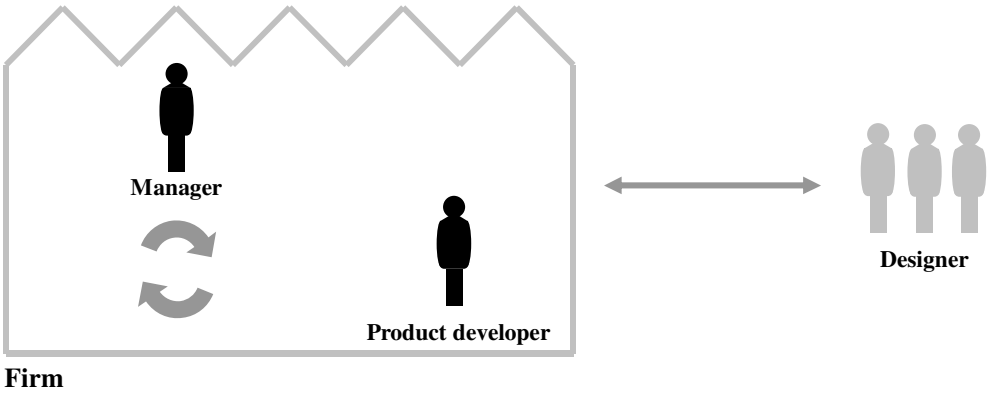

Figure 30 Central-manager configuration in the meta-project phase (adapted from Dell'Era et al., 2008)

In addition to this configuration some other Italian companies carry out another one, the "Multidisciplinary Configuration" (Figure 31), which foresees dedicated resources for activities related to developing proper product languages. Socio-cultural researchers play a central role in coordinating the interface between the company and the external designers. Furthermore, they discuss together the basic meanings conveyed by products and they verify the coherence between the messages embedded in the products and society's emerging trends from the socio-cultural point of view. In this configuration managers usually contribute to capture, understand and develop trends by participating in fairs and discussing with other companies and associations about emerging socio-cultural languages. So the key roles are covered by managers, who are seen as drivers of the designers' selection, socio-cultural researchers and product developers and finally external designers who propose the basic ideas that are discusses inside the organization and the Design-Driven Laboratory. These key players possess a multi-disciplinary background that allows them to interact with each other during the meta-project phase.

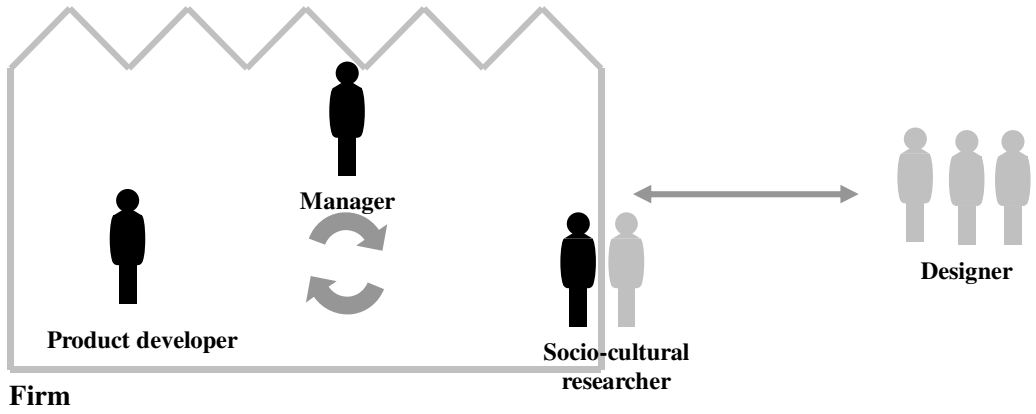

Figure 31 Multidisciplinary configuration (adapted from Dell'Era et al., 2008)

5.3.1 DESIGN-DRIVEN LABORATORIES (DDL) FOR THE META-PROJECT PHASE

Italian companies which have been objects of my analysis found the elaboration of the meta-project and the definition of the product-concept on studies and researches carried out in proper Design-Driven Laboratories (DDL), that belong to the first part of the innovation process, where new meanings and technologies are investigated and the design research of socio-cultural languages overcomes the technological research. Very structured and organized laboratories, such as "Centro Studi Alessi" and "Centro kappa" by Kartell, aim at "experiment new methodologies in order to work with young and fresh designers who might come up with new researches in the field of communication, art and marketing, both on the semantic and semiotic aspects of the products" (Dell'Era and Verganti, 2004).

The researches carried out in the workshops within the laboratories represent the theoretical foundation of the meta-projects, which actually define the object that have to be designed. Indeed, according to the theoretical part explained in chapter 3, the diffused form of Design Driven Laboratories (DDLs) in our case studies Kartell and Alessi is the Linguistic DDL (Figure 32), where a research of new meanings and languages takes place and at the same time the scale of innovation from the technological point of view concerns a incremental performance improvement.

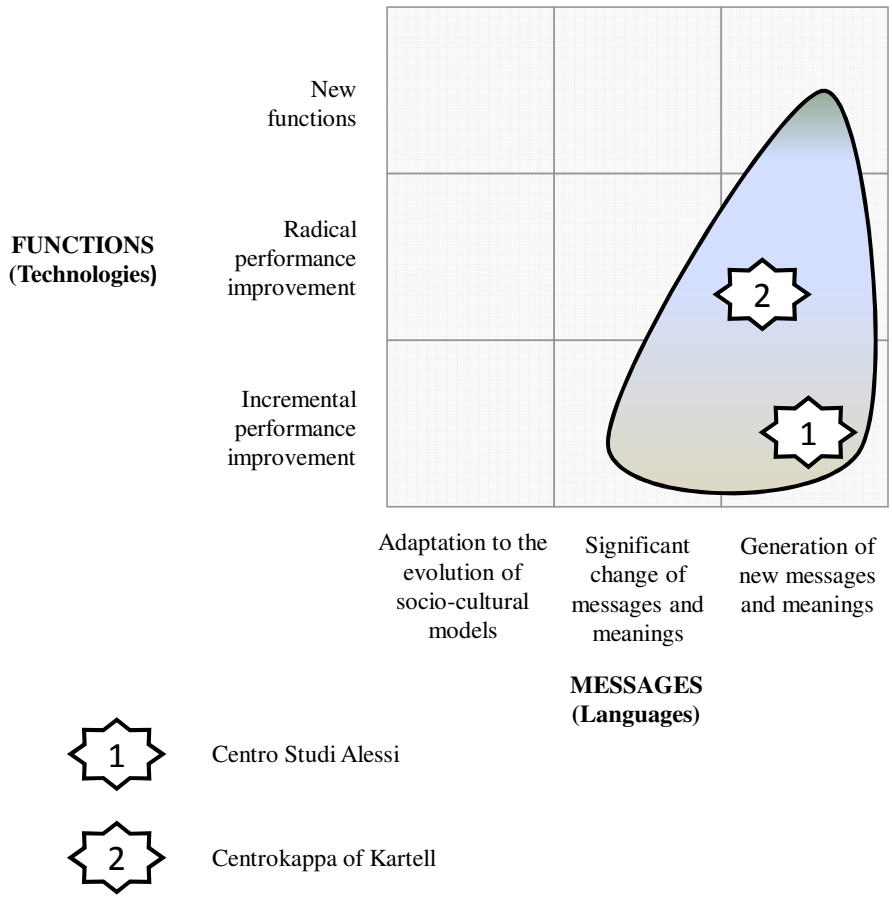

Figure 32 Kartell and Alessi laboratories in relation to functions and messages

After the selection of the designer, which is basically chosen according to his/her affinity to the theme of the specific meta-project, ideas are exchanged among all the members of the workshop and the meta-project is actually defined. The workshops welcome designers coming from all over the world and for this reason it is an opportunity of sharing worldwide knowledge and competences. It starts with the elaboration of a meta-project theme, it passes through discussion and design stages and ends up with the production of new objects. These meetings, that last maximum 5 days, consist on moments of individual work, one to one meetings with the coordinator of the workshop and specific meetings with experts of particular themes, firm's strategies, languages, and methodologies. The workshop is carried out in collaboration with the company to identify the specific goals that suit with the company's needs and vision and it is mainly composed

by two stages: design and cultural researches on one hand and, on the other hand, the management of the meta-project phase.

First of all, the project leader of the workshop decides the theme of the workshop as well as the scope of the work, the timeline and the workshop venues. Secondly the actors of the workshop have to be chosen: a technical manager, a product manager and sales manager directly from the company and on the other side the guests of the workshop. These might include experts, designers, photographers, industrialists, stylists, cartoon artists, illustrators and marketing experts. In particular, depending on the company's needs and vision, designers involved in the workshop may be in-house designers or designers from both the company and outside. Moreover the team of designers can be composed by maximum 15 members. Normally before the beginning of the workshop, the design team is given the brief and contributions from the experts involved in the workshop in order to analyze the team, learn about the company's technologies and start to identify the potential concepts that will be lately enhanced and developed during the workshop.

The aim of the workshop is "to bring together new scenarios and new inventions in the field of design audit also to search for new talents who might apply these new ideas in concrete projects" (Dell'Era and Verganti, 2008). The reason why these workshop and linguistic laboratories are carried out is linked to the original idea of the innovative product in those Italian companies, such as: the piece of furniture, whatever it is produced for, despite its functionality, is "first a felling, the industrial translation of an artistic expression, the perfect combination of design and business, new materials and arts" (Pellizzoni, 2001).

5.3.2 TWO EXAMPLES OF DESIGN DRIVEN LABORATORIES: CENTRO STUDI ALESSI AND CENTROKAPPA

Centro Studi Alessi (CSA) was founded in the early 90s by Alberto Alessi, Alessandro Mendini and Laura Polinoro who were supposed to develop the initial idea of devising a creative workshop to integrate and innovate the design system of the company Alessi. From the beginning the center has had the dual mission of developing theoretical contributions on topics related to design innovation and coordinate the work with young designers on themes related to communication and of course design and marketing. Research is the basis of the creation and elaboration of thoughts and aesthetic and cultural

criteria upon which the meta-project defines the object, the aesthetic and cultural and visual stimuli to which designers can refer. Within the workshop the meta-project is elaborated after the comparison, coordination and knowledge exchange with the previous conceptual phase and it is coordinated by the director of the corporate team and designers.

The first two projects conceived and coordinated by Laura Polinoro for the CSA were "Memory Containers" and "Family Follows Fiction". The latter was born from the desire to add a “playful quality” to the properties of steel, and explore new sensory aspects and new codes through the use of a new material for Alessi, such as the plastic. The late '90s saw the last evolution of Alessi and in particular of the CSA. It became a laboratory for research in applied arts, working with the best talents of international design, and it has managed to combine poetry, creativity, culture, visionary, sincerity, timeliness and design excellence. Alessi thus decided to provide expertise in design management and its vision of design in order to create a company highly specialized in technology and distribution that could elaborate new objects characterized by a mix of eccentricity and style, playfulness and culture, irony and elegance.

Centro Studio Alessi took progressively more autonomy from the parent company since 1998. Laura Polinoro in 2004 founded the Laurapolinoroworkshop organizing workshops with designers coming from different countries and different consultants depending on the design theme analyzed. The mission was: "Creating products with excellent and strong identity through the design method”. Workshops, conferences, seminars were the main activities of the CSA. Universities and research centers that have hosted activities are the Royal College of Art in London, Politecnico di Milano, Domus Academy, Helsinki UIAH, ICS Tokyo, Faculty of Architecture of Florence and the KIDP of Seoul.

Currently Laurapolinoroworkshop is based on a core of permanent 7 components. During the workshop the group is complemented by a number of people represented by the customer and a carefully selected group of young designers, varying on the base of the contingent project that is being carried out. The workshop begins with the presentation of the first idea to be developed. This involves moments of individual work, daily meetings and seminars with guests speaking about contents related to the theme of the workshop and strategies, language, methodology. The interactivity requires the development of a particular work that requires a continuous coordination between researchers and designers. The project leader of the workshop is the director of this complex operation and has the function to target, select and coordinate both the aesthetic part and the technical one. The

purpose of these workshops consists mainly on the opportunity for participants to get closer to the creative phases coming before the implementation of the design process. Some examples of topics analyzed during the workshops organized by LauraPolinoro are:

- The lightweight steel (Steel in a new language; surface and the interaction with light).
- Design the gift (the gift: love, memory, rivalry).
- Design marketing (Alessi: the case of an intuitive design and marketing studies).

Here below a description of Centrokappa by Kartell will be presented, focusing on the objectives of organization and on the management of projects portfolio.

Kartell was born in 1969 as an initiative of Valerio Castelli. In the field of interior design there was not any company that had an advertising agency and the managing director of Kartell understood that it was needed, considering that the product and particularly what it expresses is the first element of communication. The focus on communication has become increasingly important as part of its innovation "meaning" where the product is the bearer of a message. Valerio Castelli seemed the right person to combine the focus on innovation and at the same time on communication. In 1972, the communication office gained independence from Kartell, constituting a new company formally completely independent from the parent: Centrokappa. There was the desire to maintain a connection to the parent (that purpose is also reflected by the name, which refers to the letter "K" Kartell), in order to maintain a reputation and a solid marketable brand, but on the other hand there was the intention to allow different companies to work in collaboration with Kartell, in order to broaden its horizons and meet different realities. In 1978 Kartellnews was founded, with the aim of enhancing the brand Kartell. Having successfully tested the idea of using a magazine to communicate with the world outside, it was decided to establish an internal organ to enable all employees of Kartell to know the steps taken by the company, communicate a set of values, and help to define the corporate culture. The growing success for Kartell, to which the center has always been inextricably linked, created a virtuous circle, attracting the most important designers and new names, such as De Lucchi Lucchini, Turnips, Puppa, Rays, Branzi Mendini Matsukase.

Within Kartell, the publicity department was concerned only with communication & image, but with the birth of Centrokappa the structure was reorganized. The center was then divided into three distinct units: communication, design and photography (Figure 33).

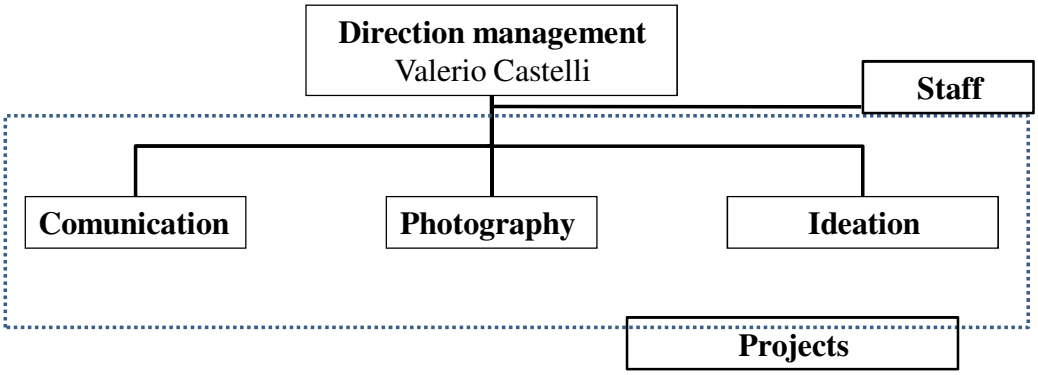

Figure 33 Organization of CentroKappa by Kartell

In order to have an independent decision-making and to work with different companies by Kartell, the Centrokappa was an independent entity, headed by Valerio Castelli. In the '80s, the period of greatest expansion, the center had about 30 employees. People who were not allocated into a specific function, because of staff engaged in activities, were seven. Inside the design department there were eight people, consisting mostly of designers and their collaborators, while the communication unit consisted of twelve people. The studio was constituted by two photographers with three assistants. By analyzing the functional structure of the center and how to assign projects, it is possible to identify a form of matrix structure.

The division into functional areas was made necessarily according to the nature of the center and with the objective of achieving a strong specialization in communication and develop campaigns communication. An important point concerning the common cultural background of people working in the center is that in communication design most people had a degree in architecture. Having a common language, allowing a strong interchange of information and ideas it was easy to form a comfortable working environment and a strong sense of community. These factors were also increased by the enthusiasm of the team, who, from outside, was seen as an inexhaustible source of creativity.

All customers except Kartell approached the Centrokappa requesting services from a single functional unit. However, regardless the nature of the services required, the first approach involving all designers and all those that dealt with communication. The final choice on the allocation of projects was always made by Valerio Castelli, but took into account the interests of individuals and the outcome of the first project brief. During the course of the projects weekly meetings (every Monday) were organized, in which all the

project leaders informed the entire team about the working progress and suggested a plan for subsequent phases. This involved all members in order to obtain the possible interdisciplinary contribution. These fixed dates were not perceived as an imposition, but as an opportunity for communication. Indeed, the sense of community that was created in the center pursued the intention not to express individualities in the product, but the identity of the group.

5.4 THE NETWORK OF INTERPRETERS

In this section the relationship setting between furniture companies and external actors of the design discourse will be presented. Primarily the analysis will be focused on network of suppliers and afterwards on a particular gatekeeper of the innovation process, the designer, who plays a crucial role for being a broker of languages.

5.4.1 BUSINESS CLUSTERS AND SUPPLIERS NETWORK

Italian manufacturers invest time and resources in identifying key interpreters in the design discourse in order to attract them and involve them in the elaboration of radical innovative meanings and languages, especially for what concerns the Design and Technological research. Interacting with the design discourse to access knowledge on product languages is not enough for design driven innovation, because there is also need to interpret this knowledge, to select it and skim it off, interiorize it as much as possible and finally develop unique visions and meanings. It is actually difficult to understand how selection and assimilation of knowledge on new meanings and languages occur. In the third chapter one theory has been explained. Indeed, it can be stated that circles of creation of absorptive capacities settle and those interactions facilitate the exchange of knowledge within the design discourse and the communication between its key interpreters. Generally speaking, experience and long lasting cooperation between actors are key success factors for assuring this process.

Extremely related to the studies carried out during the meta-project by apposite workshops, the researches during the product development are undertaken in close synergy with the company's suppliers, for example chemical industries or mould

manufacturers, that contribute to define new materials and new moulds that will then be used during the production phases. For this reason Italian companies try to build up a long-term relationship with suppliers located nearby the local area where the company itself is located, since an intense cooperation is always required. Moreover it is improbable that the strategic phase of product development and some crucial productive stages are exported, since it is impossible to transfer the firm's know-how and competences. However, although the collaboration is usually very strict and long-term, there is no need to deal for a formal contract.

Italian companies in the business of furniture production tend to establish really close relationships with the industries surrounding their area in order to benefit from their knowledge and to introduce a radical technological innovation in the designed products. Moreover, successful firms care not only about proposal of new ideas, but also about the modification of the context in which to propose innovation and this attitude is kept towards technological innovation as well. Thus, "radical innovation in meanings and technology depends on the complementary assets controlled by the firm, such as complementary components, distribution channels, production, service, etc." (Verganti, 2009). The company usually has a person in its organization (a gatekeeper) who has the task to be continuously in contact with the industries located in the same area, since every project needs to have different sources of technological know-how and different interpreters that contribute to the idea generation. According to this, we can identify two different organizations in relation to the contribute of the designer and the company in the supplier network (Figure 34).

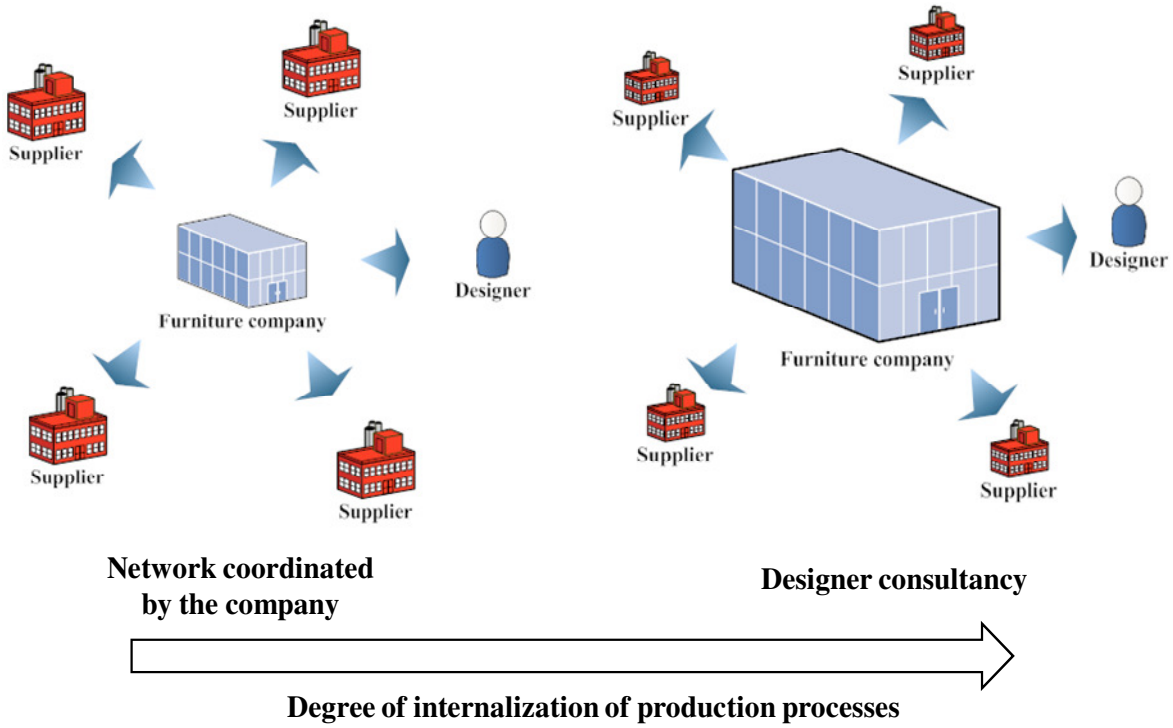

Figure 34 Forms of organization in the Italian design-driven innovation (adapted from Zurlo et al., 2002)

As we can see in the figure, among Italian companies the network of suppliers and the designer are chosen by the furniture company, which actually is the central focus of the network. Recently some companies have started a process of internalization of some production process that requires particular and strategic know how and that is difficult to outsource (second scheme on the right). Referring to the design companies analyzed (Kartell and Alessi) the configuration actually applied is the "Network coordinated by the company". The company establishes its own business relationships with suppliers and manufactures and at the same time with the external designer, with whom he builds a exclusive and long-lasting collaboration. The degree of internalization of production processes is basically low and this explains why the relevance (the dimension in the figure) of external suppliers is more important than in the other configuration (Designer consultancy). Additionally, the designer, no matter the organization, always plays a key role in the idea elaboration and in the introduction of radical innovation.

5.4.2 THE DESIGNER AS BROKER OF LANGUAGES

Among all interpreters in the design discourse with which a firm may interact, there are some that have a crucial position. Designers facilitate the access of their manufacturing clients to the discussion about design languages, help their partners to interpret information and knowledge coming from the design discourse. Language brokering is easier since product languages move across industries more fluently than technologies and, based on these observations, Italian companies rely on the early involvement of the designer in the innovation process. This fact has a strategic value and it has a great impact on the contribution of designers as broker of languages and technologies. Furthermore, top managers of the companies that actually apply radical design-driven innovation have a close relationship with designers. They are considered strategic resources for the corporation and act as strategic consultants. Accordingly, the process of research of languages is based on talks and discussions and this is the reason why executives are always glad to invest operative time in communicating with designers.

Moreover, typically a designer in the Italian furniture industry has to share the same values of the company. The firm has its own values and design consultants, on the other hand, have their own paths and their own systems of values. When both these paths (the firm and the design consultant) cross they need to be in counter-phase. This means that ideas may contrast, but basic values need to be somewhat aligned. At the same time opinions may change and sometimes this is inevitable, but basic values of the company cannot be adapted to suit a particular client or designer. Italian furniture companies also build up and nurture long-term relationships with designers involved in their design innovation process. After a certain amount of time and meetings, the collaboration then becomes a personal and deep relationship that goes beyond the formal contract established between the two parts. Additionally designers are recruited not only because of their technical methods and their tools, but above all because of their capability of attracting and interpreting local and global languages across a wide range of industries and to be well connected to suppliers that offer technological solutions, enabling the flow of information between the industries that have such knowledge and those that do not have them. Innovative companies develop rich designer portfolios in order to keep high levels of freshness of ideas and internationalization. Collaborating with designers coming from different nations and who are able to access different local socio-cultural contexts allows

companies to mix different points of view and approaches favoring the proposal of innovative concepts. This strategy, indeed, guarantees better performances for those companies that compete at the international level. Companies that receive higher consumer interest compose their designer portfolios with fewer foreign designers, coming from fewer countries. Languages move across different product types and industries (Dell'era et al., 2008), and they can also move across different socio-cultural countries but this kind of transfer is more complex because signs and languages are connected to specific meanings according to the cultural context in which people live. Designers, as brokers of product languages, can support companies in the development of languages that can match social and cultural needs. This process is anyway very complex and it requires a deep understanding of local parameters and expectations of customers.

CHAPTER 6

INNOVATION IN THE SWEDISH FURNITURE INDUSTRY: CASE STUDIES

After the description of some important topics of the Italian furniture company as a reference point in chapter 4, in this chapter four case studies of the Swedish furniture industry will be presented. The four companies are Lammhults AB, Offecct AB, Bla Station AB and Mit AB. The reasons why those four design companies have been chosen are related to the market served and to the extent of innovation implemented inside them. All these four companies are furniture companies which serve a niche market and focus their own activity on design and technological research. In Sweden this kind of furniture companies has to be set against IKEA, the most popular furniture company in Sweden, which serves a mass market and base its own production on high functionality and low costs. Instead, the companies chosen for this research have a completely different approach towards the innovation process, the internal and external organization related to it and for this reason they can be reasonably compared to the two Italian furniture companies introduced in chapter 5. Each section related to each company presents one subsection regarding the innovation process, one regarding the internal organization of the innovation process and one regarding the external organization. Furthermore for each company one sample product has been presented, in order to underline how the concepts analyzed in the general part of the presentation have been applied on a particular project.

6.1 LAMMHULTS MÖBEL AB

6.1.1 FIRM DESCRIPTION AND VISION ABOUT INNOVATION

Lammhults started as a regional workshop in the 1940 and it became an international and profitable furniture company, renowned by the Swedish market and considered one of the leader companies for the furniture sector. Today, some of Lammhults earliest products are still in production and are frequently used in current interior environments, and this fact emphasizes Lammhults´s policy: "the best design is timeless", that means that Lammhults produces its own product with the purpose of making it last for a long period. One of the chair still produced right now was designed in 1930.

"Designing is not personal, design has to be sustainable. One of the main purpose of the company is to gain a relevant share in the market for a long period. Since the functionality of products is more important than the design itself, the focus has to be on the process and it has to have make the product lasting a lot in the future". Gunilla Allard, designer

Lammhults builds up a really close collaboration with its designers and this ensures the strength of a common and shared identity. Lammhults design consists on graphics and showcases, showrooms and exhibitions.

"The satisfaction of robust elegance has defined Lammhults Möbel AB, the company end every piece of furniture, since the beginning". Lammhults website

The headquarter of this company, which is one the most important ones in the Swedish furniture context, is located 450 kilometers far from Stockholm, in Småland in the south of Sweden, in the village of Lammhult. Lammhults factory is a modern 10,000 square meter facility that also houses the senior management, staff and operations center, together with a showroom display of every Lammhults product. The market of Lammhults is mainly limited to Scandinavia, where 85 percent of the produced products are sold. Lammhults dedication to quality is further demonstrated by their investment in the tooling

machines required to reproduce their designs in mass production. Even if expensive, this use of tooling ensures protection against copies, while also ensuring that labor costs remain a more manageable component of final product costs (Gustavsson and Laestadius, 2005). Lammhults commitment has always been to produce the best designs using the best materials and doing it in the most efficient way.

All the activities concerning design innovation in Lammhults are based on a collaboration between the two main company departments (marketing and production) and five freelance designers, among which two are based in Copenhagen and three in Stockholm. Collaborating with a few external designers, with whom the company has a close relationship, is a strategic decision of the company and it has specific reasons. The most important reason is that stagnation is avoided: the knowledge and the different cultural inspiration of the designers makes easier to develop new products, with new meanings and new languages, as long as the design does not concern competing products. Having different external designers working in different geographical areas and with different materials also implies that designers can provide a lot of inputs and ideas. On the other side it makes it possible to have a restrict range of products and a uniform collection. As Gunilla Allard says: “Chairs of a designer often fit with tables of another designer. The connection among us is strict in order to create complementarities in Lamhults collection”. This is the how Lammhults conceives the concept of innovation, that can be defined “collection inspired”: the mission is creating a collection with complementary products, each one developed by a different designer.

Moreover, Lammhults does not give to its designers a proper editorial line: the designer comes up with his/her own original idea, there is an informal and very unstructured discussion about it and then a finally decision is taken. That is the reason why the relationship between designers and company department can be defined as a “mutual interaction”. Designers get new ideas about the market attending international fairs, reading magazines about textile, and of course surfing in internet. When new proposals come from the designers, there is very informal discussion among the different components (product developer, marketing saler, designer) and the leader of Lammhults is the one who really decides at the end. Most of the time discussions focus especially on costs of materials and costs of production. The relationship between the company and the designer is so that every final product represents a co-branding collaboration between Lammhults and the designer. This is really uncommon in Sweden furniture business.

One of the most important strategic vision by Lammhults is that its products have to be "timeless", meaning that all the products launched into the market have to last for a long period. This is one of the reason why the product and process development takes a long time. Additionally, special attention is dedicated to the environmental sustainability, according to the respect of ISO 140001 for production processes.

"We always try to find out the best and the most environmentally friendly material and process for our product, we consider it a reference point for our company." Lammhults

6.1.2 THE INNOVATION PROCESS

The crucial phases of the innovation process in Lammhults are represented by the concept generation phase and the new product development phase. First of all, usually the market department makes its own market analysis and plays an important role about which products should be developed and what are the specific needs of the market itself. Very often inside the company the market department decides which product should be developed and which designer should be the most adequate for that project. This typically user-centered approach implies an analysis of needs of a specific targeted user. The aim is not generating new proposals in order to introduce radical innovation of meanings and it is not either trying to modify the socio-cultural context where products are sold, whereas this happens in the Italian furniture industry. The design process starts with the concept generation. Initially preliminary sketches are made by the designer in-house, such as in her own independent office, usually in regular size and with a small prototype in paper. Afterwards real size prototypes are made. The number of prototypes is mainly three and everyone differs from the others for small details. Actually an important and distinctive innovative aspect for the company is the attention on details.

"The detail in a product is a sign of Lammhults, a sign of the designer. Details are the key through which the company protects itself from imitation". Gunilla Allard, designer

Details are studied in an *architectural* way and in a small scale (like in the jewelry industry). As Gunilla Allard said "the way to be unique is connecting feeling to technology". After the elaboration of the prototypes the product development department elaborates the CAD drawings and at the same time two persons work physically with metal details and a fourth person works with fabrics and sewing.

According to Figure 35, one important phase of the entire design innovation process is the research about new materials, which is usually up to the designers. This technological research is definitely more relevant than the socio-cultural research and it actually comes before the concept generation phase and it is a designer's task to build up efficient relationships with material suppliers. Designers make their own investigations about materials in collaboration with material companies within the geographical area where the research takes place and with Konstfack, which represents a design service in Stockholm for new designers who are doing researches about new materials.

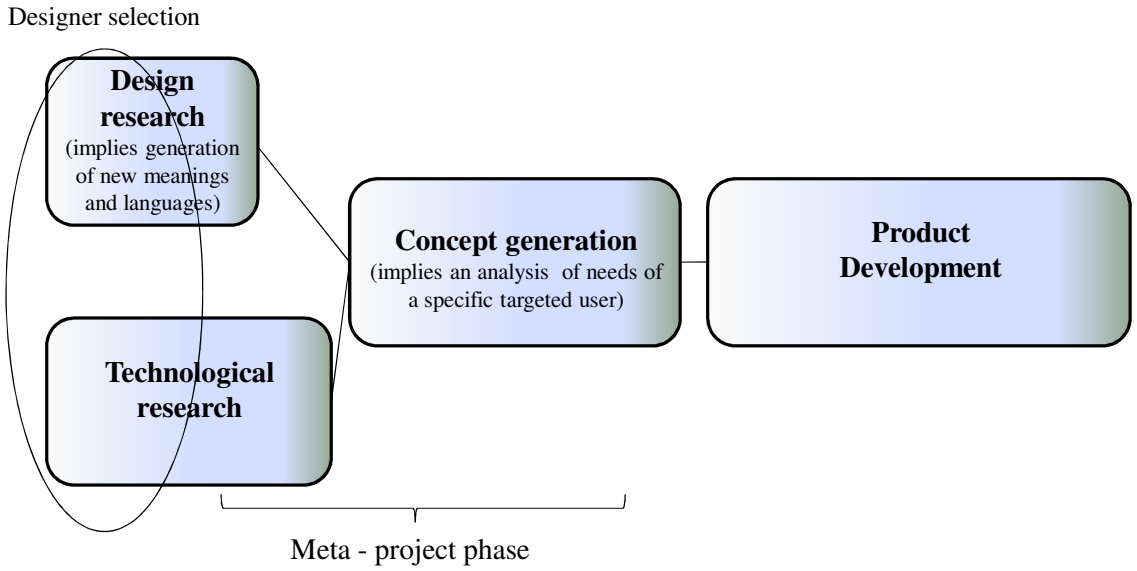

Figure 35 Design innovation process in Lammhults

Related to the design research and the elaboration of innovative concepts and in order to improve and optimize studies about materials, workshops are organized: they represent a kind of extra school for the factory where sketches and prototypes are realized, seminars take place in order to discuss what is needed, which kind of function, aesthetic, materials should take part to the products. Workshops are also contexts where designers can experiment new materials and understand which are the phases of the production of their own works.

"The designer and artist know what they want, keep the final picture in the end and take in consideration the processes used to reach that final product". Anya Sebton, designer

6.1.3 THE INTERNAL ORGANIZATION OF THE INNOVATION PROCESS

The entire innovation process is carried out inside the furniture company, there is no independent design laboratory upstream (like for Kartell and Alessi), which performs the Design and Technological research and carries out the concept generation phase. Even though the designer is external to the company, the whole process is controlled and supervisioned by members inside the company, who together build up a real Design Council (Figure 36) among which new design ideas are discussed and the product development process is carried out. Specifically the actors are 6 and they are the following ones:

- Managing director.
- Mechanical department manager.
- Sales department manager.
- Upholstery department manager.
- Purchases department manager.
- Product developer.

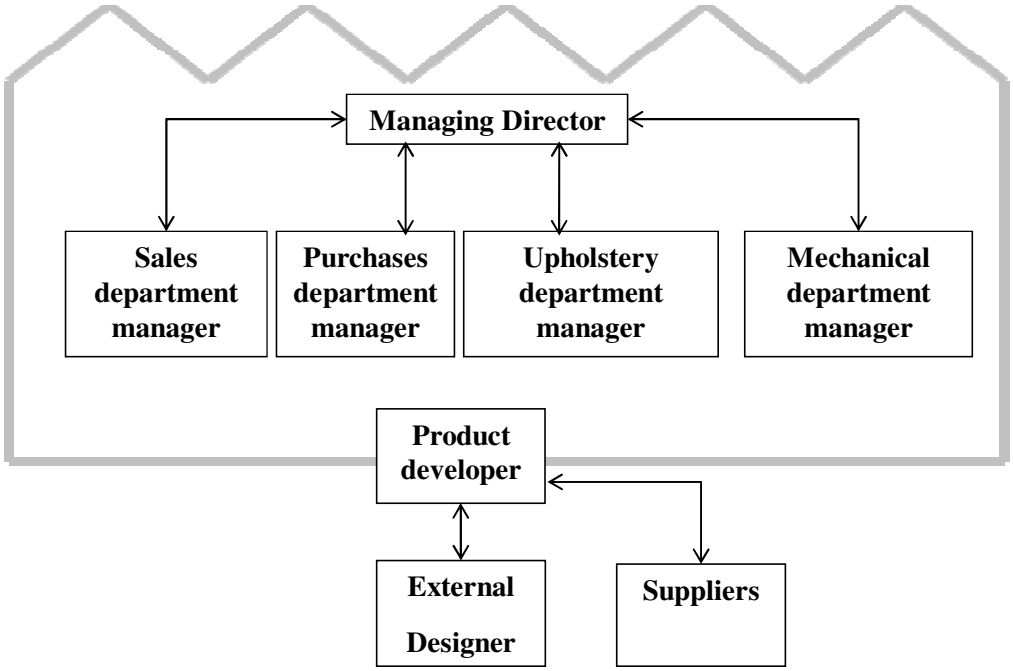

Figure 36 The Design Council in Lammhults

As it can be seen in the figure, the Design Council can be considered as a transversal organization where at least one person of each organization department has an active responsibility towards the innovation process. As it will be further explained in the following sections, the product developer acts as gatekeeper between the company and the other external actors. Moreover in Lammhults, even if the designer is the only external component of the organization, she has an active role in the concept generation and on the new product development process. Several meetings are scheduled, at least once per month, in order to have a continuous discussion about the innovation process. Those meetings aim at discussing about the ongoing projects and at the same time they aim at coordinating the several members who take part to this internal organization

6.1.4 THE EXTERNAL ORGANIZATION OF THE INNOVATION PROCESS

Design innovation in Lammhults are based on a collaboration between the two main company departments (marketing and production) and five freelance designers. Collaborating with a few external designers is justified by the fact different knowledge and different cultural inspirations of designers enables the company to develop new technical languages embedded in the products. Having external designers working in different geographical areas and with different technical solutions also implies that they can provide a lot of inputs and ideas and, on the other side, allows the company to have a restrict range of products and a uniform collection.

Only some products are actually produced and manufactured inside the company, so most of the production processes are outsourced to manufacturers and suppliers located in the geographical zone of Småland. Even for this reason, one the most important criteria by which a supplier is chosen by Lammhults is its conformation to the certifications about environment respect.

As the Danish designer Peter Hiort-Lorenzen said, one of the key factors for the success of Lammhults products is: “Get things not complicated”, because the processes have to be simple and understood by all the players (product developer, marketers, producers). The second reason is concerned with outsourcing, by which things get more complicated. Indeed the outsourcing of the wood and steel industry stated in the middle of the 90s changed the situation and the strategy within the company. There is no longer a deep

relationship between design elaboration and machinery and materials producers and the technology is no longer linked to the designer.

"You cannot know the material if you do not know the machinery. All the machinery in the past is started by the handicraft, now it is not like that anymore. You cannot have sensitivity of the material if you do not know the way it is produced and machinery knowledge is essential for that". Peter Hiort-Lorenzen, designer.

At this point it is opportune to introduce the configuration of the actors involved in the external organization of the innovation process (Figure 37).

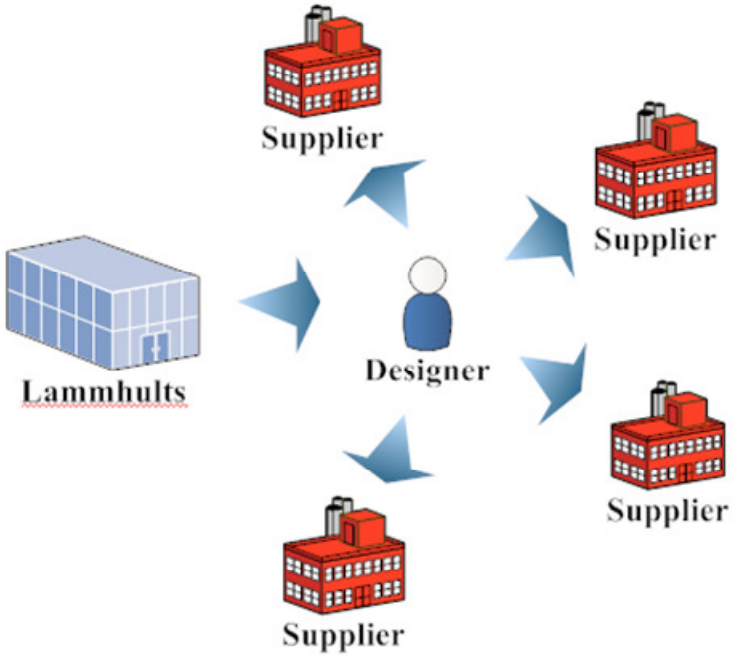

Figure 37 Collaboration coordinated by the designer as gatekeeper in Lammhults (adapted from Zurlo et al., 2002)

The external designer plays a central role in coordinating the relationship between the company (represented by the Design Council) and the external suppliers, both in the concept generation phase and, above all, in the product development phase. According to this scheme the designer acts as gatekeeper, since she connects the furniture company with the external suppliers. The small dimension of the company represented in the figure (small grey icon) underlines the fact that most part of the production processes are performed outside the company, outsourced to other suppliers who are located in the same

geographical area, such as Småland. So the role of the designer in coordinating the network of suppliers becomes strategically important both for the technological research in the upstream phase of the innovation process and, especially, in the late downstream phases. Actually his task even consists on finding the right suppliers and producers who fit with the technological needs of the specific developing product. For these reasons the designer is defined as gatekeeper and broker of technologies.

6.1.5 CINEMA EASY CHAIR by Gunilla Allard

"It was a dream of mine to make a small easy chair, with high comfort and a beautiful shape from all sides in a smaller, thin-line chair." Designer Gunilla Allard

6.1.5.1 PRODUCT DESCRIPTION

Designed by Gunilla Allard and showed at the Design Fair in Milan in 1994, this chair is still sold nowadays. With its 60 mm in the hanldles and 90 mm on the ladder, Easy chair had to be a much thinner than the common chairs already existing and it had to reflect this quality from all sides. Furthermore it had to be small and easy to move. For all these reason this product can be considered a breakthrough delivery, which actually revolutionized the design of chairs in the Swedish furniture industry.

The size of this chair is similar to the one of the seat of a small car. With a careful attention on details, this chair can be used opens up areas, hotel lobbies, private houses, waiting areas. This markets were actually for the company, because Lammhults furniture were sold for architects and private markets. Indeed, in Italy these markets are already mixed, in Sweden still not.

6.1.5.2 INNOVATION PROCESS AND ORGANIZATION

Initially the designer Gunilla Allard, who came up with this idea and proposed it to the Lammhults, realized some sketches by hand on normal size. Then the Design council started to analyze the proposal with three meetings, where the manager of production first appeared enthusiastic. Then all the other members of the Council approved the project. After this first approval, 6 to 7 prototypes were realized inside the company laboratory, where the product development started. The discussion and, above all, the detailed definition of the project about the product development generally has to occur very early in the process, in order to have previous ideas about the feasibility of the project and the economical and functional details.

The main actors involved the new development process (Figure 38) are the leader of the company, the product developer and the marketing sales manager and it might be very informal. Indeed, for Easy chair the discussion about the concept generation and, then, about the product development occurred during informal meetings between Gunilla Allard and the other members of the company. Gunilla has her own office in Stockholm, but she is always in contact with the departmental managers of Lammhults, given the fact that her collaboration with Lammhults has been lasting for more than 20 years. This is actually pretty unusal for the Swedish furniture business. Collaboration between designer and furniture company is generally temporary. In this case, instead, Gunilla Allard, as well as other designers, seems to privilege her collaboration with Lammhults, making it definitely the point of reference for the whole Swedish furniture business.

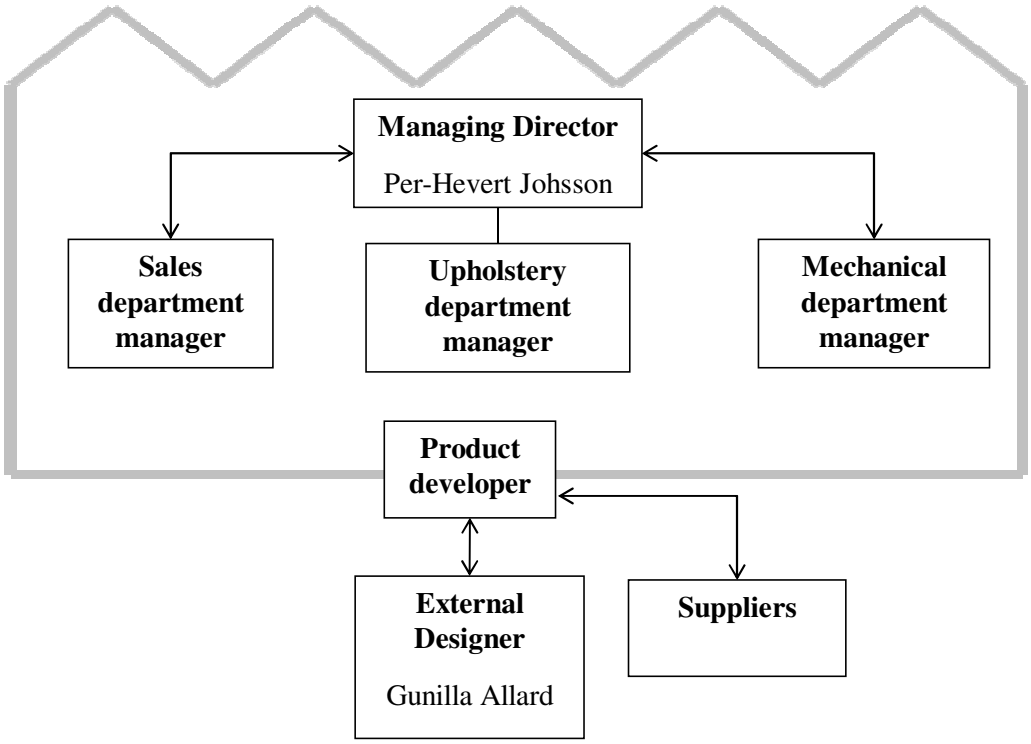

Figure 38 The main actors involved in the product development of Easy chair.

The same group of the meta-project decides also about the new development process. Nowadays the discussion is more focused on the product developer anyway. The economical evaluation was extremely important. The purpose was to create a really cheap and accessible chair, which could address a broad range of customers.

A definitely important aspect of the new process development is the collaboration between the designer and the companies which actually purchase materials. Gunilla often makes her own researches about new possible materials, usually investigating new worlds apparently far from the furniture industry, such as the automotive industry or the sportive industry. This enables an increase of the degree of technological innovation, that emphasizes the importance given by Swedish furniture industry to the technological innovation, that will be further explained in the following chapter.

6.2 OFFECCT AB

6.2.1 FIRM DESCRIPTION AND VISION ABOUT INNOVATION

OFFECCT was founded by Anders Englund and Kurt Tingdal in 1990 and the word OFFECCT comes from the English word “affect” combined with the Swedish word for “public” = “Offentlig”. The firm is located in Tybro, a small city in the west of Sweden, which is considered to be the Swedish capital city of furniture production. From the very beginning the company was composed by only three persons. Nowadays it consists of 19 employees and it is represented with its products in 26 countries with a turnover of 5 million euro.

“We are one of the most interesting design company’s in the world with original designs that care for the earth and the people that spend the time there.” Anders Englund, Design Manager.

Figure 39 Offecct exposition

In 1998 Offecct was increasingly growing and the market was stable. In this conditions Offecct saw the opportunity to grow and to reach a broader market. In 2000 the company, which was born ten years before, started a five-year development period. Firstly Offecct started to analyse the concept of “Scandinavian design” in order to find out the general opinion about it and what it meant to people, talking to members of companies within the

industry and to people outside the furniture industry. Offecct decided to start a cooperation with some of the few Swedish designers together with designers from all around world with different cultural backgrounds. The company contacted a number of Swedish and foreign designers in order to make them interpret the concept of Offecct and the guideline of the company. These designers all had multi-cultural backgrounds with experience from different parts of the world. In this way Offecct was able to transfer global opinions into their products. One might say that Offecct is the most internationally opened furniture company in Sweden.

"We work with 27 external designers in 11 Countries: We believe in International hybridism, every designer coming from any country in the world can create Swedish furniture, can actually follow Swedish values". Anders Englund

Offecct consists of two main businesses, Home (Interstop) and Contract (Offecct). Even if they are under the same main brand (Offecct) they are present in the market as two separate brands. Offecct mostly develops design for consumers, offices and public environments and produces furniture for creative meeting places, at home or at work. Home environment means creative living rooms which enables meetings among family members or friends. Moreover the company is narrowed on sitting furniture, since very few companies were able to produce creative and complex sitting furniture, especially upholstery and dressed furniture.

Finally, it is indicative the way by which Anders Englund defines how the firm is innovator and how it protects itself from imitators*: "Work fast, Run fast and have good lawyers".*

6.2.2 THE INNOVATION PROCESS

Products are ideated and developed together with external designers. The innovation process (Figure 40) basically starts when a new product idea is proposed. This new idea might come either from a need expressed by Offecct's Design Council or as a new idea from an external designer. Every month, Anders Englund receives about 500 design proposals from freelance designers. The Design Council is supposed to make decisions about which designer should be engaged and which particular project should be developed. The choice of the designer is seen particularly strategic in this company. The

collaboration between Offecct and the design consultants is usually temporary and this is the reason why the designer is chosen according to her suitability with the project planned to be realized. The non-exclusive relationship with designers is also interpreted as a possibility to introduce new messages and breakthrough proposals to the market, and to make the catalogue varied and heterogeneous. This aspect generally characterizes the Swedish market and it is one of the main differences between Sweden and Italy.

When a designer is chosen, she makes a drawing and elaborates an idea concept. Offecct does not want the designer to discover the company philosophy and the production and logistic system until she has done the product drawings in order not to inhibit the innovative ideas of the designers themselves and not to make it be influenced by the contingent process inside the firm. When the project requires a special material, the designer and Englund investigate about suitable materials and as soon as possible an idea is elaborated and a test is made in the production department. In this test the designer is involved and together with Anders Englund decisions about form, colour, measures, and materials are taken. Even in this company, the designer is one of the main responsible regarding the individuation and the establishment of the relationship with external suppliers, both in the upstream phases of the innovation process (technological research) and in downstream phase (development and production processes).

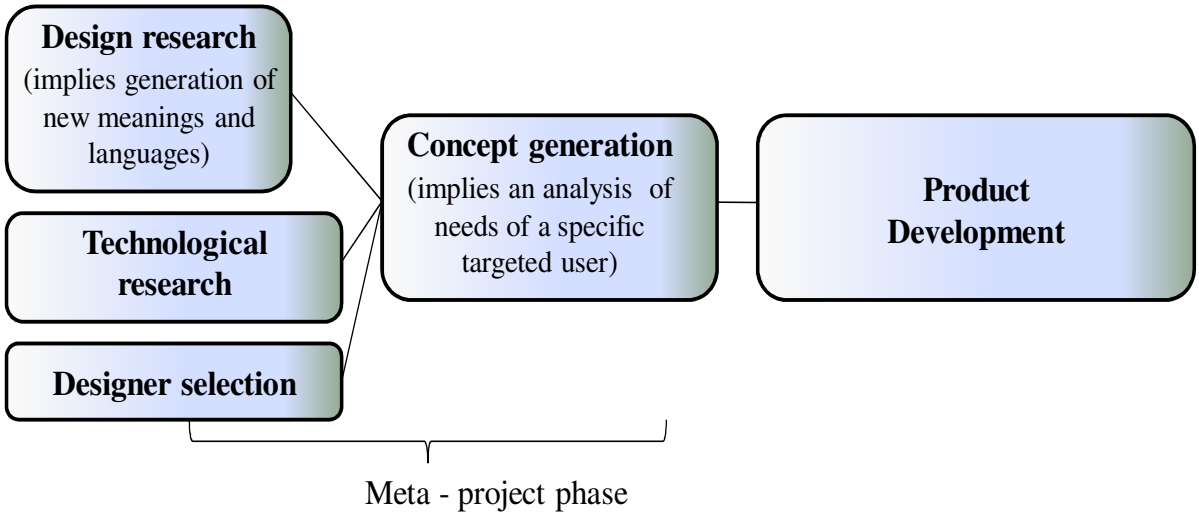

Figure 40 Design innovation process in Offecct AB

The new product development process in Offecct is perfectly scheduled from the temporal point of view. It includes the following phases, each one performed during a specific week of the year:

Week 50 = Starting.

Week 22 = First Prototype.

Week 34 = Second prototype.

Week 40 = Conclusion.

The weeks numbers are counted from the first week of January and so on. In order to have a successful new product development process, Offecct tries to develop the product listening to user needs as well as forecast new attitudes, new ways of handling situations and new ways of thinking in the socio-cultural environment. Furthermore, the products need to be developed in order to meet the market and the existing and emerging customer needs. During the product development process, studies about the production process take place. Anders Englund, the product developer of textile dressing and members of the production and purchase department discuss about how to implement the production process. During the all development process a constant communication between the designer and Anders Englund takes place. Then, when the production is launched, usually a formal contract is set between the company and the designer.

6.2.3 THE INTERNAL ORGANIZATION OF THE INNOVATION PROCESS

Offecct AB have 30 employees, each one with multifunctional tasks, and that means that every employee has transversal knowledge about the company. It is structured as a horizontal organisation where self-managed groups with different responsibilities collaborate with each other. Four people work with marketing, two persons with administration and two persons with the connection between purchase, manufacturing, and distribution.

The design office works with research and development department and it consists of five persons: Anders Englund who is design manager, Börje Larsson, Mattias Lilja, Mats Grennfalk and an external art director Eero Koivisto. Anders Englund works with products, design and development. Kurt Tingdal is the executive manager. Once every year at week 8 these members of the Design Council attend a strategic meeting for future

design in order to define the guideline in the process. Indeed, the process of product development in Offecct is a very open process and there is always a continuous discussion around new potential products. A product has always one dimension that is more important than the others and Offecct tries to focus on this dimension. Offecct has a Design Council that frequently meets for discussions on coming products (Figure 41).

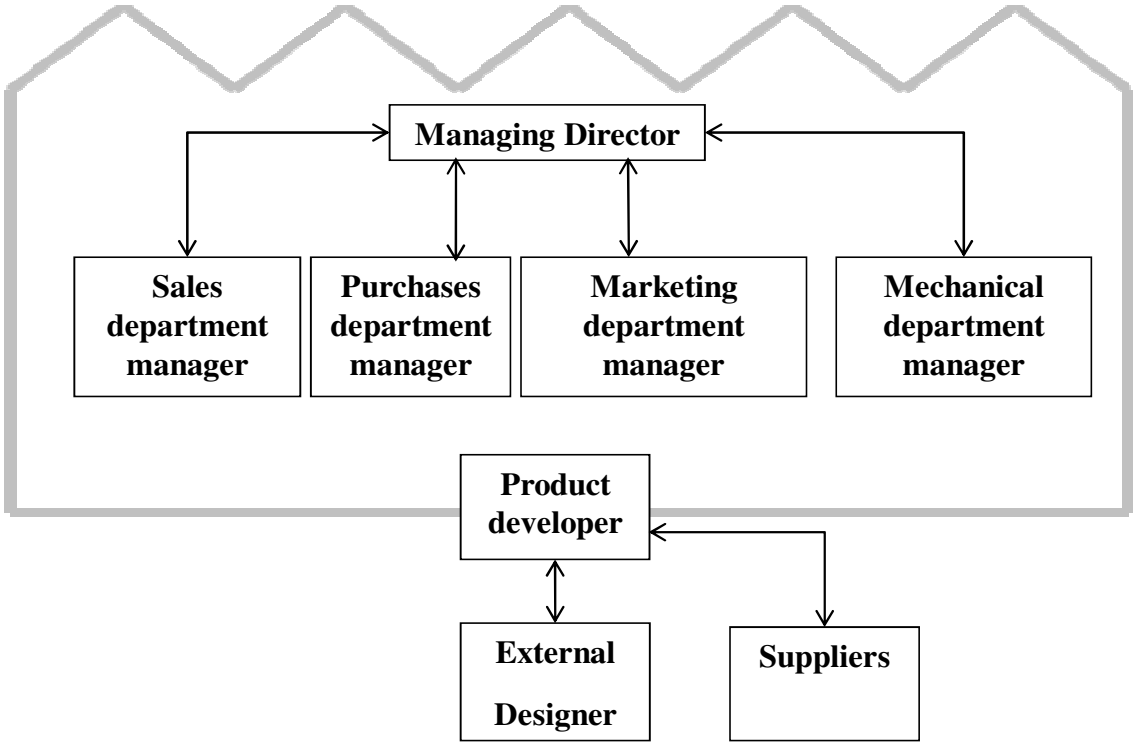

Figure 41 The Design Council in Offecct AB

As well as other actors, the marketing department is actually involved in the innovation process, and its contribute is essential in the beginning and in the disclosure of the development process.

6.2.4 THE EXTERNAL ORGANIZATION OF THE INNOVATION PROCESS

Offecct has a strict relationship with actors external to the company, such as designers, cultural word, companies of other industries, varying depending on the specific project developed, and the meetings with them, as well as the mutual communication, are planned in detail. Additionally, Offecct addresses the design discourse and the market after the

realization of the design project by using all kinds of medias: publish books, brochures and, above all, fairs, that are the ideal context where new ideas have the first contact with the public of customers. Specifically design fairs are the most important opportunity for Offecct to present their own projects to the public. This company, as well as others in Sweden, experiences the fair as the occasion where final products are presented to the market, and afterwards they are soon introduced into the market. Stockholm design fair in February is the point of reference for the entire planning of the innovation process every year.

One of Offecct's most important competencies is their network of suppliers which allows the firm to be very flexible in its choices of materials. The network of suppliers (and in particular material suppliers) plays a key role in the Offecct's business and consists of a number of suppliers within different fields ranging from steel producers to plastic producers and wooden craft. Offecct has always worked in networks, that allow the company to produce a broad range of products and at the same time a great variety of materials. The network consists of a number of material suppliers (ranging from plastics to wood) and it makes Offecct's identity singular and distinct from the competitors. Usually most part of the production process are outsourced, so this makes the network of suppliers being strategic both for the upstream phases of the innovation process (technological research and experimentation of new materials), and also for the downstream phases (product development and production). Additionally, in order to guarantee the quality of their products Offecct controls every step of the product development process, from the idea to the finished product. The phases carried out inside the company are the following ones:

- The production and the assembly of the upholstery part of the product.
- The assembly and the finishing of the final product.

All the other phases are outsourced to "key suppliers" located in the furniture area of Tybro, in the south-west of Sweden.

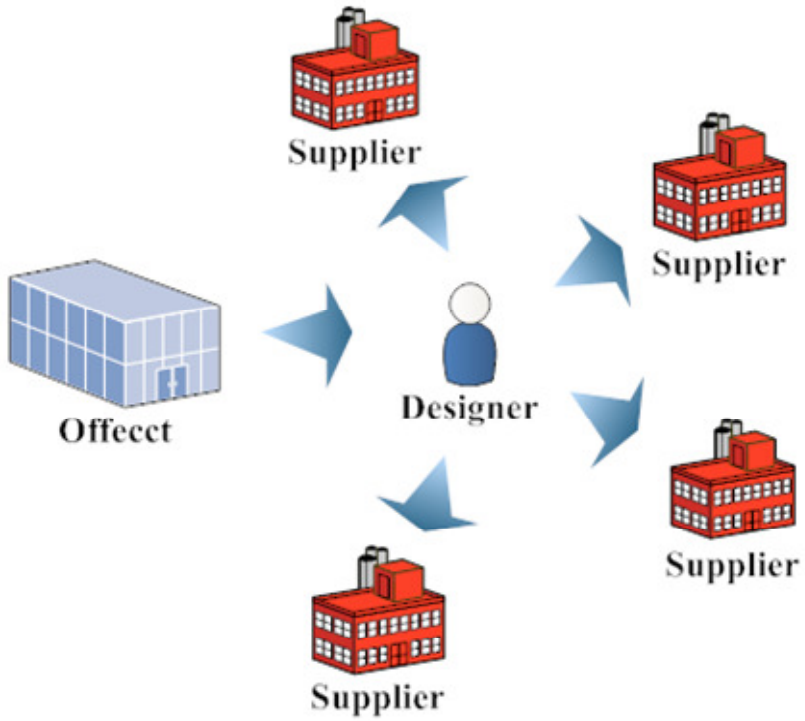

Figure 42 Collaboration coordinated by the designer as gatekeeper in Offecct (adapted from Zurlo et al., 2002)

The scheme reported in Figure 42 leads to the same reflections done for Lammhults. Once again, the role of the designer is crucial in the constitution of the supply network and, secondly, the small dimension of the furniture company is linked to the small amount of production processes performed in-house.

The furniture produced in Offecct is designed by external designers from all over the world, but it has always been manufactured in Tybro. Anders Englund underlines that, even though the biggest cities of Sweden, such as Stockholm and Gothenburg, become increasingly more important, to Offecct and to the entire furniture industry the craftwork knowledge within the same geographical area has been important for the development of the company. Indeed, Offecct takes part to TMF (Swedish association of wood and furniture industry) & IUC, which is a network of companies working together in order to effectively explore regional competences.

Offecct has also collaborated with the car industry and with many universities and it collects information about materials from research carried out at universities of technology and design schools. In order to gather inspiration and knowledge about new materials and

technologies, Anders Englund travels frequently all over the world. Offecct also has its own library and it consists of literature, research papers, material tests, and brochures. Most of the material is collected from different suppliers but it is also collected by Englund or other employees during travels, fairs, and other situations.

Offecct has resellers all over the world and they sell mini-batches to them. Usually a store has only one piece of furniture available in order to test the interest for that piece among consumers, so if a customer requests one piece more he has to wait, since it has to be sent from Sweden. This leads to a production driven by customer orders and, on the other hand, implies higher prices.

By the way, Offecct has its own internal Material Lab, where technicians together with designers can actually experiment their new discoverings. This emphasizes the extremely strategic importance given to the technological research carried out in the early phases of the innovation process. Englund, in collaboration with some external designers, also works with the textiles industry in the geographical zone where the company is present. Additionally, in order to understand the future and predict new influences in the socio-cultural environment, Offecct interacts frequently with other industries. The aim is to understand what affects people in other fields and transfer this knowledge to the production of furniture. Moreover the managing director has been involved in projects at the Royal Institute of Technology in Stockholm regarding researches on factors affecting human stress and the brain stress in private and public environments.

6.2.4 ROBO CHAIR by Luca Nichetto

Figure 43 Offecct AB, Robo chair by Luca Nichetto, 2009

6.2.4.1 PRODUCT DESCRIPTION

The inspiration for the Robo's design found inspiration in the Icelandic singer Björk's 1999 video for the song "All Is Full of Love" directed by Chris Cunningham in which the main protagonists are robots that take on human characteristics.

"I find the idea that a robot could become a living being really exciting, and so I imagined what would happen if the same principle were applied to the design of a chair. The goal was to create an object that respected the environment by playing with a design comprised of separate pieces so that the chair could be transported in a small box. My vision became reality when I translated the forms of a 'humanized' robot into a chair, placing particular emphasis on the shapes of the robot's 'limbs'. The project couldn't have been called anything other than Robo." Luca Nichetto, freelance designer.

"Thanks to a structure comprised of separate parts that are assembled to create the whole – the seat, the seat back, and the legs – Robo is a truly unique chair whose easy assembly can be compared to that of a Meccano set. When shipped, the disassembled components of the chair fit in a box measuring only 50 x 50 x 20cm, a fact which reflects Offect's principles, since this company has always had a strong interest in environmentally friendly design"[1]. Indeed the choice of separating the chair into 3 parts let the transport be very compacted and the number of transportable stocks increase in a considerable way.

"Even the choice of materials, from the plywood and compressed textile made of recycled plastic bottles to the glue, further underscores the company's desire to respect the environment." Luca Nichetto

The seat, in fact, is made up by compressive felt, which are combined with wood and a layer of metal. This represents a great innovation for the company, in terms of eco-sustainability. Moreover even the production process has been innovated. It has been leaded by Italian suppliers and at the same time all regenerative products (natural colors and paints, for example, have been used).

[1] http://www.lucanichetto.com/ita/Projects/Furniture/Robo

6.2.4.1 INNOVATION PROCESS AND ORGANIZATION

The concept generation of Robo chair started when Luca Nichetto, the designer, came up with this singular idea. Nevertheless the contribution of the internal Design Council was fundamental because it gave some technical advices and then the final approval. After a discussion which lasted a few weeks, Luca Nichetto made his drawings and he showed them to Offect's Design Council. As explained in Figure 44, the main actors of the innovation process for Robo chair have been the Managing Director, Anders Englund, the sales department manager, the Art Director and finally the designer, Luca Nichetto. The period of product development lasted five months.

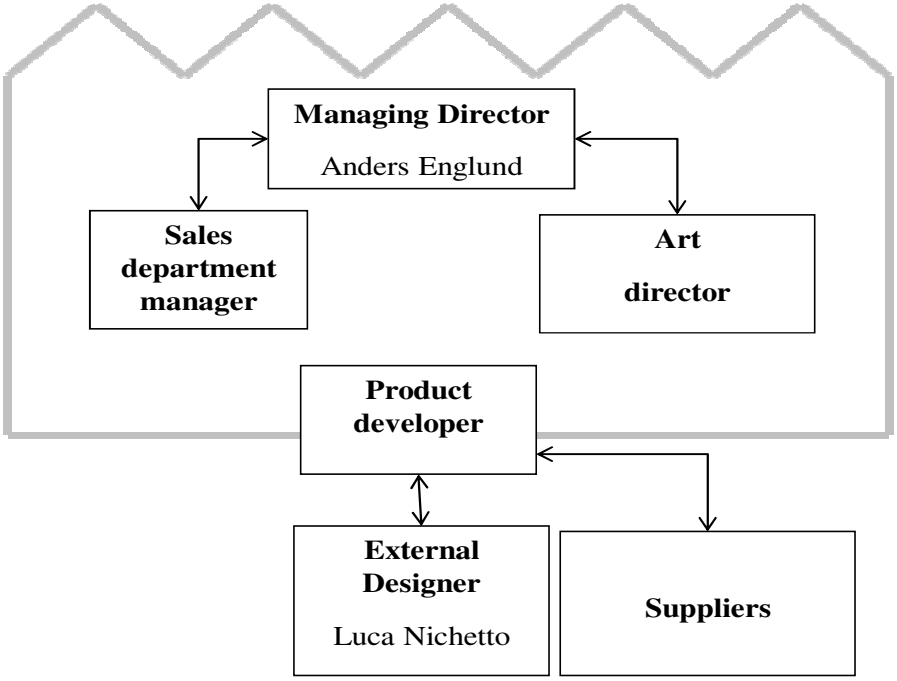

Figure 44 Actors involved in the innovation process of the Robo chair

After the ideation, the new product development started and some modifications of measures were done in order to adapt the design to the production process. After that, a test was carried out in the production area in order to find out the feasibility of the production process. Afterwards, the proportions were tested and a decision about colours, form and measures were taken. After this test the production process was set and the designer was not involved in this phase. The actors were the Managing director, the Sales manager, and the Product developer, Anders Englund (Figure 45).

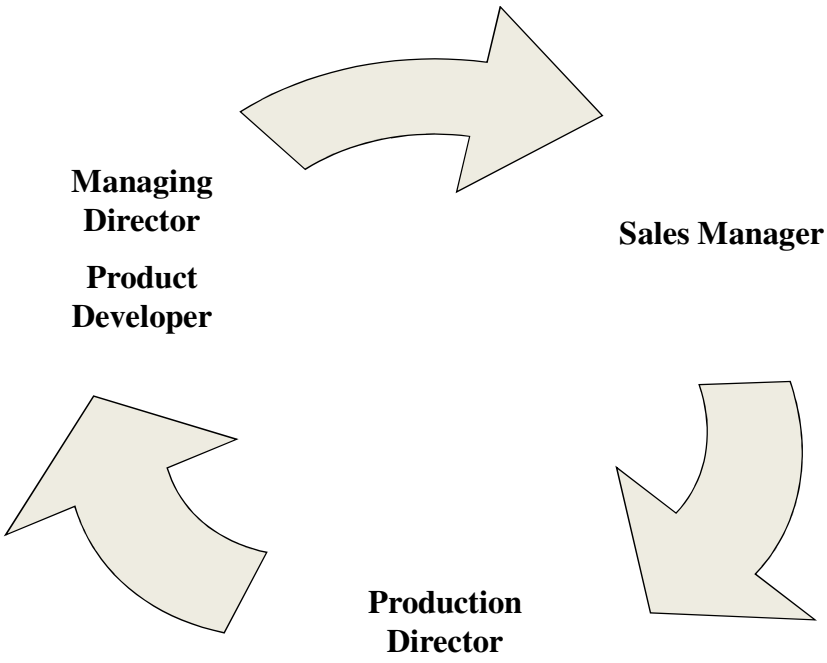

Figure 45 The second stage of product development for Robo chair.

As underlined in Figure 46, almost all production processes of Robo chair were carried out in Offecct's own production department, except the production of mechanical solutions (screws and connections) which were done by external suppliers, being part of Offecct's network of suppliers. This fact is underlined by the big size of the company's grey icon in Figure 46. Once again the importance of the designer as broker of technologies is emphasized by his role of being in the centre of the network linking the main company to the external suppliers. This fact is actually relevant for Offecct (and it has been important for Robo chair) as well as for other Swedish furniture companies. Actually Luca Nichetto, the designer of Robo chair, having his own design company in Italy, was the one who contacted material suppliers in Udine (Italy) in order to have some technical advices for the concept generation phases and the development of this idea. This product is the clear example of how the innovation process occurs in Sweden. Firstly the importance of the contribution of international designers (Italian, in this case) as keepers of languages and technologies. Secondly the role of the designer as key member of the designer discourse, as broker of technologies and as linkage between the company and the other external suppliers.

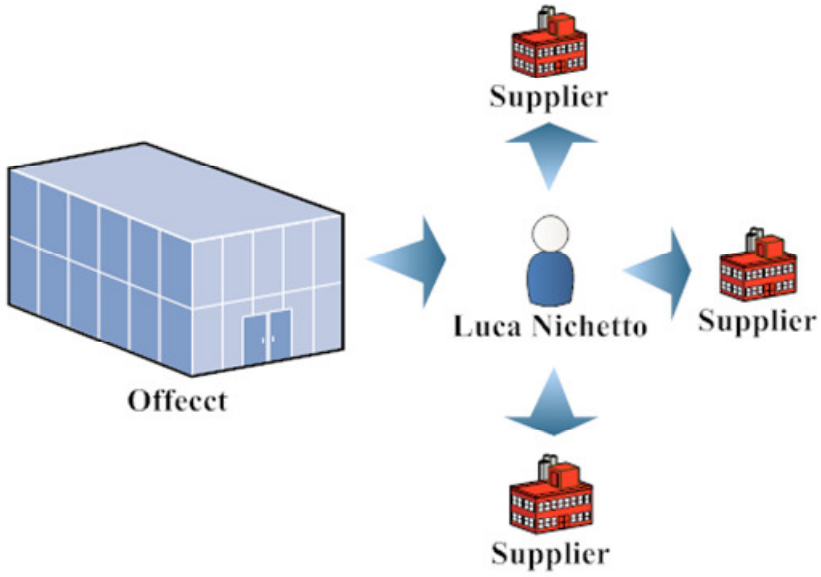

Figure 46 Collaboration coordinated by the designer as gatekeeper in Offecct for Robo chair (adapted from Zurlo et al., 2002)

About the introduction into the market, first a very simple prototype was made and after that it was shown at the Stockholm fair. In fact, it was introduced to the fair in an early development phase in order to have the opportunity to modify the product's functional devices. This strategy is often applied whenever the product introduces radical innovation in design or functionality, but it is actually unusual for the Swedish furniture industry. The standard practice is launching the final product as soon as it has been presented at the fair, in order to allow the customer to be able to buy the product just seen at the Design fair.

6.3. BLÅ STATION AB

6.3.1 FIRM DESCRIPTION AND VISION ABOUT INNOVATION

Blå Station founded in 1986 by Börge Lindau and it has become an important protagonist in the Swedish and international design furniture business basing its own success on the importance of the brand.

"We are a very small company but our brand is well-known all over the world. We do not have a strong sell tradition though". Johan Lindau

Until 1986 Börge Lindau worked as a freelance designer being employed mostly in Lammhults Sweden. After having a discussion with Lammhults about a project of multiple prototypes of a circular chair, in order to be able to apply his own ideas about design, Börje Lindau and his son started their own activity in Åhus in the southern Sweden. Nowadays, every part of the value chain is outsourced except the sales department and the marketing. As much as possible is actually done by suppliers. Blå Station aims at being innovative about the design process and product development. When they started to manage the company, Johan Lindau and his father went into the business with the idea to go beyond some taboos, to overcome the concept that people have about furniture and be innovative about the process by which products are made. Indeed, in order to address the evolving customer needs of higher product quality and, on the other side, the need to reduce production costs, Blå Station nowadays tries to execute new industry processes and new materials. By the way, before Johan started the activity with his father, he also worked in a manufacturing factory in order to learn compression moulding. Combined with studies on design meaning and processes, Johan Lindau also started to focus on the marketing and sales activities, considering them crucial for the success of the company. He said:

"In the 80s and the 90s the new product development was focused on the designer and everything was suited to the designer's requirements. Today we start from a market perspective." Johan Lindau, Production Manager Blå Station

Blå Station might be considered a small company, with a turnover of 2.5 million euro, 40% comes from the Swedish market and the rest from exported products. But it is well

known all over the world. Products are exported above all Germany, USA, Japan, England and Holland. Blå Station has today 10% market share of the Swedish design furniture segment for public furniture and home furniture. The company has 14 employees, distributed in production department and in administration and sales department. Johan Lindau became the president of the company in 2004 and he took over the position after his father, Börge Lindau, who is the founder of the company. Among the employees, three sales persons work outside the office and one is the manager of exports. One person works within the marketing department and there is no special department for new product development.

6.3.2 THE INNOVATION PROCESS

The innovation process starts with the meta-project phase and it ends up with the product development phase as usual. Here below you can find the two different ways by which the elaboration of the meta-project phase is developed.

1. The designer comes to Lindau with an idea. Every week, Johan receives four of five emails from external designers who propose their own ideas to the firm. More often, interesting proposals come from designers with an already established relation with the company. One of the most recurrent problem is the feasibility of the project: according to Johan Lindau, unfortunately nowadays designers do not have sufficient skills about production processes and most of the ideas coming up have to be refused because they are not feasible. Nevertheless, Blå Station is open to explore new ways of production and this is why the product design does not have to be necessarily ready for the production process since the beginning.

2. The idea comes from Lindau, and the task to actually design the product is always given to an external designer. The chosen designer has to develop the design and prototype of the idea with which the Design director comes up. In this phase the designer is given total freedom, since in this particular phase the inventively originality comes out.

"I'm always trying to push up designers to do the unusual, without putting constraints on them." Johan Lindau

Lindau gets inspiration from items produced by other companies or from products of other industries and mostly from the way people behave or the meaning they give to things. Lindau communicates his inputs to the designer and he aims at transferring his own point of view without being too precise. Indeed he is aware of what he wishes for and he tries to guide the development in that direction, but at the same time he tries to take into account the designer's own inner ideas from one side and the design process itself on the other side. Johan Lindau usually collects information and does studies about new materials or new original ideas. Collaborating with the marketing department, he also tries to understand what is the actual need about a specific kind of product. After this first step, Johan tries to find the right designers who suit with the specific need he has found out and the designer is always an external freelance designer. The policy of the company is to collaborate with young and aggressive designers.

"We firmly avoid the presence of internal designers, we prefer young than old and established ones." John Lindau

Then the product development phase takes place and in this stage the contribution of the designer is fundamental. He actively participates to the modification on the product concept and also on processes. Blå Station does not have any particular department of new product development. The reasons are the following ones.

- The company is small.
- The employees know how to make new products and the technical processes.
- The relationship to suppliers is as close as the collaboration with other industries.

The production processes are carried out outside the company, similarly to what happens in the previously mentioned case studies. After the product development phase a prototype is actually realized and most of the time it is ready to be shown at the Stockholm fair in February and the Milano fair in April. After these fairs the product can further be modified and enhanced, according to the suggestions given by design experts and customers. Blå Station usually produces three new products a year and the development processes is scheduled so that the products are ready for the two big fairs that the company attend. Every year about 10% of the company earning is invested in new product development activities.

6.3.3 THE INTERNAL ORGANIZATION OF THE INNOVATION PROCESS

The entire innovation process at Blå Station is mainly lead by Johan Lindau and the external designers with whom he collaborates, and Johan Lindau is the only one person internal in the company who is actually involved in the new product development process and at the same time he is the one who manages all the communication and public relations with external designers and suppliers. Furthermore Johan decides how many and which projects have to be developed. So, in this small company the Design Council (Figure 47) is basically composed by Johan himself, who is then also the responsible of the relationship between the company and the external members. The concept generation phase as well as the product development process are performed in-house, where the Managing director works together with a few collaborators, from whom he takes technical advices, even if he is still the only factotum responsible inside the company.

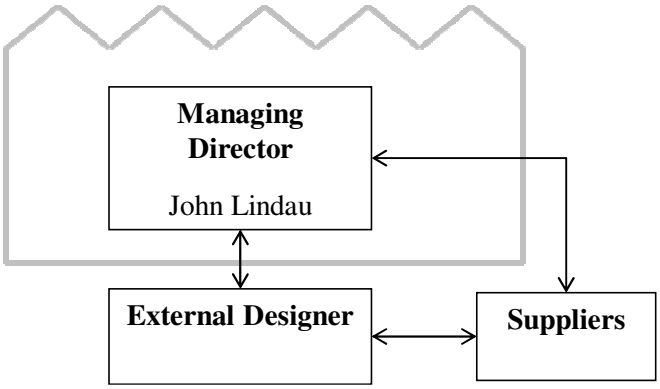

Figure 47 The Design Council in Blå Station

Very often Johan Lindau organizes meetings with some well known designers in order to discuss ideas, trends, socio-cultural environment. The goal is not necessarily to come up with great innovative ideas all the time but rather to keep everyone updated and sometimes in this way new project ideas are elaborated. John Lindau keeps this opportunity to discuss about new incoming trends and, at the same time, to keep himself updated about new consumers' needs. At Blå Station no structured and formalised methods are used in order to analyse the market but the only method Johan Lindau uses is keeping an open-mind towards the environment and keeping himself updated on the

designers' world at different design-schools in Sweden, looking for young designers who can propose new trends.

6.3.4 THE EXTERNAL ORGANIZATION OF THE INNOVATION PROCESS

Without the contribution of suppliers in financing the technical tools and carrying the risks of trying new ways of producing furniture, the company would not be able to produce as many products as they do every year. The company is working a lot with established technologies that are used in other industries, and tries to bring them into the furniture industry. Many suppliers see the benefits also for themselves if Blå Station succeeds to produce furniture in Sweden and in so doing the relationship is mutual, since the suppliers gain from Blå Station's brand when they sell their products. The company always involves the suppliers into the NPD process if they have to experiment new industry processes. When the product only requires already known processes, the firm uses its existing net of suppliers. Nevertheless, in every new project John Lindau finds the need for a new industry process and he establishes the connection with the new suppliers who are able to apply these new technologies. So the configuration regarding Blå Station is the following one (Figure 48), where the Managing Director, Johan Lindau, is the central point of the entire network.

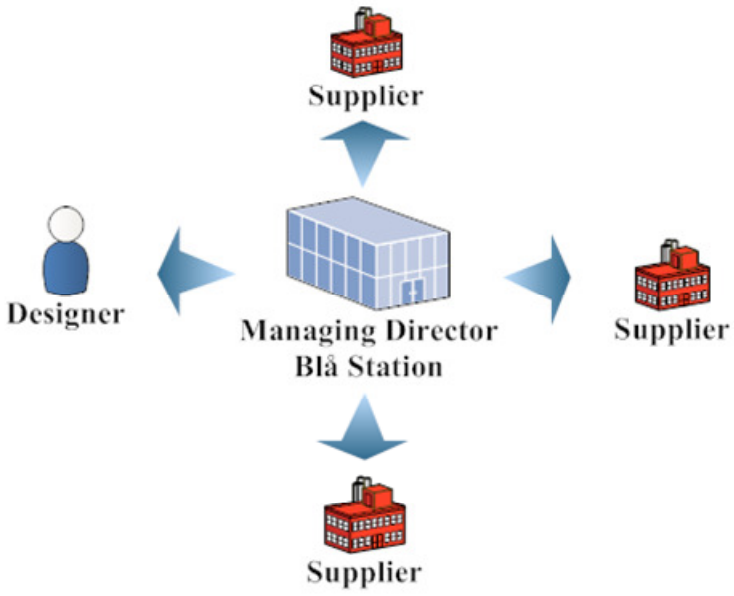

Figure 48 Collaboration coordinated by the Managing Director in Blå Station (adapted from Zurlo et al., 2002)

6.3.5 INNOVATION C by Fredrik Mattson

Figure 49 Blå Station, Innovation C by Fredrik Mattson, 2002

6.3.5.1 PRODUCT DESCRIPTION

Innovation C initially was the result of a task given to all the students at Konstfack, the Design School in Stockholm. It was designed in 2002 by Fredrik Mattson, and initially it was projected for the waiting area of Arlanda airport in Stockholm. The task was simply to design a piece of furniture for the airport. The only instruction was that the furniture should have been suitable and functional for an airport. This only restriction implied a number of extra restrictions in the sense of measures and functionalities. For example, a vacuum cleaner had to able to reach all the parts of the floor and not to be impeded by the chair itself. The innovativeness of Innovation C consists on its product language and its adaptability, since it is a dynamic piece of furniture and it combines two separated and static pieces of furniture, a chair and a table. Innovation C is used in many creative meeting places such as offices, universities, and conference rooms and it still sold all over the world.

"It revolutionizes the look of the space where it is used. If you use three chairs and tables instead of three innovation C chairs the result is definitely different." Fredrik Mattsson, freelance designer.

Innovation C is still being sold nowadays and it still represents a point of reference for Blå station brand portfolio.

6.3.5.2 INNOVATION PROCESS AND ORGANIZATION

When Johan Lindau contacted Fredrik Mattsson to commit this work to him, he gave him a very detailed product brief, with punctual and particular details regarding the product. The particular thing regarding the meta-project phase of this product is that the designer himself had to develop the idea and the new product, building the prototype by his own. Bla Station does not have any product developer and this is why the relationship between Johan Lindau and Fredrik Mattson has been extremely tight and exclusive throughout the all project. Both the meta-project phase and the product development were carried out by those two actors, in collaboration with some material suppliers and with the producers.

In Figure 50 you can find the simple scheme of the actors involved in the innovation process.

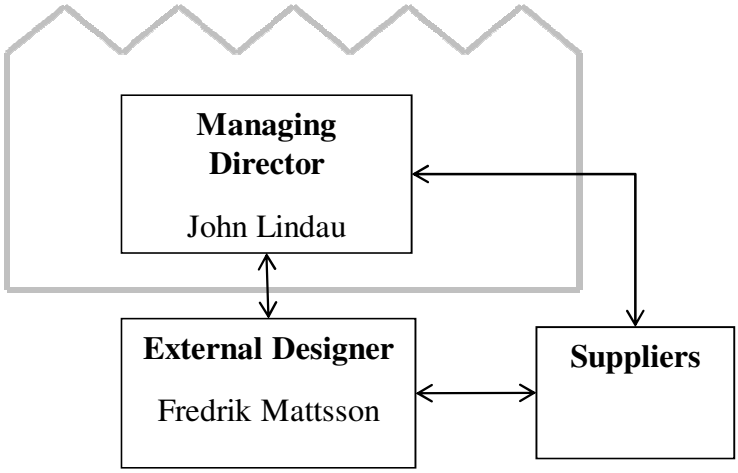

Figure 50 Actors involved in the development process of Innovation C

The technology used in the production processes of Innovation C is pretty simple and this is the reason why the product did not deserve any researches about new technologies or processes, and additionally Blå Station consulted suppliers from the already established network they had. The changes made by Johan Lindau in order to make the surface of the product softer influenced the production processes and complicated them, but still in a way that manufacturers could easily handle it.

6.4 MITAB

6.4.1 FIRM DESCRIPTION AND VISION ABOUT INNOVATION

Founded in 1979, Mitab Production AB is a design furniture company located in the Swedish city Tranås in the middle of Småland, a Swedish area with a long tradition of furniture production. The firm initially had a small number of employees and it consisted of many different and separated business units. Since 1992, Mitab Production AB has one owner, Jan-Olof Torstensson and the company is involved in every phase of the value chain, from production to distribution. At the beginning of its history Mit AB was mostly focused on the production process, but nowadays much effort has been put into marketing activities.

Figure 51 Mitab brand

At the beginning of its activity Mitab made furniture only for home environments. The researches and studies at the time were focused on steel details and metallic furniture. In the beginning of the 90s the trend changed and steel furniture was not requested anymore. In 1991 Mitab decided to change focus and entered the “office environment” segment, since the effects of the recession that occurred in those years were much weaker in this sector.

Nowadays Mitab, which has resellers in Sweden, Holland, Denmark and Norway, develops and produces furniture, mainly in metal, for home environment office. The design is characterized by a simple and elegant style, and the company produces furniture which firstly has to be environmentally friendly. The furniture uses reusable materials as much as possible and suppliers, materials, and production processes are all oriented in order to decrease the impact on the environment.

All new products are presented to the market during Stockholm Design fair in February every year, which is the most important marketing channel for Mitab. At the fairs the marketing sales try to make people understand the meaning of the product and the reasons why the product is built for. This is why designers are present at the fairs in order to build a direct communication with the customer. Every year Mitab introduces three to five new products to the market. Often there are eight to ten products in the NPD process and among these, three or four are introduced to the market every year.

One of the main characteristics of this company is that it tries to make the design suitable for the production process and in so doing the meta-project phase and the new development phase are extremely related to each other. This fact keeps the costs of production low and consequently the company increases its profitability.

6.4.2 THE INNOVATION PROCESS

The most important phase of the innovation process (Figure 52) is the concept generation, which is actually carried out in a singular way. Marcus Torstensson, sales manager, is the key actor of this phase and his task is to collect information about the customers' needs and at the same time to decide which idea has to be developed. The sales people act as antennas towards the customers and the market in a continuous process: they try to analyse what kind of products competitors have and the reason why one product is sold more than others. This aspect clearly identifies the strategy adopted by Mitab in terms of design innovation. The company bases its own innovation on studies about customers' needs and on coming up trends. The activity carried out by the sales department is fundamental in order for the entire innovation process.

The choice of the designer is a specific activity carried out in a singular and very unique way, since it is made according to researches developed inside the company. Indeed, designers are selected considering their past works, even if Mitab is very open to new contacts and new designers. Over the last few years the company has been looking for young and unestablished designers, who actually introduce radical innovation in meanings on the products that they project.

"Every year we introduce in our designers' network one more young designer, in order to have fresh energy inside our company". Torstensson, Managing Director

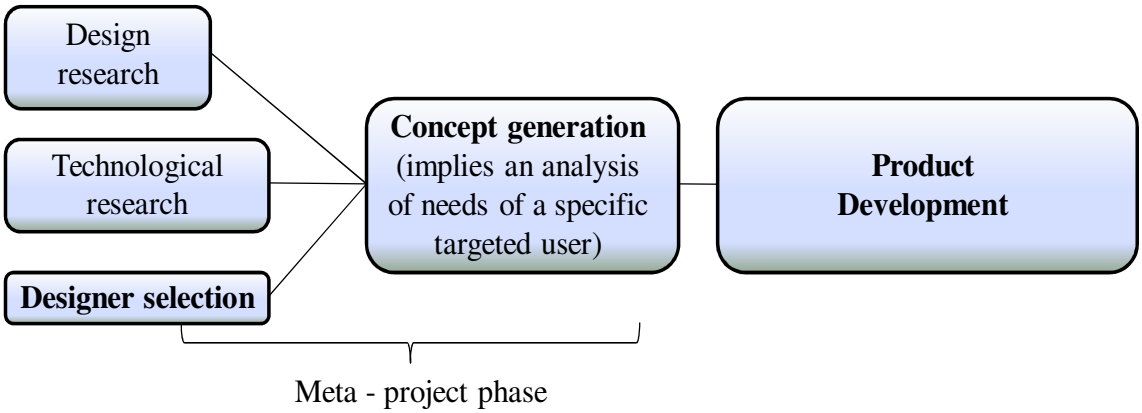

Figure 52 Innovation process at Mitab

There are three main sources of inspiration for the new concept generation:

1. External inspiration, basically figured out by the sales department.
2. Internal inspiration, which means that the Design Council looks at the range of products already present and tries to identify some missing in order to complete the product collection.
3. Designer's inspiration: designers themselves might propose ideas to the company.

After the definition of the product specification elaborated by the Design Council internal to the company, it is sent to the chosen designer or to a series of different designers, in order to get the final project. All the ideas proposed by designers are stored inside the Design Council and they are evaluated every time the Council takes place. The

concept generation starts when the members look through the suggestions and they compare them to the studies about customers' needs carried out by the marketing department. Mitab tries not to put restrictions on the designer and not to give too specific explanations of what the company and market are looking for, since they believe that the creative process of the designer must lead the product development process. The Design Council and the designer then discuss the drawings. Mitab might have opinions and make changes so that the product becomes more suitable for the production or so that the proportions and materials are aligned with the firm philosophy. At those meetings interesting product suggestions are chosen and discussed and the common evaluation which is carried out is based on company's needs of development from one side and customer needs from the other side. Finally a decision is taken and it has to be approved by everyone who is a part of the council. Not every member of the council takes part to the meeting and the managing director is the one who decides who should attend the meeting. Anyway the manager is the only one who takes the final decision about launching a product into production. On the main page of the web site you can read a statement about the "concept" of the design process:

"Our conviction is that the best of design comes from the desire to create. That is why we work with designer outside the company. Young, contemporary, intelligent designers helping us develop a range of products always with a special something to add. Age, gender, nationality or education is of no interest. It is always the idea of a product that is evaluated". Mit AB web site

Once the project-idea has been perfectly defined, the new product development process starts. Firstly a prototype is made in order to have a concrete idea about the project. Anders Johansson, who is the manager of production, is responsible for this phase and during this "evolution phase" the prototype is continuously sent to the Design Council in order to modify the first prototype and adapt it to the market's needs. The final result of this interring process is the elaboration of the final prototype, which can be launched to the production processes afterwards. According to this description it must be said that the concept generation and product development are given extreme importance, and both phases are set in a sort of circular interaction between the Design Council, the product developer and the external members. Every change brought to the initial idea passes through the approval of the Design Council and of the product development, so that the

final idea concretely built up with the definitive prototype is shared among all the members of the Discourse.

6.4.3 THE INTERNAL ORGANIZATION OF THE INNOVATION PROCESS

The company has 25 employees and the organization is flat and horizontal. An open dialogue between the staff occurs mainly because in the company four members of the same family are employed. One person, Peter Torstensson, is the manager of the whole production. The production is divided into business units with different responsibility areas and each one with a unit manager. Steel and sheet metal production is made inside the company, while wooden details are purchased from suppliers. The innovation process at Mitab is organized in a Design Council (Figure 53), which consists of nine persons. The managing director is in fact Peter Torstensson. The sales department and the production department consist of three persons each one, but they are represented only by one person in the Design Council. The purchases manager and the manager of technology complete the Design Council. As already described in the section above, the Design Council plays a crucial role during the meta-project phase and it is coordinated by the Managing Director.

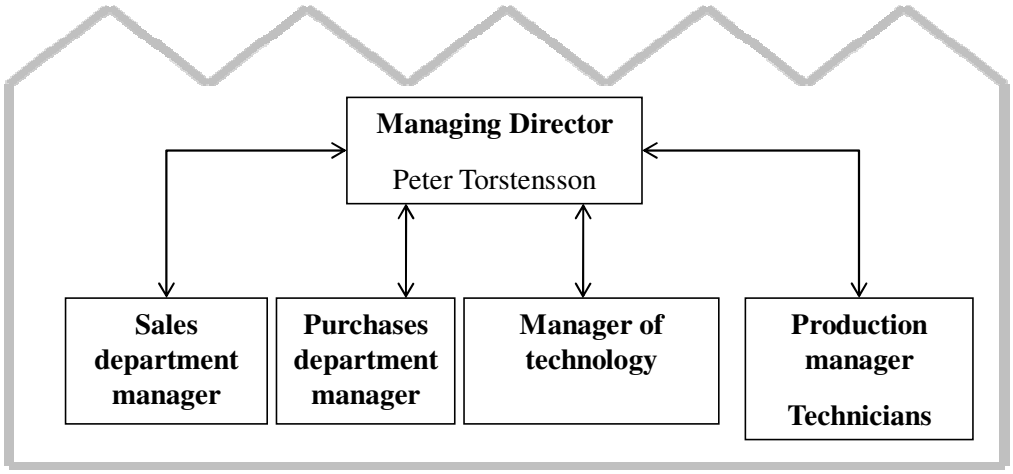

Figure 53 The Design Council in Mitab

During the product development process the product developer plays a key role as well, since he has to coordinate the communication between the Design Council and the

designer. Actually, depending on the specific project, the product developer can be either the managing director, the manager of technology and purchases or Marcus Torstensson himself. The product developer receives the prototype from the external designer, he sends it to the Council and he also enhances the prototype with the designer himself, who is actually involved in this whole process, discussing changes and modifying details of the product. In order to keep the process secret and unavailable to competitors, the prototype is seldom moved out externally to the company and only the designer and eventually other external members actually take part to the company meetings. The communication occurring among the members internal and external to the Product Council is explained in a detailed in Figure 54.

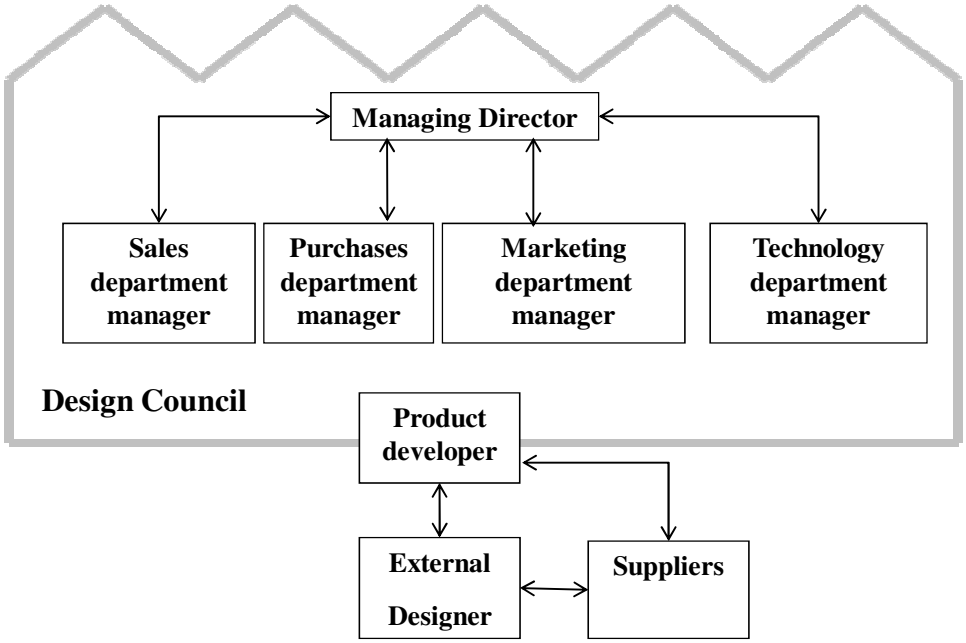

Figure 54 Communication and actors within the product development process

6.4.4 THE EXTERNAL ORGANIZATION OF THE INNOVATION PROCESS

Regarding the relationship between the company and the suppliers it might be said that 99 percent of the suppliers are Swedish and among them 60 percent of them are located in an area within one hundred kilometres far from the company's Headquarters. Moreover, almost 60 percent of the operation processes are carried out inside the company. In

particular, all the processes dealing with the upholstery and the metallic parts as well as the final assembly and packaging are carried out at Mitab production quarters. This particular aspect leads to some reflections related to the amount of production processes performed inside and outside the company. Over the last twenty years in Sweden as well as in Italy there has been a tendency to outsource most part of the production processes in order to have lower production costs. Recently in the furniture business this tendency has been basically inverted. High-quality furniture companies have experienced that the only way to keep high quality and differentiate themselves from competitors is to carry out strategic production processes inside the company, in order to link the product development to the production processes and reach an optimization both for the product and the productive perspectives.

6.4.5 THE TWEED CHAIR by Joel Karlsson

Figure 55 Mitab, Tweed chair by Joel Karlsson, 2003

6.4.5.1 PRODUCT DESCRIPTION

Tweed is a conference chair with strong character. According to what the designer stated, Tweed chair gives a warm feeling, the gables have a clear contour with the stitched metal pipes, and in addition to this feature there is no visible mounting.

The chair has a functional built seat and back to perform the requirements of a conference chair for longer meetings. It is also available in two types, with four legs and with wheel feet. The most important particular thing of this chair is that, even if it is a conference chair, it has to fit the idea of being an easy and feeling chair. When the company came up with the idea of producing this chair, the mission was to enhance the company's brand and potentiate its market share.

6.4.5.2 INNOVATION PROCESS AND ORGANIZATION

When the company came up with the idea of producing an easy-conference chair, the Design Council of Mitab discussed this idea without involving the designer chosen for the project. The designer never took part to the meetings, he only was aware about the results of the discussions occurring among the Council, he always upgraded his sketches according to the suggestions coming from the Council.

After the final decision about the realization of the product, the revisionary drawings made by the designer were immediately sent to Mitab production for a first prototype making. Jan-Olaf Torstensson, the project manager, then met the designer to discuss the prototype. They made a few changes to better match the product with the production process and at the same time the prototype was sent to the Design Council for an appropriate feedback. During this phase the collaboration between the designer, the product developer and all the members of the Design Council was extremely intensive. Even for this case, the central role of the Council for the final approval of the project must be underlined. Thus, every change made by the developer or the designer passed through the approval of the Council.

The Tweed was developed in 10 months before being introduced to the market and in this development process all the suppliers were involved. The designer as well visited Mitab production six times in order to discuss prototypes and changes. After four prototypes the product was ready for the final production. Here below (Figure 56) you can find the main actors of the Design Council involved in the meta-project phase and then in the new product development process.

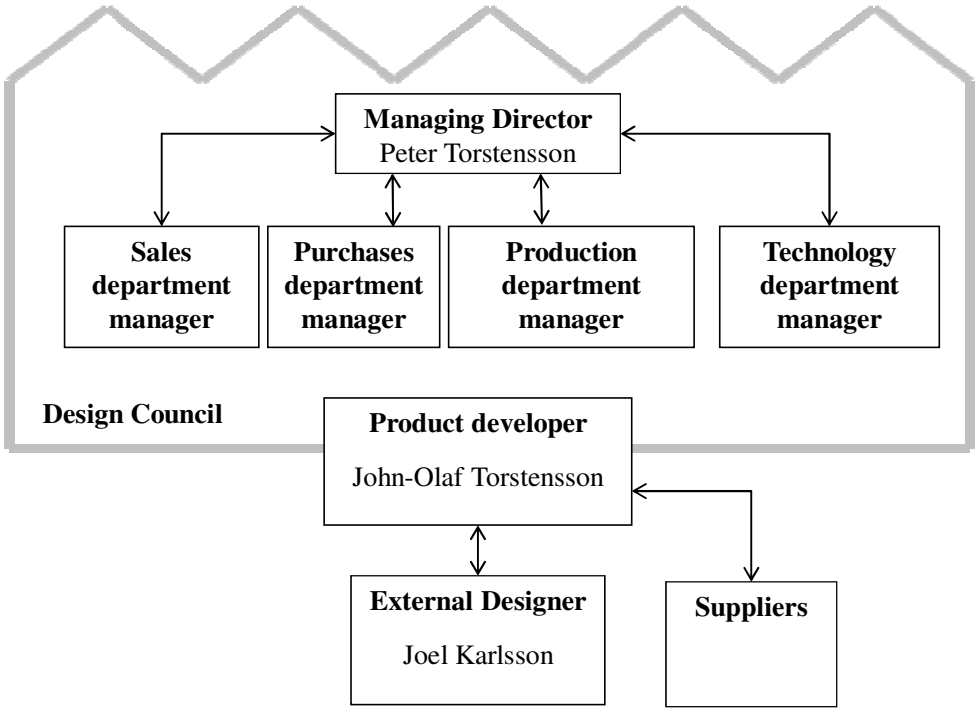

Figure 56 The Design Council for Tweed chair

The main part of the Tweed chair could be supported from suppliers already established within the firm's network. However, a new production method was introduced in order to produce this chair. Firstly the company was pretty sceptic about this new technology of moulding tubes. Jan-Olaf Torstensson, after many discussions inside the Design Council, established the relationship with the supplier and after that, this technology was used to any other product of Mitab collection. This might be considered a clear example of technology innovation inside the company. Indeed, since then this particular production process has become a strategic technical skill for the company, being used for many other projects and being internalized inside the company's boundaries.

The Tweed chair was introduced to the market at the Stockholm fair in 2008. At the presentation, the managing director, Peter Torstensson, the designer, and the sales staff were present. No marketing activities regarding the product had been done before the fair. Therefore, the product was completely new to the market and in order to make the market aware about the innovativeness of the product, the designer attended the presentation at the Fair and his task was to present it to the visitors.

CHAPTER 7

A COMPARISON BETWEEN THE ITALIAN AND SWEDISH FURNITURE INNOVATION MODEL

According to the reference point elaborated in chapter 5 and the case studies analyzed and presented in chapter 6, we can identify some points of commonality and differences between the Italian furniture industry and the Swedish one. Those commonalities and differences will be briefly introduced here below and then analyzed in detail within the chapter.

The most relevant points in common between the two businesses are the following ones.

1. Both Italian and Swedish furniture companies rely on external designers for their innovation process.
2. The involvement of all interpreters of the supply network in the new product development process and the introduction of established technologies that are used in other industries in the furniture industry are crucial for the innovation process. Related to that, the role of the suppliers and the business clusters in order to develop new products in a unique and exclusive geographical context and to outsource non-strategic production processes.

The most relevant differences between the two businesses are the following ones.

1. The strategic approach towards design innovation: whereas Italian furniture companies carry out a radical innovation strategy, in Sweden companies apply an incremental innovation strategy. Secondly, the Italian furniture approach can be defined as a knowledge research process, while the Swedish one is defined a creativity research process.

2. The approach towards the upstream phase of the innovation process. Italian furniture companies base their own innovation process on Design and Technological researches, that come before the concept generation process and they aim at generating new meanings and languages. Indeed the entire theory regarding the *radical* design driven innovation presented in chapter 2 and 3 is related to the strategic importance given to those first steps of the meta-project phase. Swedish furniture companies do not have a well structured meta-project research and their own innovation process basically starts with the concept generation phase. This implies that the company shares only technical solutions and concept ideas among the actors of the Design Discourse, and not socio-cultural models, meanings, and product languages.

3. The downstream phases of the innovation process, in particular the product's launch into the market: Italian companies usually introduce products into the market after a certain period of time (roughly one year), the Swedish companies instead introduce them right after the exposition at the Design Fairs.

4. The internal organization of the innovation process. Italian furniture companies rely on Workshops and Design Driven Laboratories (DDLs) and on the active participation of the designer in the first processes for the upstream phase of the innovation process. Those laboratories are independent identities from the furniture company, with their own internal organization and without a strict connection with the main manufacturer. Swedish furniture companies, instead, elaborate every phase of the innovation process inside the company. They rely on the Design Council for the elaboration of the design concept. This Council is composed by members internal to the company (exponents of the several departments) and they are usually coordinated by the company leader. The

designer has an active role only later on during the concept generation phase and, above all, during the new product development phase.

5. The approach towards the external organization of the innovation process. Whereas in Italy company and designer often build up a close and exclusive relationship, in Sweden their relationship is not exclusive. According to the previous point, whereas in Italy the collaboration might be defined as a co-branding collaboration, in Sweden the main brand of the designer overcomes the one of the company and the product is mostly associated to the designer instead of the producing company.

The two important commonalities between Italy and Sweden will be now analyzed in the following sections.

7.1 EXTERNAL DESIGNERS AS STRATEGIC ACTORS OF THE INNOVATION PROCESS

Both Italian and Swedish furniture companies rely on freelance designers. Designers usually have their own autonomous company with their own internal organization and internal employees and they collaborate with the furniture company as external partners. This aspect is definitely a peculiarity of Italian and Swedish furniture companies. In any other industry usually designers are internal to the company and are incorporated in the same organizational structure. Consequently, being part of the corporation, they tend to adapt their own values with the ones of the company and are likely to follow the precise instruction of the product manager or of the product development responsible.

Italian and Swedish manufacturers, instead, involve external and even foreign designers in their innovation process, and they are strategic characters for being brokers of knowledge and technologies at a global dimension as well as at a local level. For instance, the Danish designer Peter Hiort-Lorenzen, who has a strict collaboration with the Swedish company Lammhults, has his own studio in Copenhagen, he collaborates with different furniture companies on single projects and the relationship with the company is a project-based relationship. These innovative companies in the furniture industry usually involve a wide range of designers in the innovation process in order to assure highly innovative concepts in their products and keep the grade of internalization extremely high. As already stated, designers coming from different nations and also having different cultural

backgrounds are able to access different local socio-cultural contexts and this allows companies to mix different perspectives, values and approaches in their own catalogues and guarantee a high level of innovativeness. This strategy, indeed, guarantees better performances for those companies that compete internationally and need to satisfy desires and expectations of different cultures. The task designers have to fulfill is related the fact that there has to be an interpretation of different customs diffused in different geographical and social contexts and those languages are also able to move across countries and social classes. Only disposing of a range of international designers with diverse backgrounds can help it in interpreting these cultural movements and needs.

Even if the internal organization of the innovation process is significantly different, both in Italy and Sweden the external designer usually build up her interface with the furniture company through the product developer, with whom they nurture an exclusive relationship. This aspect will be further emphasized in the following paragraphs.

7.2 THE IMPORTANCE OF THE BUSINESS CLUSTERS AND OF SUPPLIERS

Both Swedish and Italian furniture companies usually rely on their suppliers and manufacturers, with whom they have to collaborate. Actually we can talk about proper cluster regions, where knowledge and handcraft traditions are shared among companies that produce furniture products, where individual firms can benefit from the capabilities and knowledge of the firms located in their neighborhood. Furthermore external innovation carried out in individual firms have high and visible effects not only on their own operations but also on the local firms located in the same cluster region. The so called “glocal strategies” theory (Johannisson et al., 2002) explains that there is a need of a massive use of information technology for communication between distant and different interpreters of the discourse, but at the same time this coexists with direct personal contacts, since innovation concepts usually come out from frequent and face-to-face relationships with customers. In so doing becoming involved locally in the social and economical context is helpful for the firm.

Referring to the Swedish furniture business, all the four firms analyzed in the case studies are located in geographical areas where a strong tradition in furniture production is present. In Småland, where the anonymous company Lammhults has its Headquarter, as well as in

Tybro for Bla Station, we can find a proper cluster region, where knowledge and handcraft tradition is shared among the companies that produce furniture products. According to Johannisson and Ramirez-Pasillas (2002), firms located in the same cluster collectively generate an 'absorptive capacity' due to dense networking (Cohen and Levinthal, 1990), which means that single firms can benefit from the capabilities and knowledge of the firms located in their same geographical area. Networking also means that 'strategic awareness' (Gibb and Scott, 1985) associated with individual firm behavior, in favorable settings such as Småland or Tybro, creates a 'territorial awareness' (Johannisson et al, 2002). This confirms that external changes in individual firms have high and visible effects not only on their own operations but also on the local firms located in the same cluster region.

Moreover, the dense network among the Lammhult firms have also obtained important collective efforts, managed by a 'community' entrepreneur. Collective support, rather than individual firm subsidies, also favor emergent local alliances between firms. Indeed, in Småland the local trade association together with local and regional authorities, has organized a knowledge creation program that involves a large proportion of the local labor force (Johannisson et al, 2002).

Depending on the type of business partner the collaboration can have very different characteristics. The collaboration with suppliers inevitably focuses on the production process, and then on cost reduction and productivity. It may be possible to implement a radical innovation process, developing a new process, but in this case a strong integration between customer and supplier at a strategic level is required (Belderbos et al., 2004). Companies that cooperate in the innovation process with their clients focus instead on the product and their performance. Suppliers that actually help the furniture company to introduce innovation either on products or on processes should be able to introduce that innovations by knowing the customers' needs and proponing an actual advantage (Von Hippel, 1987). Both Italian and Swedish furniture companies rely on regular suppliers and collaborators who know customers' needs, the way they manifest them and identify themselves and their principles with the ones of the company that they work for. This fact is definitely crucial for the introduction of radical innovations both on products and processes. In particular in Italy as well as in Sweden there is a tendency of keeping into the furniture industry technical solutions and technological processes usually used in other industries, and in order to experiment those new technologies the relationship with other

firms and industries definitely has to be tight. Additionally both Italian and Swedish company rely on external suppliers for outsourcing their production processes. Over the last twenty years in Sweden as well as in Italy there has been a tendency to outsource most part of the production processes in order to have lower production costs. Recently in the furniture business this tendency has been basically inverted. High-quality furniture companies have experienced that the only way to keep high quality and differentiate themselves from competitors is to carry out strategic production processes inside the company, in order to link the product development to the production processes and reach an optimization both for the product and the productive perspectives. In particular in Italy as well as in Sweden the production process actually performed in-house are represented by the processes where strategic and peculiar technologies are used and, above all, the final assembly. Hence, we can say that the degree of externalization of production process is almost the same in both geographical realities. This theme will be further explained over the following sections.

According to Freeman (1991) and D'Atri (2004), the first dimension to be considered and fixed in the relationship between company and suppliers is the extent of collaboration, such as the number of active members involved in the collaboration. Depending on that the number of skills brought into play increase. In both realities, Italy and Sweden, the relationship is basically made up by informal collaboration regarding the meta-project phase, whereas the relationships with suppliers are formally established. Furthermore, In Sweden as well as in Italy companies prefer to establish long-term oriented cooperation with suppliers and manufacturers and also those relationships include the involvement of top management in order to ensure alignment with the strategic objectives (Soh and Roberts, 2003).

7.3 THE DIFFERENT STRATEGIC APPROACH TOWARDS THE INNOVATION PROCESS

The first important difference between Italian and Swedish furniture industry concerns the strategic approach towards the design innovation: whereas for Italian furniture industry we define it radical innovation strategy, for Sweden we can talk about incremental innovation strategy. Innovating radically in design implies that there is much more focus on messages and languages associated to products than on their functionality and

technological performances. For this reason designers, furniture companies and suppliers that participate to the design discourse have to analyze the socio-cultural context that surrounds customers and, on the other hand, they should be able to interpret it when they elaborate the project concretely. So working on the semantic dimension of products is meant to be the best way to propose new meanings in relation to the dimension where products are introduced. Whereas the Italian approach can be defined as a design-push approach, the Swedish one as a market pull approach, since the innovation is mostly guided by the needs of customers. This difference, explained in Figure 57, reflects two radically different interpretations of innovation. In Italy there is a proactive approach towards the socio-cultural models surrounding consumers, the purpose is to put much effort on the semantic research rather than the technology research and push it to the market. Consumers' needs are basically important just as an input in the socio-cultural research carried out upstream, but they do not represent the essential inspiration and guide for elaborating innovation. This latter strategic setting, instead, is carried out in Sweden and accordingly it can be named reactive or user-centered approach. Market's needs are basically the only source inspiring technological and socio-cultural researches.

The already described CentroKappa by Kartell, studied by Verganti and Dell'Era (2010), is a clear example of a research center in the Italian furniture industry where socio-cultural and technological research aiming at providing technological solution to the ideas elaborated by the design driven laboratory ensures radical innovativeness of products. The presence of those laboratories emphasizes the meaning and the role of technology in a design-driven company, such as it is just the enabler of new product meanings and languages. Researches on new styles and languages are integrated with researches on new materials and engineering processes.

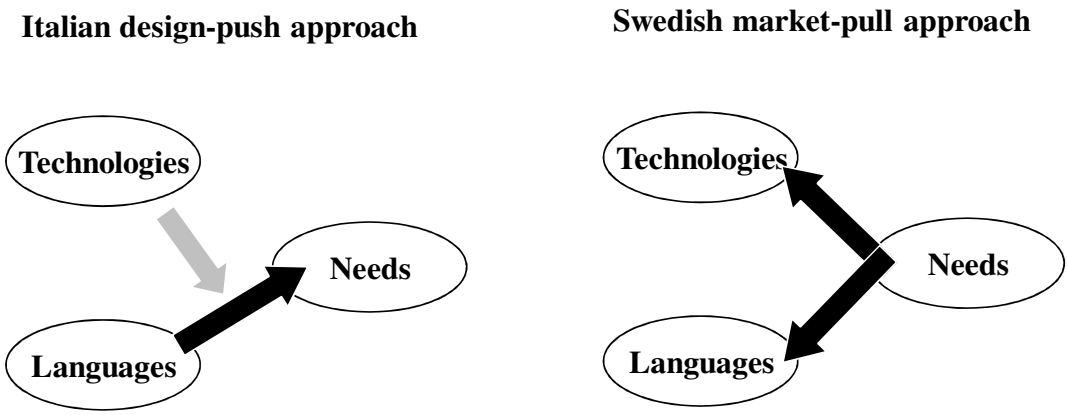

Figure 57 The different strategic approach in Italy and Sweden

According to what already stated and continuing the naming process, Italian strategic approach might be defined as a knowledge research process, while the Swedish one is defined creativity research process. Indeed, whereas Italian companies put much effort on studies about languages and meanings and on the socio-cultural context where products are introduced and sold, Swedish companies focus their own attention on technical creativity in order to satisfy consumer's needs. Those antithetic approaches towards the strategy of the innovation process are reflected upon the innovation process, as described in detail in the following two paragraphs.

7.4 THE DIFFERENT APPROACH TOWARDS THE UPSTREAM PHASE OF THE INNOVATION PROCESS

The crucial phases carried out during the innovation process in the Italian furniture industry are the Design research and the Technological research. During those phases knowledge about the evolution of socio-cultural models is investigated and this is the major asset leveraged in radical innovation of meanings. This process of generating and assimilating this knowledge (through interaction with the design discourse) starts before concept generation and product development and it is peculiar of the Italian furniture industry that applies radical design driven innovation. Actually this process is not based on peculiar creativity tools or methods. In these phases the contribute of the designer (in terms of invested time and resources) and of the other internal actors of the innovation process is different. In the design research phase the contribute of the designer is

normally much more relevant then the contribute of the other members (internal and external) of the innovation process. The contribute of the actors internal to the company and of the interpreters of the design discourse is fundamental during the other complementary phase, such as the technological research phase. Comparing the relative importance of both research phases, the Design research undoubtedly has more relevance than the Technological, according to what stated in the precedent paragraph. As we can see in figure 58, after the first two phases comes the concept generation phase, that implies a deep analysis of a targeted user, but it is actually based on the previous socio-cultural research carried out in the precedent phases. Finally the product development phase technically develops the idea generated in the previous phase. During this step the contributes of both designer and product developer are crucial. The figure below clearly explains how the approach towards the two different phases is significantly different in Italy and Sweden. Whereas in Italy (Figure 58-A) the focus and the amount of resources invested are much more relevant during the two Research phases, in Sweden (Figure 58-B) they are much more important during the Concept generation phase. Furthermore in Sweden, in opposition to Italy, the Technological research phase holds a more relative importance than the Design research.

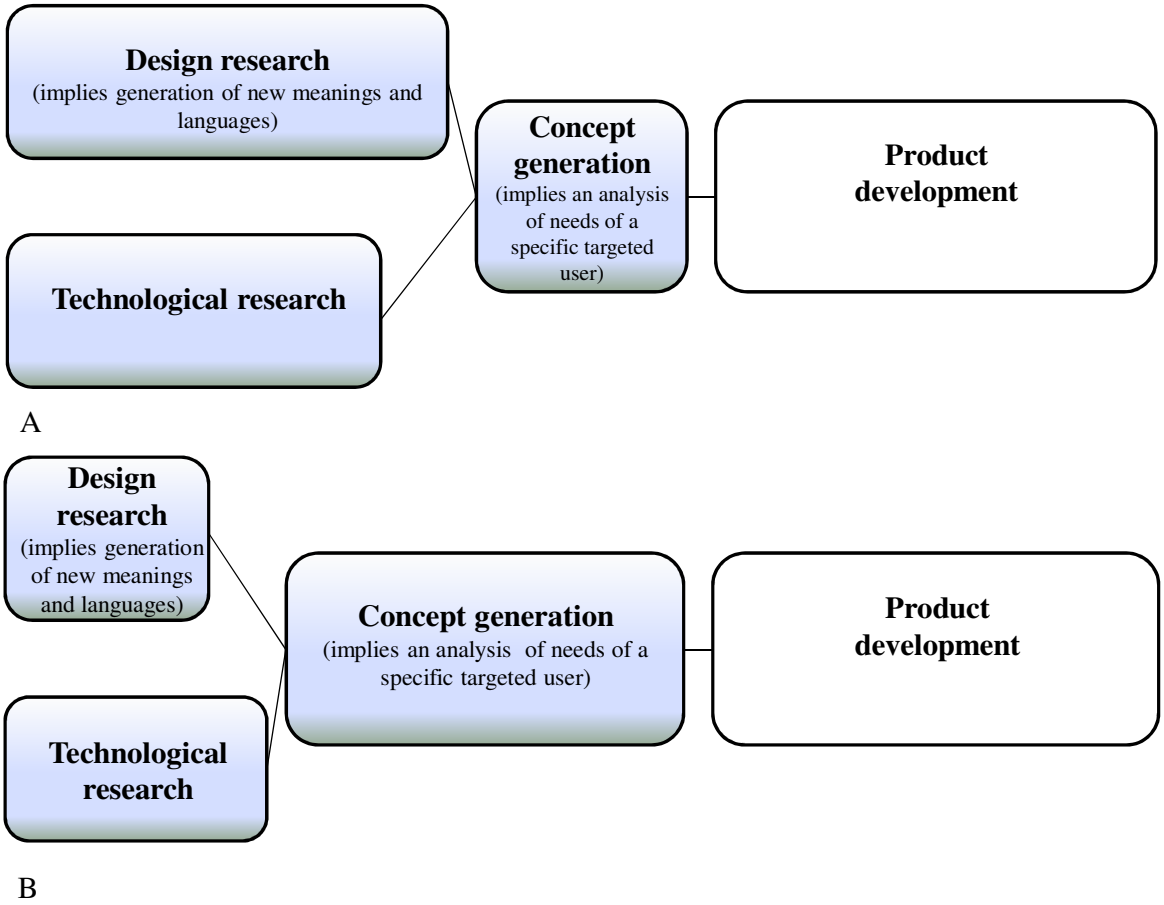

Figure 58 The design innovation process in Italian (A) and Swedish (B) furniture companies

The implementation of radical design driven innovation applied in Italy keeps its focus early in the innovation process, where firms analyze the dynamics of socio-cultural models. Institutions like Centro Kappa linked to Kartell and Centro Studi Alessi are clear examples of how the seeking for new meanings and languages are crucial for the design innovation process in Italy and how much important is being linked to the external environment, which is conceived as a widely open research laboratory. So, summarizing, Italian design-driven innovation is a networked research process and it crosses over the boundaries of the firm, it is based on sharing of knowledge and it also includes an action of influencing and modifying the socio-cultural regime where its products are placed. In this way Figure 58-A has to be interpreted: Italian companies invest much of their resources in Design research, and Technical research represent a secondary tool in order to give a practical shape to the semantic findings. Consequently, the Concept generation

looks at user needs but it is basically based on the previous phase and its relative importance compared to the precedent phases is minor.

The key capability in user-centered design (Sweden) is focusing on the Concept generation phase, and in particular to carry out good market investigations, get as close as possible to users, figure out their needs and be technologically creative in finding solutions. This justifies the more relative importance given to the Concept generation phase in Figure 58-B and, additionally, the key function embodied by the Technological research compared to the Design research. In Sweden furniture companies focus their own design innovation process on the concept generation phase, which implies an analysis of needs of a specific targeted user. The aim is not generating new proposals in order to introduce radical innovation of meanings and it is not either trying to modify the socio-cultural context where products are sold. Moreover designers, whose task is also to build up efficient relationships with material suppliers, make their own investigation about materials in collaboration with material companies within the geographical area where the research takes place and, for instance for Lammhults, with the Swedish Konstfack, which represents a service for new designers who are doing researches about new materials.

7.5 THE DIFFERENT APPROACH TOWARDS THE MARKET LAUNCH OF THE PRODUCT

Most part of Italian furniture companies (figure 59-A) present their own new products in the fairs as prototypes, and afterwards they put much effort on the optimization of the product development process and in the final hand-crafted realization of the products exposed at the fairs. Indeed, even Kartell and Alessi aligned themselves to most of the other companies, that propose a prototype of new products that can only be delivered to the customers six to eight months after this first version. So many Italian furniture companies develop only a prototype of the final product and they exhibit it at the fair. Then the period of time that passes from the exhibition at the fair and the actual introduction into the market usually consists of some months, at most even one year. During that remaining time between the two key events a repetitive process of development and optimization of the prototype occurs. The reason of this approach regards the structure of the innovation process and the strategy above it. Italian companies

apply a design-push innovation process, the investigation of market's needs is not considered that important, so the Design fair represents the first opportunity for the company to get feedback by visitors and by the market in order to consequently reach an optimization of the product. Additionally the Managing Director, who is usually the direct responsible of the product development and of its launching into the market, is concerned in being involved into the continuous research of the optimization of its meaning even after the exposition at the fair.

In Sweden (figure 59-B) it might take even two years to develop a new product, and that means that the new product development process is actually a longer process than the Italian one. But after this long process the product is exposed in the fairs and it is soon placed in the market. Indeed, prototypes exposed in the fairs are almost ready for the final launch to the market. Actually only some modifications will be done to the project, before it can be considered definitely finished.

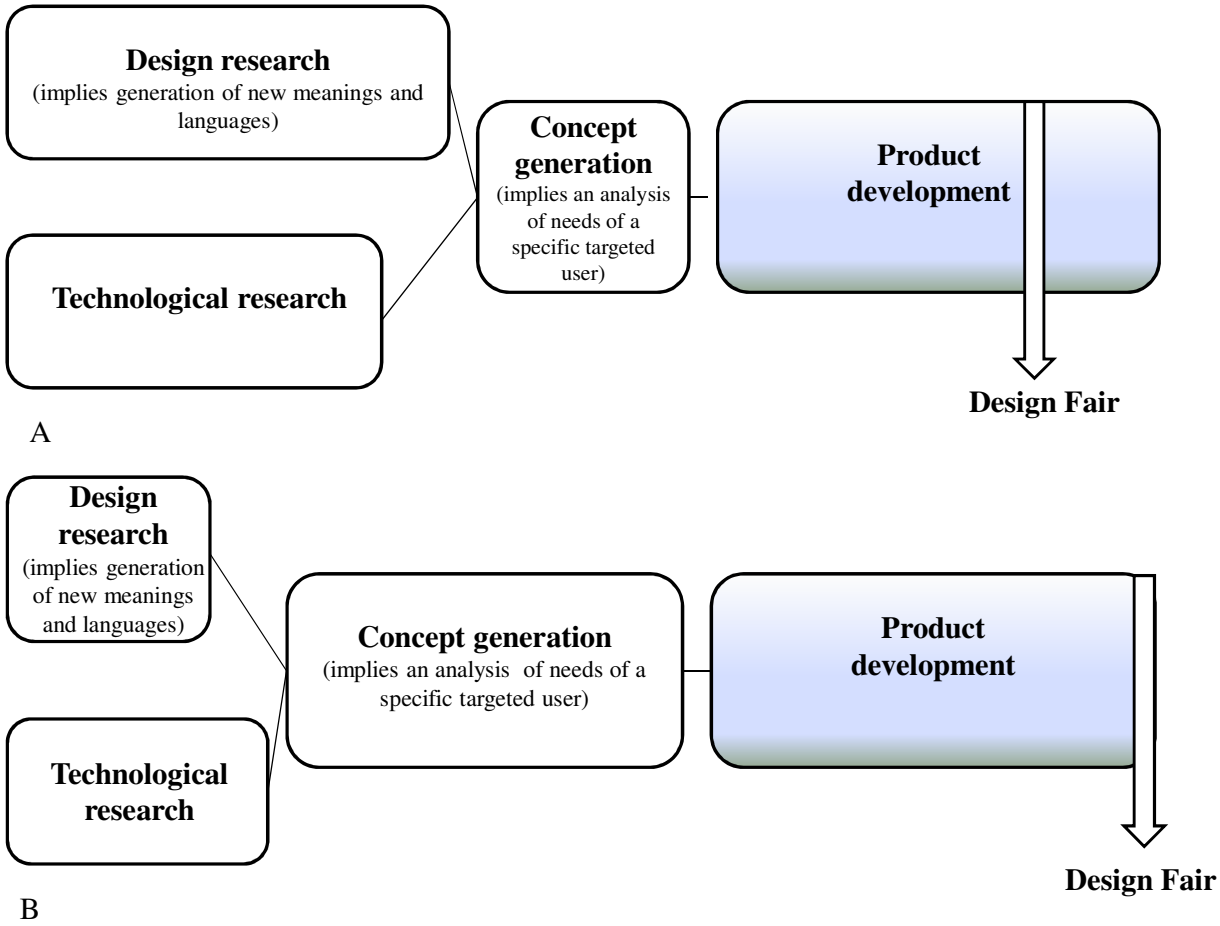

Figure 59 The downstream phase of the design innovation process in Italian (A) and Swedish (B) furniture companies

This substantial difference between the two different realities might also be explained by other aspects. The organization of production processes in Sweden and Italy is significantly different. In Swedish companies productive activities are perfectly scheduled, which makes the delivery of the product to the fair be punctual. On the other hand, in Italy the operative inefficiencies regarding the production processes are often an obstacle for the punctuality of the presentation of the products in the fairs. Swedish furniture companies actually emphasize the importance of the time scheduling of the innovation process, its activities are precisely scheduled and planned and then, according to this schedule, carefully executed. As an emblematic example we can name Offecct, where all the activities of the year are perfectly scheduled in advance and to each week of the year prefigured activities are attributed.

In Italy the nature of the process is significantly different, because there is a recurring and continuous dialogue within the company and between the external actors of the design discourse and the company and this dialogue goes on during the last phases of the innovation process and even after the presentation at the fairs. In Sweden, instead, there is no need to get so many feedbacks from the market at the fair related to new products, since there has been a much more structured market analyses in the upstream phases of the innovation process. In addition to that, the mutual dialogue between actors involved in the innovation process is only narrowed down to designer and product developer during the final phases of the innovation process and this implies a much easier conclusion and finalization of the definitive version of the project.

7.6 THE DIFFERENT APPROACH TOWARDS THE INTERNAL ORGANIZATION OF THE INNOVATION PROCESS

Referring to the organization of the design innovation process, Italian and Swedish furniture companies peculiarly cooperate with external freelance designers, with whom they tighten up an exclusive relationship or, alternatively, they accomplish a more occasional relationship.

Italian furniture companies analyzed base the elaboration of the meta-project (such as Design and Technological research) and the definition of the concept generation on studies and researches carried out in proper structured laboratories (Figure 60) aiming at

experiment new methodologies and working with young designers who are supposed to do new researches in the field of communication, semantics and marketing (Dell'Era and Verganti, 2009). The aim of the workshop carried out in those laboratories is to elaborate new ideas, to interpret the inputs coming from the discourse and also search for talented design consultants who have to apply these new ideas into concrete projects. As the examples Centrokappa by Kartell and Centro Studi Alessi presented in chapter 5 stated, design driven laboratories are organisms external to the company. Even if both the quoted examples were historically born as detached parts of their own parent companies, then they progressively gained more independence from them, becoming autonomous entities with their autonomous functional organization. Even the employees were firstly connected to the connected parent organization, but then they actually were not linked to any organizational function of the furniture company. So, the most important peculiarity of the internal organization of the innovation process in Italy is that both the research phases and the concept generation phases are carried out in a organization that is independent from the main firm. Indeed, CentroKappa Kartell served other companies, even Kartell's competitors, collaborating for projects potentially competing with the ones of Kartell.

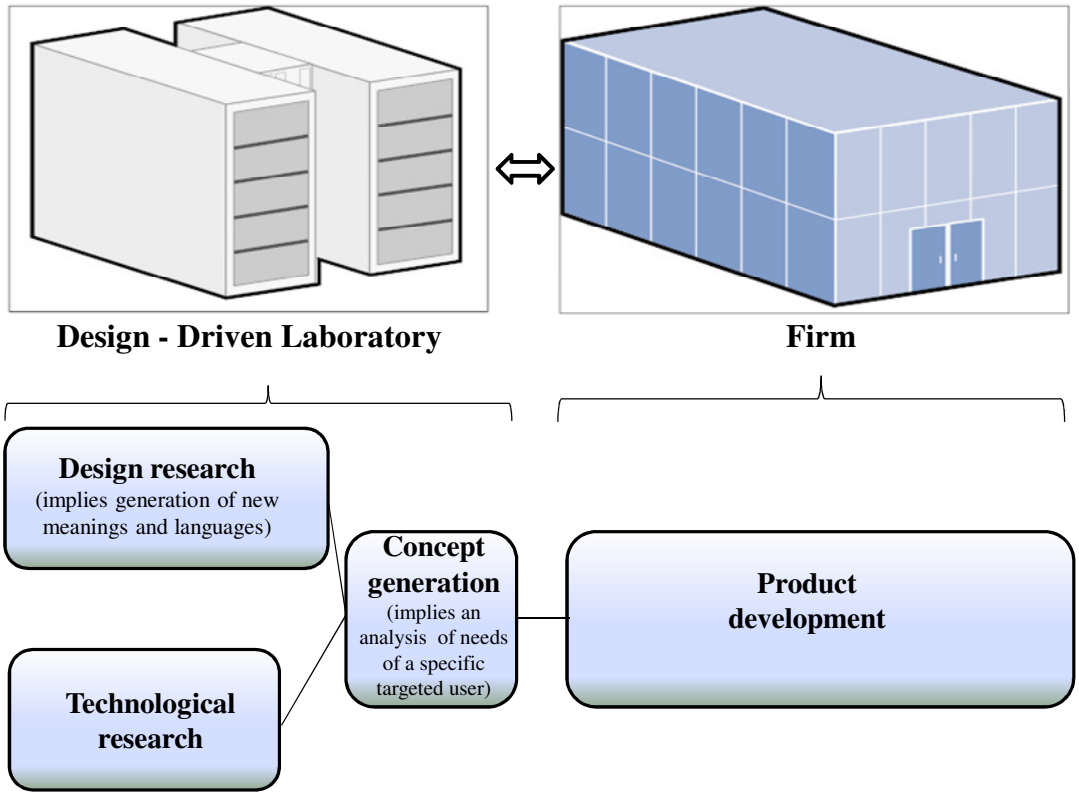

Figure 60 Distribution of the innovation process phases between DDL and furniture company in Italy

Anyhow, the researches carried out in Design-Driven Laboratories represent the theoretical foundation of the meta-projects, which actually defines the object that have to be designed, the needs to be fulfilled, and it gives the designers the criteria that have to be followed. The workshop inside the Laboratory starts with the elaboration of a meta-project theme and ends up with the elaboration of new innovative projects. The project leader, who usually is in charge of the head control of the laboratory, decides the theme of the workshop as well as the purpose of the meetings, the timeline and an oversees the entire process occurring inside the laboratory. Secondly the actors of the workshop are represented by technical manager, product manager and sales manager and then other guests, such as photographers, stylists, cartoon artists, illustrators and marketing experts, while designers involved are usually coming from different realities outside the boundaries of the firm. This is another peculiarity of the internal organization of the innovation process in Italy: all the members of the design laboratory, even if characterized

by different backgrounds and coming from different realities, all of them have the same purpose, such as nurturing the Design research process. It might be said their competences are mono-disciplinary since they all aim at being socio-cultural researchers more than technological researchers or gatekeepers for the firm. This fact will be further specified in the sections below.

A different approach towards the internal organization of the innovation process is held by Swedish furniture companies (Figure 61). Basically the entire innovation process is carried out inside the company, there is no independent institution upstream which performs the Design and Technological research and carries out the concept generation phase. Even though the designer is external to the company, the whole process is controlled and super-visioned by members inside the company, who constitute a council called Design Council, which involves one member of each department of the organization and it has an active and primary role during the innovation process, especially the concept generation phase. In contrast to Italy, in Sweden the entire innovation process is accomplished within the company, involving all the members of the Design Council.

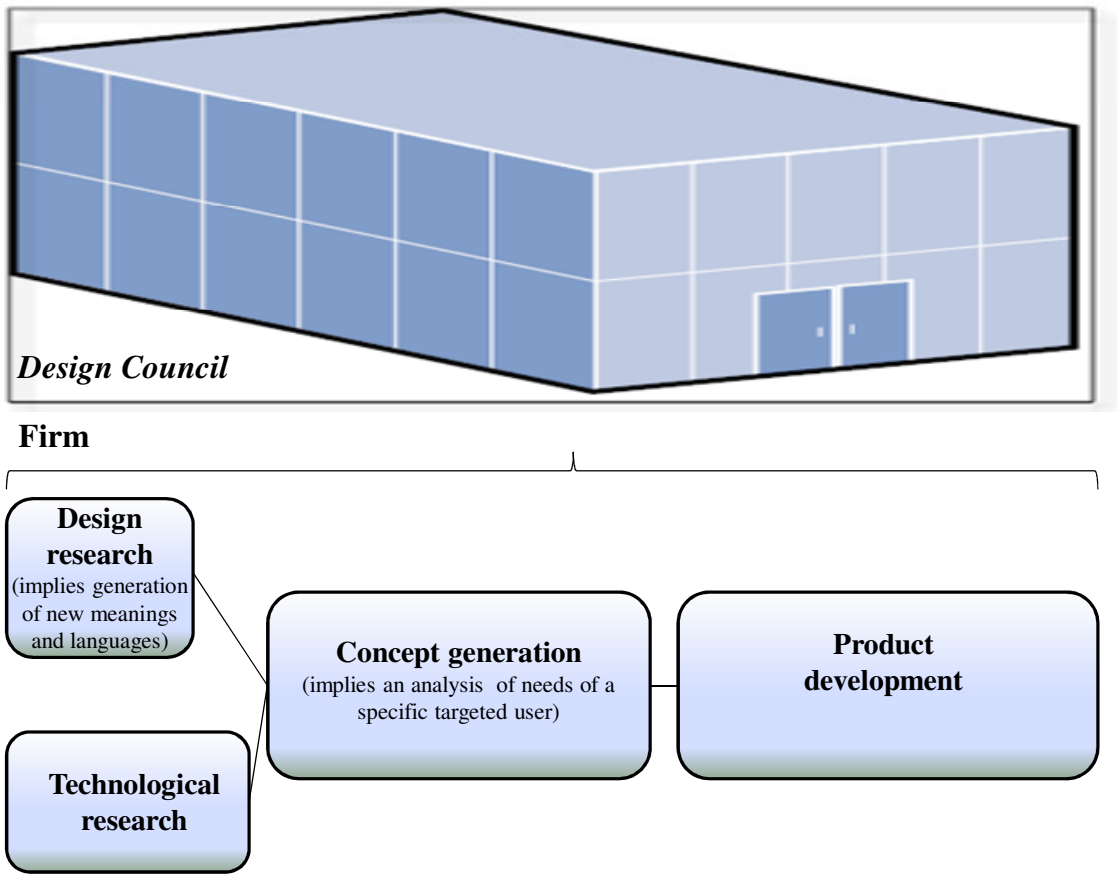

Figure 61 Distribution of the innovation process phases in Sweden

Particularly talking about this latter case of Sweden, during the concept generation phase, the Design Council discusses and figures out the theme of the research and decides which project should be carried out and the designer responsible for the project. The concept generation held by the Design Council involves several managers, each one representing one department of the company, and in this first part the designer has a marginal role. Only a few times the external designer makes her own proposal about a suitable project.

Consequently, in the meta-project phase the Design Council is the main organism where strategic and productive ideas are taken. In opposition to Italy where this task is carried out inside DDLs and the Managing Director has the overall control and has to take the most important decisions, in Sweden the Design Council has the purpose to discuss all the ideas coming from the market in terms of customers' needs and trends and at the same time it has to evaluate the concrete proposals coming from the external designers.

Summarizing what learnt through the study cases already presented, the members of the Design Council (Figure 62) are mainly the following ones:

- Managing Director
- Sales manager
- Purchases responsible
- Production manager
- Manager of technology
- Product developer

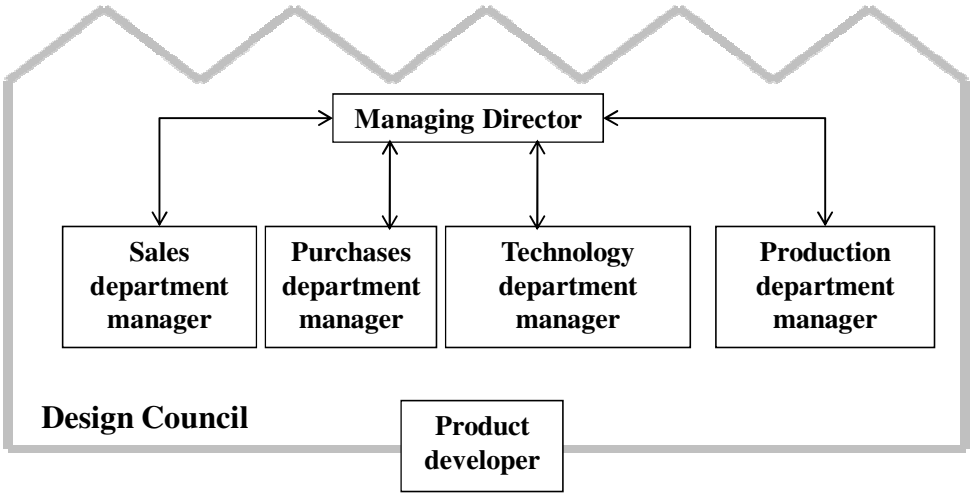

Figure 62 The Design Council configuration in the meta-project phase in Swedish furniture companies

The sales manager is one of the key actors in the Product Council and his task is storing all input coming from customers doing studies about the market's perspective and at the same time he also has to look aver the selections of the products being manufactured by the competitors basing his considerations on the market needs. Sales managers try to analyse what kind of products competitors have and the reason why one product is sold more than others. So when the Design Council ends up with an idea it contacts a designer and ask him to interpret the company's need and to elaborate a prototype.

The members of Council regularly meet up and look through several suggestions coming from designers and they compare them to the studies about customers' needs carried out by the marketing department. Finally a decision is taken and it has to be

approved by everyone who is a part of the Council, even if the managing Director has to take the final decision about launching a product into production. Once decided the product to be produced, the original idea goes from the Council to the production where a prototype is made. The prototype is cyclically sent to the Design Council for comments and adjustments according to the market needs and then approved by the Council. A key role in this phase is played by the product developer, who acts as a gatekeeper between company and external interpreters, receives the prototype from the production, sends it further to the council and he also communicates the prototype with the designer. A continuous communication obviously occurs between the Design Council and the external designer (figure 63).

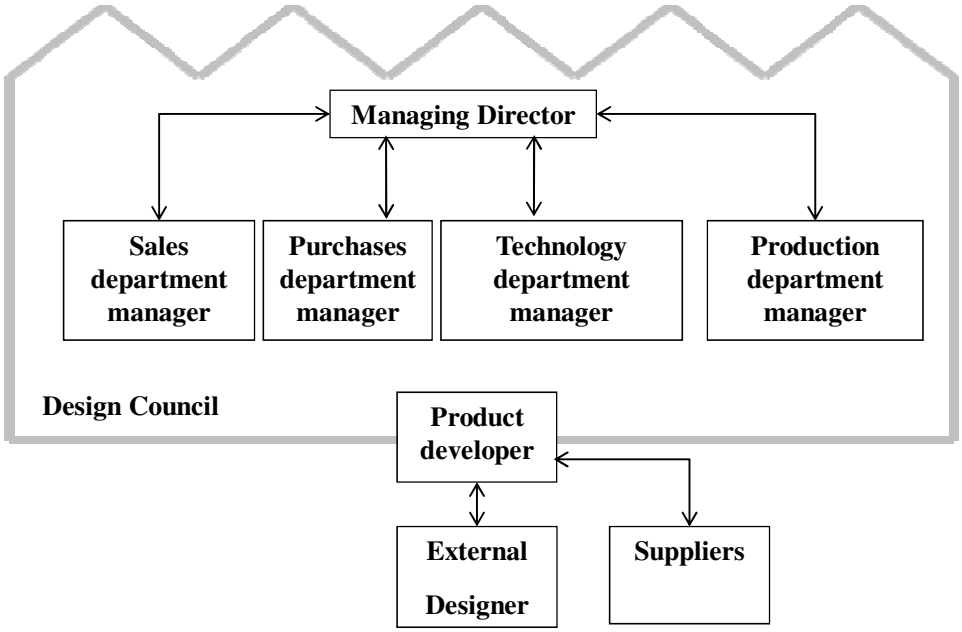

Figure 63 The organization of the product development process in the Swedish furniture industry

From these observation we can state that the internal organization of the innovation process in Italy is based on the Design driven laboratories that groups together mono-disciplinary competences. The all members of the laboratory are experts of product technologies and they take care of the interaction between the company and the external actors collaborating in the innovation process. In Sweden, instead, the competences of the members of the Design Council are definitely multidisciplinary, since it includes members

of the company representatives of different backgrounds, thus having different backgrounds and different sensibility towards the project parameters.

Moreover, most part of the Italian furniture companies present a Central Manager Configuration, where the last two phases of the innovation process (Concept generation and product development) are centered on the competencies of a central manager, who actually oversees on the main activities of the process. The two main activities carried out by the manager are the management of the designer portfolio and, above all, they are continuously involved in a constant relationship with the design discourse, in order to keep the company up to date about new meanings and product languages. The task of the manager is even taking the final decision about the choice of the product to be launched into production, and additionally he concretely participates to the product development process, sharing technical and economical information with the Design discourse. In most of the Italian furniture companies this role is covered by the company leader. In Sweden, instead, the crucial role of taking the final decision about the choice of the product to be launched into production, concretely participate to the product development process is carried out by the Design Council. This internal organization also keeps in touch with the product developer and shares technical and economical information with the external actors of the design discourse, among them the external designer.

Referring to Holanhan and Markham (1996), the description of the two realities (Italy and Sweden) leads to some reflections about the internal organization of the Design Laboratory on one hand and of the Design Council on the other. The size and composition of the research laboratory has to be defined *a priori* in both realities, since they represent the most relevant dimensions referred to the internal organization of a research centre. Indeed, among Swedish companies all the actors involved in the Design Council are defined before the start-up of the project and every single person is given definite and precise tasks. One of the recurrent problems related to the laboratory dimension and that is accurately faced during the size and composition setting is the presence of slack resources that would definitely increase costs for the company, would not contribute to follow the mission of the research laboratory and would not imply any economical gain (Keegan and Turner, 2000).

Though, members of the project team have to face internal communication problems within the team (Clark and Wheelwright, 1993). At the same time there is the need of a

project leader and a sponsor, who actually link the project team to the company. In Sweden as well as in Italy this need is often present during the meta-project phase, more than during the product development phase, when the collaboration primarily involves designer, product developer and the manufacturers.

7.7 THE DIFFERENT APPROACH TOWARDS THE EXTERNAL ORGANIZATION OF THE INNOVATION PROCESS

According to the previous analysis, the Italian furniture industry base their own design innovation process on a proactive approach towards Design research in order to elaborate new meanings and languages. A crucial aspect of this kind of innovation is covered by the dialogue between the design company and the external network of interpreters. Interacting with several actors therefore increases the capability to influence socio-cultural models and increases the probability of developing radical innovations that in the future would represent a high success for the market.

This is the identifying aspect of Italian furniture industry that represents a point of distinction from the Swedish furniture business. Whereas in Italy the interaction with the design discourse involves mostly the primitive phases of the innovation process (Design and Technology researches) and leads to the elaboration of new meanings and languages, in Sweden the collaboration with the external actors only involves the following phases (the concept generation and the product development process) and the contribute of the external interpreters has definitely to be defined more operative than socio-cultural. The supplier is not seen as a potential inspirer of new meanings and languages, but instead as a close partner with whom the design company might collaborate in order to elaborate the product concept and then to develop the already fixed project. Manufacturers and all the members of the design discourse, as well as all the members who might be defined as complementary assets for the company (Teece, 1986), actually they give their contribute only in the final part of the innovation process, and consequently their contribution the radical innovation of meanings and language is definitely less incisive.

Whereas Italian companies have a proactive approach towards the cultural and also economical context where they operate, Swedish companies have a reactive approach instead. Anyway, in both realities the cooperation between suppliers and actors of the

development process is extremely important for the product development process and for the consequent production processes as well. Indeed, without the contribution of the suppliers in financing technical tools and carrying the risks of trying new and innovative ways of producing furniture, innovation would not exist. To be innovative, Italian companies as well as Swedish ones usually try to investigate and study established technologies that are used in other industries and to bring them into the furniture industry. For this reason furniture companies always involve the suppliers into the innovation process and they actually experiment new industry processes on the particular product they are working on.

"I like visiting factories, shows and fairs, draw on what surrounds me. As soon as I come up with an idea, I try to transpose it into a project. It has to be feasible though, design is sustainability rather than feelings." Anya Sebton, freelance designer.

Suppliers are involved in the product development process as well. They express their own technical opinion about the feasibility of the analyzed product, both from the economical and operational point of view. Usually manufacturers want to make processes much easier and simpler, in order to simplify the operational processes and reduce the connected costs. This is the reason why they are outside the Design Council and their contribution to the definition of the design itself is marginal.

"We try to avoid the opportunistic behavior of the manufacturer, even if we all know that the contribute to the development process is crucial." Johan Lindau, Product manager Bla Station.

When the production process requires already known technologies and established productive processes, the firm uses its comprehensive existing net of suppliers in order to produce the designed product in an efficient way. Very often the furniture company has its own well-known suppliers located within the same geographical area, with whom they are tightly related.

One of the main characteristics of Italian and Swedish companies is that some activities are performed in house (such as design, product development, brand building) and some others are performed externally.

"There is no longer a deep relationship between design elaboration on one hand and machinery and materials producers on the other. Moreover technology is no longer linked

to the designer. Partners should know how to produce what we elaborate, sometimes it might be a problem in case of outsourcing…" Peter Hiort-Lorenzen, freelance designer

This fact is clearly connected with the idea of "extended enterprise", accordingly active part of the company have to be considered business partners, such as suppliers and customers. Even if sometimes some production phases are outsourced far from the company headquarter (for instance China has been a strategic destination even for the furniture industry), the distance between companies, suppliers and retailers is often short, according to the fact that interactive collaboration is facilitated and less costly if the distance between the actors is short (Maskell, 1996).

The dislocation of the production phase distantly from the meta-project phase and the product development phase leads to the fact that manufacturers of furniture products might be separated from the companies that actually project them. Companies specialized in manufacturing collect orders coming from different furniture companies and produce goods projected by different companies. A network among the furniture companies and the manufacturers is established.

The fact that most of the technology-intensive manufacturing activities are performed outside the company (for Italian as well as Swedish companies) might represent a great advantage for the company. The implications of this fact are absolutely relevant (Gustavsson and Laestadius, 2005):

- The company becomes less path dependent, which means that it does not suffer from the lock-in in some manufacturing facilities.

- The company has a strict contact with external manufacturers and with other industries, among which the car industry is the most important one. This enables the furniture company to experiment new technologies and new materials and to have a sensibility towards innovations that take place in the other fields of study.

- The time consuming activities, such as rump-ups or readjustments are completely avoided, since no machinery activities are done. This enables the company to move rapidly from the product project and development to the product realization and delivery.

- This dynamic network makes the innovation process much more adaptable to the evolving market's needs.

According to Zurlo et al., 2002, in the last few years a process of internalization of some critical production phases among Italian companies has been occurring. Generally those phases include some special techniques that might be imitated by competitors. Comparing Italy and Sweden we can identify two different types of organizations in relation to the contribute of the designer and the company in the supplier network (Figure 64). In Italy the network of external suppliers is coordinated by the company, and as long as production phases are internalized the dimension of the company becomes bigger and we can talk about designer consultancy. This is emphasized in the first superior draws of Figure 64: the more the degree of internalization increases, the more we shift from left to right. In Sweden, instead, the network of suppliers is coordinated by the designer, who has an active role in this sense both in the meta-project phase and in the product development. Even in this case, as long as the internalization of some production phases grows, from the network coordinated by the designer we turn to the externalization of design. The two inferior draws of Figure 64 are related to the latter case of Sweden; even for this case the more the degree of internalization of production processes increases, the more we arise from the case on the left to the one on the right.

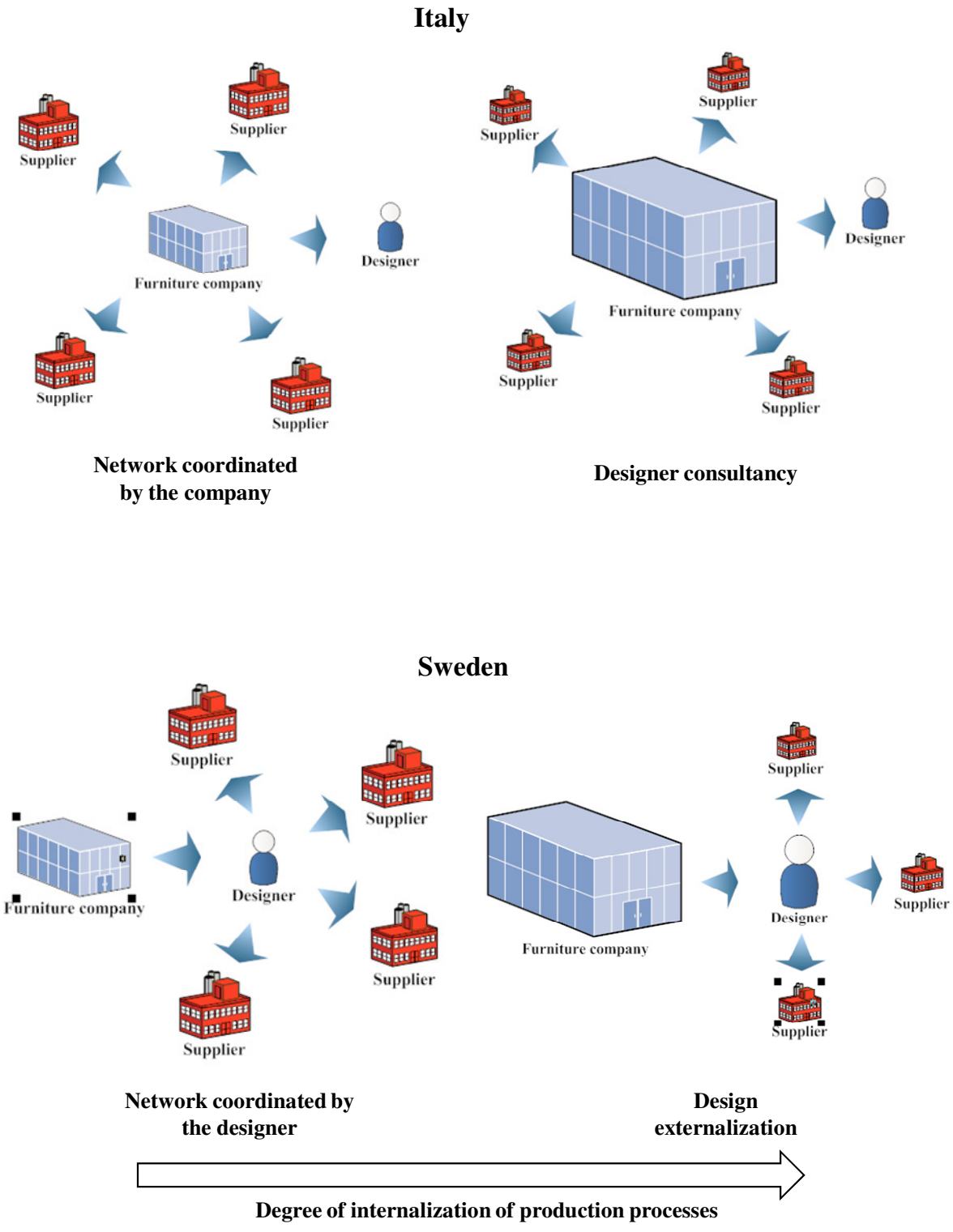

Figure 64 Forms of organization in Italy and Sweden (adapted from Zurlo et al., 2002)

In Italy the furniture company establishes its own business relationships with suppliers and manufactures and at the same time with the external designer, with whom he builds up

an exclusive and long-lasting collaboration (Figure 65). Her active participation in the workshops and the collaboration with external suppliers and the informal but really intensive communication among internal members in the company, are crucial for the introduction of technological and semantic innovation in the projects. The designer is seen as a socio-cultural researcher and this is the reason why he needs the laboratory and its gatekeepers to look for and nurture the relationship with external suppliers for what concerns the meta-project phase. So, as the figure explains, the collaboration between the company and the suppliers for carrying out the first phases of the innovation process is managed by the Design-Driven Laboratory and the designer does not have strict collaboration with the other external suppliers. As already stated her role is mainly related to the research process and this is the motivation the network is coordinated by the DDL. Additionally, for what concerns the portfolio of designers, Italian furniture companies usually have two or at most three reference key designers, with whom they nurture a exclusive and intense collaboration and in so they become the "flagship" designers of the organization. The rest of designers is mainly composed by three or at most four design consultant, with whom the organization builds up a more occasional or, at least, less exclusive collaboration.

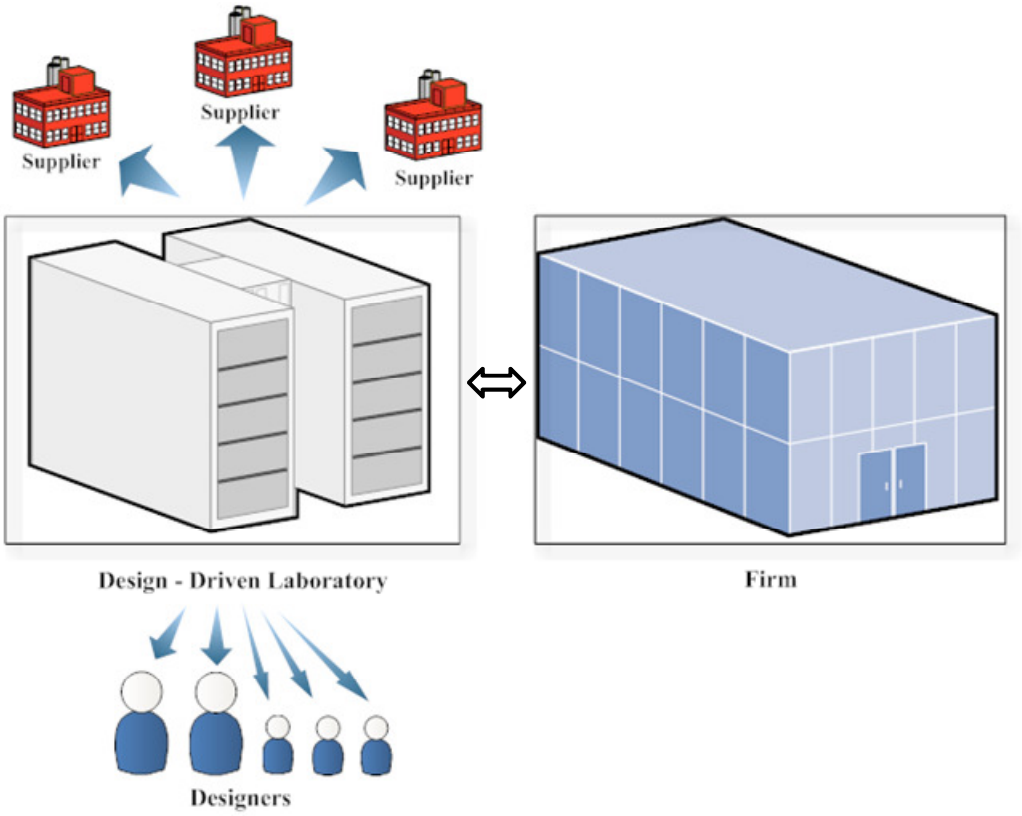

Figure 65 External organization in Italy (network coordinated by the Design-Driven Laboratory)

Among Swedish companies the external designer plays a central role in coordinating the relationship between the company (represented by the Design Council) and the external suppliers, both in the concept generation phase and, above all, in the product development phase. According to the scheme of Figure 66, the designer acts as gatekeeper, since she connects the furniture company with the external suppliers. Her task is not just participating to the innovation process and acting as technical drawer, but also coordinating the network of suppliers who collaborate to the innovation process as well and offer new technical solutions for the ongoing-projects. Each designer has its own network of suppliers (among which some of them might be obviously in common) and the collaboration with the company, designer and suppliers is exclusively linked to the specific on-going project. Consequently, whereas in Italy the cooperation among those actors is supposed to be a long-lasting cooperation, with further implication on the semantic dimension and on the strategic vision of the company, in Sweden this

cooperation is momentary and related the contingent project. This substantial difference has a great impact on the managerial implications, which will be presented in the last chapter.

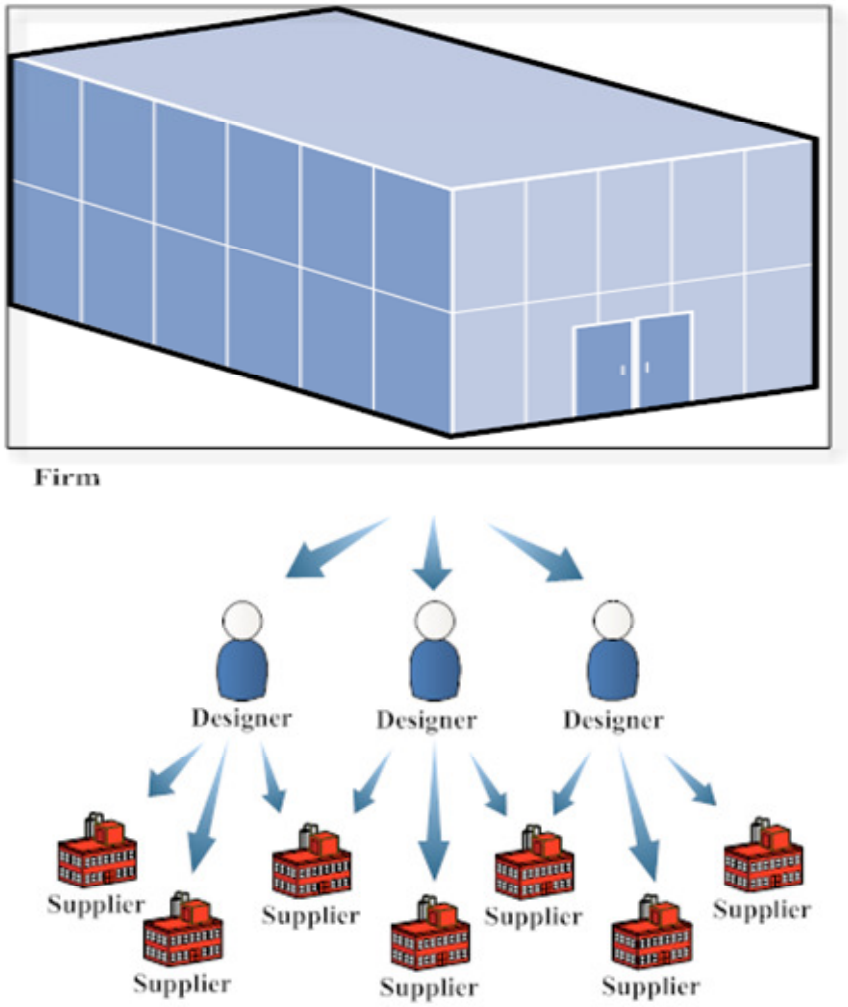

Figure 66 External organization in Sweden (network coordinated by the designer)

7.7.1 THE DIFFERENT RELATIONSHIP WITH THE DESIGNER AND THE INFLUENCE ON THE BRAND MANAGEMENT

Both Swedish and Italian furniture companies build up close relationships with freelance designers, with whom they collaborate working on singular projects. Designers are external to the company and this implies the presence of a boundary spanner who aims at

linking the company's devices with the designer. Especially among Italian companies, where the process of innovation is extended to varied actors of the design discourse, the role of the boundary spanner is crucial and he has to get deep knowledge about the specific details of the project as well as the strategic vision of the company (Mulhern and Lathrop, 2003). Designers as brokers contribute to enrich the design discourse with bits of their own knowledge, and help their clients to interpret the design discourse. Some designers are bridges between different socio-cultural worlds and industries and so they facilitate the transfer of knowledge on meanings and languages among different contexts (Hargadon and Sutton, 1997). Reffering to Alessi, Alesssandro Mendini[2] had a role that may be assimilated to a gatekeeper, as he has been for Alessi a crucial gate to access the design discourse.

What is peculiar in radical design-driven innovation among Italian companies is that designers act as brokers of knowledge on languages and not just on technology. Design languages move across different socio-cultural worlds (i.e. across different countries), although this is a more complex process, given that meanings are culturally embedded (Bertola and Texeira, 2003; Hargadon, 2003). Indeed, Italian manufacturers involve a great number of foreign designers in their innovation process and the collaboration between freelance design consultants and company is usually an exclusive relationship. The designer identifies his/her own values with the ones of the company and the cooperation goes on in different and subsequent projects. The furniture company, together with the designers with whom it is strictly connected, builds up a co-branding collaboration, where the marketing meaning of the product is shared among the two main actors of the innovation process. The market focuses its own attention on the product, being a part of an equal collaboration between the parts.

In Sweden almost all designers owns their own small companies, with 5 to 10 employees, and they collaborate with several furniture companies on different projects. The Swedish furniture companies usually rely on a few designers and to a large extent on their capability to provide ideas. If on one hand this makes the design process risky because not always new ideas and revolutionary proposals are suitable with the manufacturing and assembly processes, on the other hand these details and innovative attributes make the products unique and the company gains market approvals. The

[2] Alessandro Mendini (born 1931 in Milan) is an Italian designer and architect. He played an important part in the development of Italian design. He has been working as consultant,aside from his artistic career, for Alessi, Casabella, Modo and Domus magazines.

contribute of the designer in the meta-project phase and in the new-product development process is crucial for the product success. In the first stage, the meta-project phase, the designer is seen as an external member, who actually can inspire and be a source of inspiration for the Design Council. The final decision about which product should be developed is taken exclusively by the Design Council, to which the external designer usually does not take part. The designer plays an important role only later on in the product development, becoming an active part of the Council. The relationship established between the company and the designer (with his/her company) is absolutely not exclusive. Once the project on a particular piece has been ultimated, the designer feels completely free to end up the relationship with the company that he/she has collaborated with, and to work for a new project sponsored by another competitor company. From the brand management point of view, that means that the main brand of the product is actually more linked to the designer than to the company which actually develops and concretely realizes the product.

The explanation to this relevant difference is connected to the different concept of innovation in the Italian and Swedish companies. In Italy the exclusive relationship between the designer and the furniture company implies a shared and common "planning identity" in the way of conceiving design and innovation. In other words, the planning identity of the designer combines with the one of the company and both together have the same frame of reference when they come up with innovative products. The designer, indeed, is an active part of the design discourse in the meta-project phase, he/she is involved in the elaboration of the meta-project in a structured and organized laboratory of emotions and idea. In Sweden designers, even if they are freelance as well as in Italy, do not actively participate to this meta-project phase together with the company, their task is to elaborate an idea individually, without sharing it with the main other companies of the Design discourse.

"I do not identify myself with a particular view of a specific company, my task is working on a project rather than working for a company." Joel Karlsson, freelance designer

Consequently the relationship between designer and company is not exclusive and the consequence on the brand management can be logically derived.

CHAPTER 8

CONCLUSIONS

After the analysis of the most important differences and commonalities between Italian and Swedish furniture companies explained in chapter 7, in this chapter 8 a brief conclusion of the work is presented and, in particular, some managerial implications are examined. Firstly the objectives of the thesis are presented again and an overview of the empirical results are explained. The different approaches towards the innovation process and towards the internal and external organization of the innovation process imply different ways to manage the relationship between the company and designers and furthermore a different policy towards the selection of designers as external collaborators. The identification and selection of the right design consultant differs in the two realities, as well as the managerial strategies adopted in order to attract the designer and make her collaborate with the furniture company.

8.1 OBJECTIVES

This thesis has aimed at comparing the design innovation process in the furniture industry in Italy and Sweden, and the focus of the research has been the phases of the innovation process, the internal and external organization of the innovation process and the actors involved. The starting point of the research has been the previously analyzed and investigated reality of the Italian furniture industry and this has made it possible to elaborate a reference model, that had to be compared with the Swedish furniture industry. Consequently four case studies about top-level furniture companies in Sweden have been presented, each one focusing on the design innovation process and its internal and external organization. After this empirical analysis, the objectives of the thesis have been basically three different ones, each latter following the former. Firstly, a reference model for the Swedish furniture industry has been elaborated in order to enable the comparison with the Italian reality. The research questions might be divided into three groups. The first group of questions finds out what are the similarities and differences between Italian and Swedish furniture companies in the strategic approach towards the innovation process and the concept of design research and innovation. The second group of questions aims at defining similarities and differences between Italian and Swedish companies towards the structure of the innovation process and finally the third group aims at finding out commonalities and differences between Italian and Swedish furniture companies in the organization of the innovation process, both from the internal and external point of view. So, the second objective of the thesis has been to find out commonalities and differences between Italy and Sweden, maintaining the same perspectives and focusing on the same topics. The main themes objects of the comparison have been the overall strategies adopted, the relevance given to the different phases of the innovation process, and then the role of interpreters and members of the company involved in each phase of the process. Finally, the objective of the analysis has been the external organization and the role of designers and other external suppliers, and generally of the network of interpreters involved in the process. The third objective, actually accomplished in this chapter, has been to derive some managerial implications, basing the considerations on the empirical results obtained before and presented in the previous chapters. These managerial implications firstly focus on the identification and selection of the right designer fitting

with the contingent industrial reality. Secondly they regard the management of the relationships between furniture company and designers.

8.2 OVERVIEW OF THE EMPIRICAL RESULTS

As already stated in the previous paragraph, the first topic object of the comparison between Italy and Sweden has been the strategic approach towards design innovation. Whereas in Italy furniture companies are characterized by a radical design innovation process and it can be defined as a knowledge research process, Swedish furniture companies apply an incremental innovation process and it is based on technical creativity and technological research. So Italian design innovation process has a proactive approach towards the socio-cultural models, trying to influence the way the customers perceive the projected product. In Sweden the approach is basically a user-centered approach, where customer needs are the starting point of the innovation research. Therefore, whereas in Italy (Figure 67-A) the innovation process is mainly focused on socio-cultural research (otherwise called design-research), which implies a generation of new meanings and languages, and technological research, in Sweden (Figure 67-B) the focus is on the concept generation phase, such as the operative part of the meta-project phase, and on product development phase, where sharing knowledge about technical solutions among the actors of the design discourse covers a much more important role than sharing knowledge about semantic dimensions of products and about socio-cultural topics. Analyzing the downstream phase of the innovation process, whereas in Italy the Design fair is seen as a market test, in order to get feedback from visitors and marketers about the prototype that is being developed (since the product introduces a radical innovation in meanings and technologies), in Sweden the Design fair is seen as simple presentation of the final product, which then is soon placed in the market.

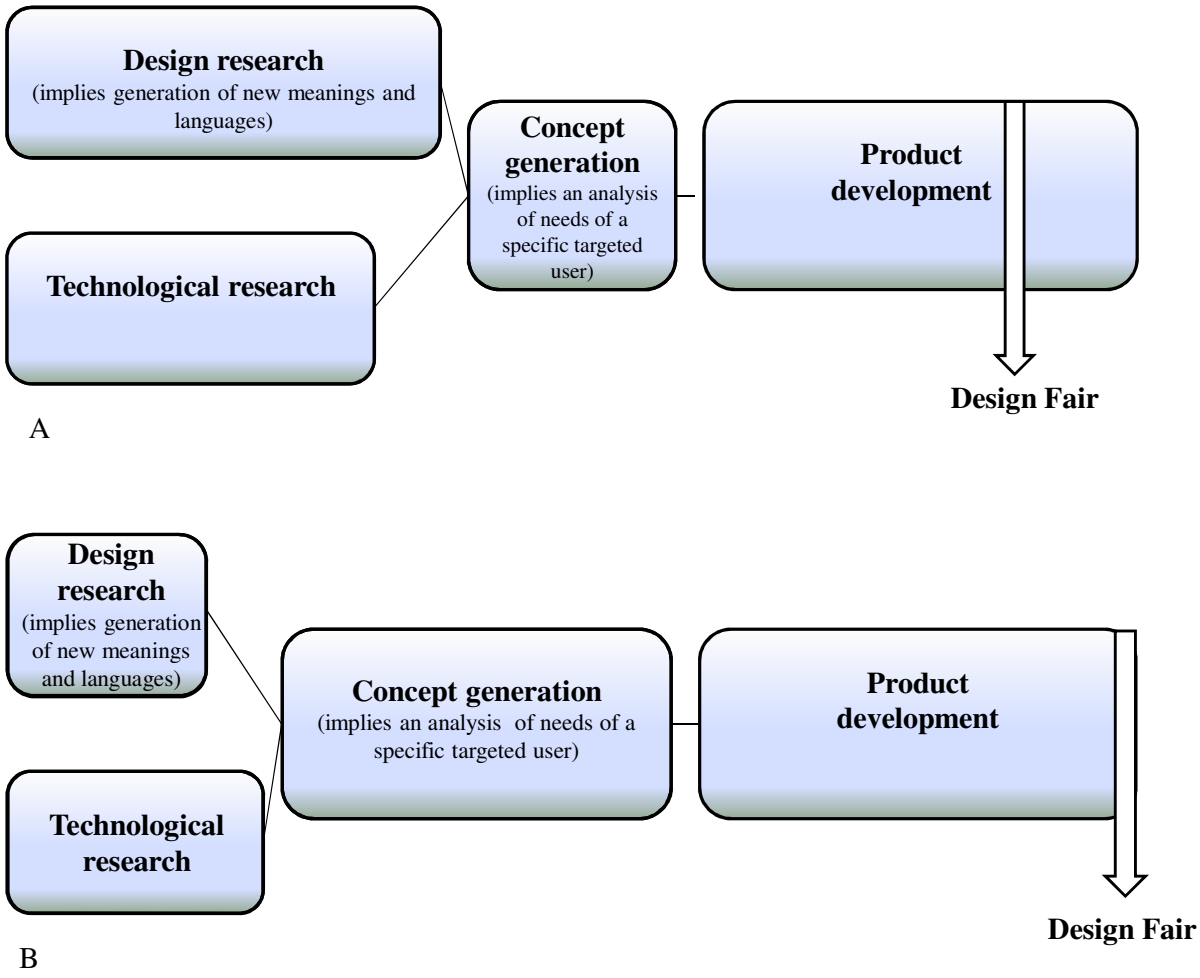

Figure 67 The different approaches towards the innovation process upstream and downstream in Italy (A) and Sweden (B)

Looking at the internal organization and at the members of the company actually involved in the innovation process, whereas in Italy the entire meta-project phase is carried out inside Design Driven Laboratories that are independent from the furniture company, in Sweden the entire innovation process is carried out inside the company. In particular, the internal organization leading the entire process is called Design Council and it is characterized by multidisciplinary competences, since it groups together representatives of each organizational department. Instead in Italy DDLs are composed by mono-disciplinary competences, it groups together R&D personnel who are experts of products technology, they nurture the relationship with the external designer and their competences are exclusively linked to the research dimension. The final topic analyzed in the comparison is the external organization. Whereas in Italy (Figure 68-A) the DDL

nurtures the relationship with external suppliers and with designers (network coordinated by the DDL), in Sweden (Figure 68-B) the designer is the one who looks after the relationship with external suppliers and producers (network coordinated by the designer). Referring to these statements, it must be said that those different configurations are linked to different roles covered by the designer. The designer in Italy is just seen as a socio-cultural researcher and for this reason he needs the Design Driven Laboratory, that has its own structured organization, to nurture the collaborations with other external suppliers. In Sweden, instead, the designer is firstly a technical drawer, that gives her fundamental contribute in the late phases of the innovation process, such as concept generation and product development. Secondly she also plays the role of a technological gatekeeper, being directly connected to her own favorite external suppliers, with whom they usually have strict relationships. Thus, the relationship between designer and furniture company is completely different and this topic will be further explained in the following paragraph. Whereas in Italy that relationship is usually long-term, in Sweden it is short term, being exclusively linked to the realization of the contingent project. For what concerns the external organization, designers collaborating with Italian companies mostly need the support of Design Driven Laboratories as organizations that basically look after the relationships between company and other external suppliers. Designers are mainly given the task of committing themselves in the research dimension, both from the technological and socio-cultural point of view. Design consultants collaborating with Swedish companies, instead, are the ones who look after the relationships between the company and the other external suppliers. Designers are committed in the research dimension, especially from the technological point of view, but at the same time they nurture the relationship with technological suppliers and for this reason they are considered technological gatekeepers.

Finally, as it can be seen in Figure 68, the portfolio of designers is basically different, according to the already explained considerations done in the previous chapter. Whereas in Italy the portfolio is composed by two main top-design consultants and then another set of secondary designers, in Sweden the relative importance given to the portfolio of designers is almost the same, according to the fact that the relationship is exclusively linked to a specific project.

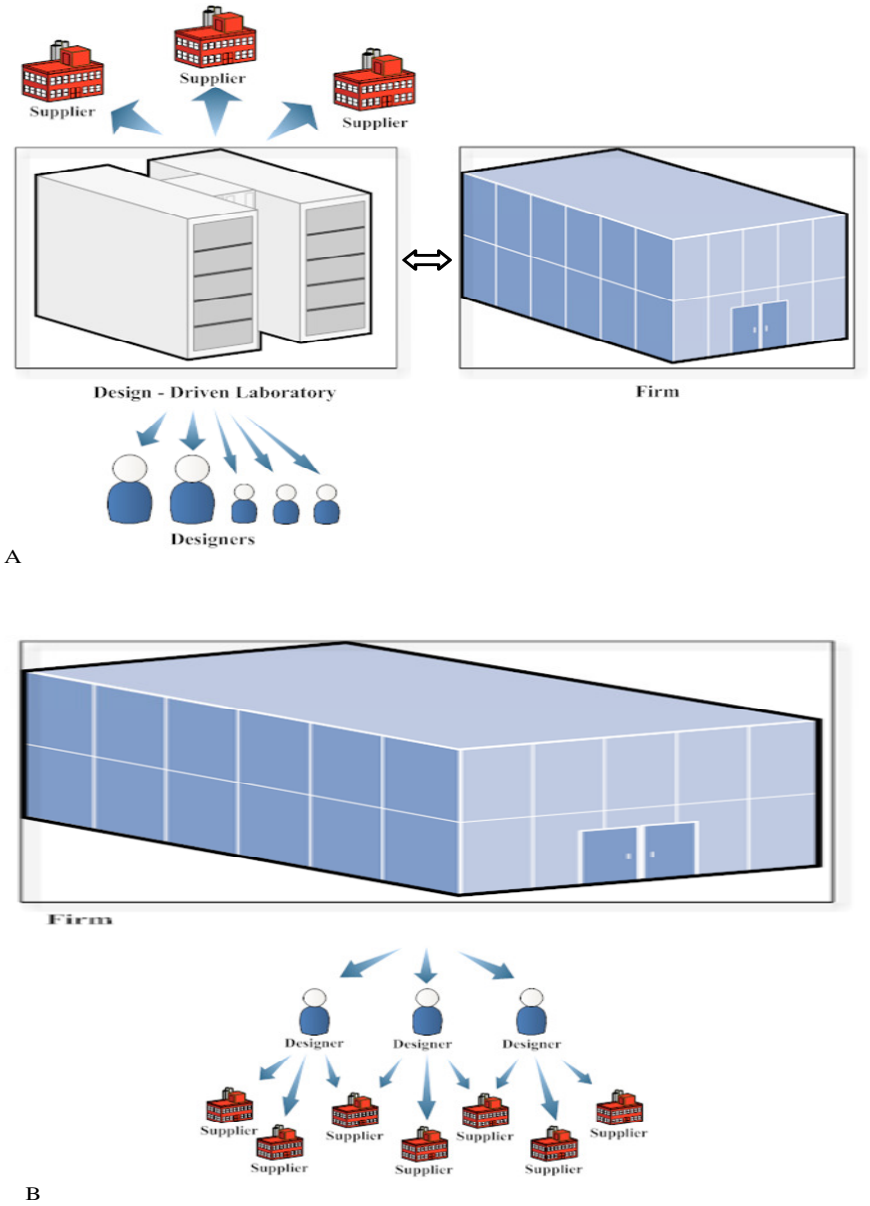

Figure 68 The different approaches towards the internal and external organization of the innovation process in Italy (A) and Sweden (B)

8.3 MANAGERIAL IMPLICATIONS

The different approaches towards the innovation process Italian and Swedish furniture companies undoubtedly implies a different way to manage the relationship between the company and designers and different strategies, in particular for the selection of the right design consultants. In the following paragraph some managerial considerations will be

presented in order to give an overview about the nature of the relationship between furniture companies and designers. Specifically, the focus regards two different perspectives. The first one concerns the plausible profile for the right designer, such as the task will be finding out what are the right characteristics of the right designer who ideally fits with the configuration of the company (both in Italy and Sweden). So the question "How can you identify and select the right designer for the furniture company?" will be given an answer. The second perspective concerns the path the company has to follow in order to attract the right designer, what are the main issues the company has to have in order to have a efficient relationship with the designer. So the following question will be answered: "How can you attract the right designer for the company?".

8.3.1 DESIGNER PORTFOLIO MANAGEMENT: HOW CAN YOU IDENTIFY AND SELECT THE RIGHT DESIGNER?

Among Italian companies designers act as brokers of knowledge, that means they act as strategic connections between the firm and the interpreters of the design discourse and they link different socio-cultural worlds and industries. Designers are freelance professionals and work for to the discussion about design languages and help them to interpret the design discourse. Since designers are considered even socio-cultural researchers and not just technical drawers, Italian companies rely on the early involvement of them in the innovation process. This is the reason why top managers of the furniture companies that actually apply radical design-driven innovation have a close relationship with designers. They are considered strategic resources for the corporation and act as strategic consultants. The process of research of languages is based on talks and discussions and therefore there is a need of investment in time by executives. Moreover, typically a designer in the Italian furniture industry has to share the same values of the company. The firm has its own values in order to effect the environment. Design consultants, on the other hand, have their own paths and their own systems of values. Ideas may contrast, but basic values need to be somehow aligned. Opinions may change, but basic values of the company cannot be adapted to suit a particular client or designer (Verganti, 2003).

In the Italian context innovation has historically migrated from functionality and technological capabilities to cultural and social affordances based on symbolism of artificial spaces and social interaction. Designers create innovative concept accessing the implicit understanding about products' functions and meaning shared inside the surrounding community. They apply what can be called an implicit process of "participatory observation" (Kaminski, 1985), experiencing the product from the user point of view and interacting with it in a social context. Designers in Italy are socio-cultural researchers and in order to collect knowledge and new ideas about languages and messages of products they are supposed to connect their company (and in particular the design driven laboratories) to the network of interpreters surrounding the organization. Thus, designers have to be able to capture inputs from the discourse, observing and analyzing the changing market needs and positively exploit the messages coming from outside. Therefore, designers should be selected because of their ability of being brokers of languages and according to their capability of connecting the company to the several other interpreters of the design discourse, much more than their technical skills and tools used in the operative processes.

Since among Italian manufacturers there is the need to involve designers as brokers of new meanings and messages in their innovation process, in Italy companies tend to collaborate with foreign designers in order to combine and integrate the brokering of knowledge on both the local and global contexts. As already stated in the previous chapter, innovative companies manage rich portfolios of designers keeping innovativeness and a high level of internationalization inside the organization. This strategy guarantees better performances for those companies that compete at the international level and need to interpret desires and expectations of different cultures. Designers are involved in the process of interpretation and development of the local languages that have to match with social needs of people. This process is pretty complicated and it requires a deep understanding of the aesthetic and cultural context and of the market's expectations. Furthermore designers exploit their network position to move languages, meanings and values attached by people across industries and socio-cultural worlds.

Among Italian companies the designer is seen as a internal resource and consequently the collaboration between her and the company should be a long-term relationship. Thus, the Human Resources department in an Italian furniture industry should identify and select only design consultants with whom establishing a long-lasting collaboration with human

resources who will be part of the company, seen as a big business group with its own precise identity. Consequently, designers' selection should also be based on designers' values, according to the correspondence between their values and the ones of the company. The research path followed by the design consultant possibly has to be on the same direction with the one followed by the managing director of the company and consequently with the one followed by the entire organization. The process of identification of values between company and design consultant definitely requires time, since it implies a process of continuous sharing of knowledge between the actors involved in the discourse. Indeed, the correspondence between the paths comes out after a certain amount of time and shared experience. This process of identification between company and design consultants also entails the establishment of personal relationships between designers and companies' leaders. The already quoted Alessandro Mendini might be considered a perfect example for the relationship established with his collaborating company Alessi. Along years of collaboration he has become more than a simple consultant for the company, but a personal friend and almost a mentor for Alberto Alessi, the company director.

Among Swedish companies the approach towards the selection and designer portfolio management is radically different. Designers collaborating with Swedish companies, being especially involved in the concept generation and the product development phase, are mainly brokers of technologies, and the connections designers have to nurture are represented by industrial manufacturers and every interpret that might give its own contribute to provide innovative technological solutions. Their technical tools and creativity are necessary conditions for being considered suitable for the Swedish furniture business. Swedish companies consider designers as technological key gatekeepers and their contact with different technologies comes through the individual designer's contact with industries where those technologies are used. Designers come into contact with potentially valuable solutions through the technical training and jobs they had before, being fundamental part of their background. Lammhults as well as Mitab usually select designers because of their past experience and because of their knowledge about some sectors, such as the car industry and computer hardware.

"The choice of the designer is made considering their past works and on the network of contacts she can establish within our own business area. Mitab is very open to new contacts and new designers." Peter Torstensson, Mitab

Swedish companies select designers for their knowledge and interest in areas outside of their work, such as toys, bicycles, model airplanes, sailing, sculpting, farming, skiing, cars, mountain climbing. The broad knowledge and interests of designers result in access to design solutions beyond the solutions that the company itself is exposed to in its clients industries. Each designer has a distinct body of technological knowledge form working with suppliers, form past technical training and work experience. The role this different knowledge plays in creating new products is evident in a description of how one designer's personal background is the source of new solutions. Additionally, designers see their community as a valuable clearinghouse for technological solutions that they have accumulated through years of access to other industries. This community experience allows them to "cross-pollinate" their ideas between products and industries. A Swedish furniture company is able to exploit this crosspollination in its innovation process because of its structural conditions that allow an actor linking otherwise disconnected domains to have access to ideas that are potentially valuable, but unknown, to others (Hargadon and Sutton, 1997).

Among Swedish companies the external designer plays a central role in coordinating the relationship between the company (represented by the Design Council) and the external suppliers, both in the concept generation phase and, above all, in the product development phase. Most part of the production processes are performed outside the company, outsourced to other suppliers who are located in the same geographical area. From the already presented case studies we can quote Småland for Lammhults and Tybro for Blå Station. So the role of the designer in coordinating the network of suppliers becomes strategically important both for the technological research in the upstream phase of the innovation process and, especially, in the late downstream phases. Actually the task even consists on finding the right suppliers and producers who fit with the technological needs of the specific developing product. In so doing the designer interprets her role as a gatekeeper and broker of technologies. Consequently one crucial aspect regarding the efficiency of this brokering process is related to the ability of the designer to be well connected to the industries that offer technological solutions, and enabling the flow of

information between the industries that have such knowledge and those that do not have them. Actually Luca Nichetto, who collaborated with Blå Station for Robo chair, had his own design company in Italy through which he nurtured a proficient relationship with some material suppliers in Udine (Italy) in order to have some technical advices for the concept generation phases and the development of this idea. This is a clear example of the importance of the contribution of international designers (Italian, in this case) as keepers of languages and technologies. Secondly the role of the designer as key member of the designer discourse, as broker of technologies and as linkage between the company and the other external suppliers.

These considerations made about Italian and Swedish furniture industry are directly derived from the previous analysis about case studies and, above all, from the interpretation and the comparison between the two realities given in chapter 7. The differences that have been underlined throughout the previous sections for what concerns the profiles of the ideal designer who is supposed to collaborate with an Italian or Swedish furniture company makes it possible to assert that the two realities foresee two different backgrounds. In other words, whereas in Italy furniture companies basically request designers with the background of an architect, Swedish furniture companies are more likely to need industrial designers. This difference is of course linked to the different role covered by the two types of design consultants. Whereas the architect has a much more consistent sensibility towards the socio-cultural researches and towards the semantic dimension of products, the industrial designer is much more linked to the technological dimension of the innovation process and her contribute is actually more related to the technical features of projects.

8.3.2. MANAGEMENT OF RELATIONSHIPS WITH DESIGNERS: HOW CAN YOU ATTRACT THE RIGHT DESIGNER?

Italian design furniture companies build up an exclusive relationship with designers, while in Sweden the relationship is temporary and not exclusive. In Italy the exclusive relationship between the designer and the furniture company implies a shared and common “planning identity” in the way of conceiving and interpreting design and innovation. The designer, indeed, is an active part of the design discourse in the meta-project phase, she is involved in the elaboration of the meta-project in a structured and

organized laboratories. The designer's opinions about specific products or projects may change or differ from the ones of the reference company, but basic values of the company are stable and especially cannot be adapted to suit a particular client or designer and they have to be shared among all the interpreters. The designer's involvement in the innovation process is linked to the first phases, where within design-driven laboratories socio-cultural studies about product meanings and languages are carried out. Top managers of the companies that actually apply radical design-driven innovation have a close relationship with designers. They are considered strategic resources for the organization, there is a continuous sharing of values, messages and product meanings. Hence, the process of research of languages is based on talks and discussions among those interpreters and usually executives invest time and resources to organize meetings and discussions in order to facilitate this dialogue.

Starting from these known observations, the objective of this paragraph is finding out what are the most plausible strategies adopted by the Italian furniture company in order to attract a designer with the profile described above and whom is given some specific task inside the company. According to the model on which the relationship between designers and furniture company is based, the contract that better formalizes the relationship between furniture company and designer definitely has to be a long-term contract that allows the designer to develop a relationship with the referent company based on symbiosis and mutual trust. Specifically, the usually established contract is based on royalties related to the particular project. Royalties (usually running royalties) are usage-based payments made by one party (the "licensee") and another (the "licensor") for ongoing use of an asset, sometimes an intellectual property. In our case the furniture company is the licensee, whereas the designer is the licensor. Royalties are typically agreed upon as a percentage of gross or net revenues derived from the use of an asset or a fixed price per unit sold of an item of such. A royalty interest is the right to collect a stream of future royalty payments. Among Italian furniture companies this kind of contract gives the designer around 5% of the turnover related to the marketed product. Royalty contracts connect the designer with the company for long periods of time and the key aspect regarding this type of contract is represented by the fact that the designer takes the possession of the risks linked to the project and share them with the company. The incentives in royalties may facilitate a harder commitment from the designer who owns a personal incentive to work for favorable solutions for the market. Actually the "principal–

agent theory" suggests that companies typically are risk-takers while employees are risk averse. This, indeed, would imply a payment based on fees. If on the other hand the designer is particularly well informed about the market and even has ambition to enhance her personal reputation and, hence, a need to be well known by the market, she may have an incentive to be risk taking (or risk-sharing) and prefer a royalty. The adoption of this kind of retribution, mostly preferred by Italian companies, is also related to the strategic decision of the company to collaborate with a low number of designers and for long periods. What often happens is the instauration of a relationship based on mutual trust and collaboration, that enables the identification of values with the company and the sharing of risks related to the specific project.

In Sweden designers, even if they are freelance as well as in Italy, have the task to elaborate an idea individually, without sharing it with the other interpreters of the design discourse. Consequently, the relationship between designer, just seen as an external resource, and company is not exclusive and it is limited to a particular project. The designer might bring his know-how, exploited to conceive a particular product, inside a company and use it for another company, potentially a competitor. This is one of the reasons why the designer is not significantly involved in the meta-project phase and in the elaboration of the strategic plan of the company. Her professional collaboration with the company is just related to the technical execution of the project and to the new product development. For all these reasons there is no need to start up a process of identification of values between the two parts and accordingly the professional contract established is necessarily a temporary project-based contract. The professional relationship is exclusively linked to the singular project and as soon as the new single product or the entire catalogue developed are launched into the market the collaboration between design consultant and company might be unanimously interrupted.

The different approach towards innovation and the different relationships between the company and the designer imply a different approach towards the designer portfolio management and towards the alliance established between the company and the design consultant. Strategic alliances occur between two collaborators involved in a particular project. It is a matter of 'marriage of convenience' when designer and furniture company want to associate to take up a particular short-term task. A strategic alliance, indeed, is a formal relationship between the two parties in order to pursue a set of agreed upon goals,

such as to accomplish a successful strategic innovation process and meet a critical business need while remaining independent organizations and basically independent for what concerns values and cultural visions. In the Swedish case, the designer provides the strategic alliance with resources such as distribution channels, manufacturing capability, knowledge, expertise, and intellectual property. Additionally she guarantees the connections with technological suppliers, being a gatekeeper and broker of technology. Indeed, the designer in Sweden has to provide varied contributions. Being technically involved in the concept generation and in the product development, she must understand the production sites and materials applicable to the design and present a consistent argument that the design concept is feasible before a confirmation is sanctioned by the furniture company. In the meanwhile the furniture company provides project funding and the organizational structure needed to accomplish the alliance. The latter is a collaboration which aims to a synergy where each partner hopes that the benefits from the alliance will be greater than those from individual efforts, since it involves technology transfer (access to knowledge and expertise) and economic specialization. In Sweden designer and company are two totally independent and separated identities, they do not share the same expenses and risks linked to the particular projects (as it happens in Italy) and so the most common type of contract established with external designers is the fixed-price contract. According to this kind of contract the designer receives a fee on hourly basis or, alternatively, a total amount related to the project is previously specified at the beginning of the cooperation. The designer does not have any commitment into the performance of the projected product and therefore the collaboration is definitely transitional. A typical strategic alliance formation process in the Swedish furniture industry firstly includes the strategy development, that involves studying the alliance's feasibility and objectives. It requires aligning alliance objectives with the overall corporate strategy. Afterwards there is the designer assessment, that involves analyzing a potential collaborator's strengths and weaknesses, preparing appropriate selection criteria, understanding the designer's motives for joining the alliance and addressing resource capability gaps that may exist for the partnership. Contract negotiation involves determining whether both parties have realistic objectives, defining each partner's contributions and rewards and contracting the amount of the fee that the designer is supposed to get. Also highlighting the degree to which arbitration procedures are clearly stated and understood. Alliance termination involves winding down the alliance, for instance when its objectives have been met or cannot be

met, or when the company adjusts priorities or re-allocates resources elsewhere. The advantages of this strategic alliance in the Swedish furniture industry includes allowing each partner to concentrate on activities that best match their capabilities. Above all, it implies learning from partners and developing competences that may be more widely exploited elsewhere. This means that since the designer is linked to the main company only for one project and for a short period of time, the circulation of knowledge and the information flow occurring among the discourse's members is much more relevant and the interchangeability of information is more significant. Indeed a high turnover of design consultants may imply a continuous enrichment of knowledge and technical solutions by the company. Additionally the process of selection of the designer is much more structured from the organizational point of view. As soon as the company has to elaborate a new project the process of designer selection starts. A large number of ideas coming from candidates can mean getting more clues and signals from the market, although they might be weak, and also makes it possible for a company with a good intelligence channels to identify changes in demand earlier than other competitors (Kristensen and Lojacono, 2002).

8.4 LIMITS AND FOLLOW-UPS

The initial idea to compare the two different approaches to innovation among Italian and Swedish furniture industries presents some limits.

First of all, the furniture companies in Sweden are all focused on the production of the same furniture products: chairs and armchairs, barstools, benches and modular seatings, easy chairs and sofas, tables and trolleys. On the other side, the two Italian companies analyzed focus their own production on two peculiar kinds of products: Kartell is specialized in producing plastic furniture products, Alessi in furniture for kitchen. Anyway, those companies take part to the same industry and choosing companies that share similar contexts (direct their effort to the upper-end contract market) improves the chances for the findings of having validity for the particular industry. Indeed, it is pertinent to study companies in similar or identical industries because design processes are even more different when other industries are compared. Yet the aim is to find similarities and variations within a single low-tech industry. Another reason for focusing on furniture is that this industry has been a leader in the use of design, and other industries have often

found their inspiration here. It is therefore a field with major challenges for design and an area where the best designers get much attention.

Secondly, the information gotten in order to do this comparison have been different. The choice of the companies has been actually stochastic. Indeed, the first purpose was to find out companies who would have been supposed to implement the design-driven innovation processes actually implemented by Kartell and Alessi in Italy. After a brief look through the furniture industry in Sweden, these companies have been chosen as ones of the most representative companies for the Swedish furniture business.

Many problems have been faced in order to get information about Swedish companies. Many managers of the companies have not been available over this period for face-to-face meetings, because of geographical distance and also because of their unavailability due to international meetings or fairs. This is the reason why some information about the company, as well as information about the organization and the financial situation of the companies, have been taken by other case studies already done by others, by companies' websites or conversations on the phone. Additionally, in the process of the individuation of commonalities and differences between the Italian and Swedish furniture business, not so many terms of comparison have been traced. The purpose of a further analysis should be identifying more point of references, moreover contacting more companies in order to find additional points of comparison.

A further study could focus on the way the interconnections and supply networks in the furniture business work. There are a multiplicity of interconnected markets and networks involved in the furniture industry. It would be interesting investigating how those networks and relationships occur, with a focus on the network between the furniture company and external suppliers, since the implications for the managerial perspective in this thesis have been just focused on the relationship between external designers and furniture company.

The furniture industry is nowadays undergoing profound changes, where the focus on organizational systems and networks is becoming more urgent. With increasing use of high technology in the processes that must be adapted to the existing skill base, there is a lack of understanding of how the high and low technology can be brought to function well together in managing the innovation process and its organizational. The issue is much concerned with understanding the users and their needs, and channel that information into the development processes. With highly complex procedures, particularly in the contract

market, there is a need for better understanding of the users. This knowledge must then be fed back to the design processes. According to the theory about design driven innovation, understanding customers' needs means also involving them into the design process and make them participate to the design discourse. Focusing more on the buyers and customers, more knowledge about who uses the furniture will emerge and improve the designs and make better competitive sustainable products. It would be interesting to understand what are the main devices linked to this theme and set down a comparison between Italy and Sweden from this point of view, deriving other managerial implications linked to this question.

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