Understanding Design Process

- Developing a business tool for approaching design's issues

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Executive Summary

New market's priorities and perceptions radically changed the way competitiveness is perceived, mostly if a globalized economy is taken into account.

Design, from being a differentiator mainly related to the objects' form and shapes, increasingly acquired a prominent role in providing answers that simply go beyond the aesthetic aspect. In previous decades, meaning and strategies had been subjected to an increasing contamination with design, making the understanding of this discipline and its processual development an important issue for the business world to deal with. This thesis developed a multi-disciplinary theoretical framework to tackle and unfold precisely the peculiarities that characterize the design process, making it possible to answer this question:

<u>"What are the analytical processes behind product design and meaning creation, and how can a better understanding of these processes be beneficial for business?"</u>

The purpose of the thesis is to try to formalize an intuitive model that might be used by the business discipline as a tool to better comprehend the different stages that characterize a design process and, in this way, try to improve the quality and the collaboration between those two actors (business and design).Through an hermeneutic methodology, the whole process has been divided into four parts, and those same four parts (Design, Reasoning Patterns, Hermeneutics, Business), after an individual analysis, had been recollected in a single model.

It was found that design as a subject *per se* is really complex to define if not applied to a concrete setting. In relation to reasoning patterns, two modalities of reasoning (Abduction type 1 and 2) have been ascribed as more adherent to design process; however those can be both employed in different paradigms, making the generation of different outcomes possible. Moreover, due to the unpredictability of the interpretation carried out by consumer in acknowledging product (hermeneutics), it is shown that a business strategy based on user-driven instead of design-driven innovation cannot be set aprioristically.

The final map/guideline should be intended as an exemplified tool useful to provide insights to business on how the design process tend to outline and what are the critical steps and areas that should be taken into consideration when one wants to improve it. On the other hand, given its business nature, the present work might be interesting also for designers who are willing to gain a better overview on business strategies that consistently leverage on design.

Table of Contents

1. Introduction

1.1 Problem Background

Economy, intended as the mere production of goods with criteria of efficiency and efficacy has become a common acknowledged criteria, an unavoidable *status quo* that characterizes the production method of each company existing in the market nowadays.

The competition based exclusively on price dictated by the well-known law of supply and demand, in a market well regulated like the European one, is becoming an extremely difficult business strategy due to the low cost products offered by companies of the so called emerging economies.

Thus, in mature markets, a strategy of product differentiation has become a categorical diktat for a company that seeks to survive in a progressively globalized dimension. The answer for solving this issue was clearly lying in a different "set of knowledge" that business, in a strict sense, could not acquire through the usual economic calculus. At this stage, the idea that the emotional aspect of a product could play a central role in accomplishing this task started to become more and more concrete. This was also thanks to the powerful influence that groups of artists and architects started to have in the business world (i.e. Memphis) and the incommensurably boost that they gave to companies that decided to collaborate with them. One could think that art should be the perfect ground to establish a profitable discourse regarding aesthetic, but in order to avoid a total detachment from the economic reality, a different interlocutor has been pointed out as the privileged one: The *Design*.

In the last three decades, companies have drawn heavily on design to accomplish the delicate task of creating products with distinctive, beautiful and "difficult to replicate" aesthetic components in order to escape the basic logic of price competition. Business realized that consumers were willing to pay a "premium price" not only for a functional product but also for one that could serve their emotional needs.

The exponential growth related to the intense exploitation of design-based approach for product development led to a predictable scenario. Design slowly became a basic feature that almost all customers expected to find in any kind of tangible (as well as intangible) product, making the aesthetic differentiation a common feature of any good. One could argue that, paradoxically, from a differentiation through design there has been a standardization based on design (Postrel 2003);

It's fair to mention that this process has not been straight forward as one could think. The interrelation among design and business went through different stages, adopting different kinds of visions to satisfy certain aspects of cultural requirements. Which type of role designed played in the last years is described briefly in the following sketch inspired by the analysis conducted in the Chapter 5 of Hjorth and Kostera (2007).

Figure 1: The role of design in different historical context

Modern Era
- Clear division between Design and technique
- Subsequent fragmentation based on pragmatic approach
- Concept: "form follows function"

Modern -> Postmodern
- Concept "High Design" (exclusive/expensive design)
- Heavenly goods for rich consumer and tokens for "wish they were rich consumers"
- Experience starts to become part of the product itself

Postmodern Era
- Make "High Design" accessible to a wider public
- The three dimensions (art, function, production) start to dialogue on a flat level
- Experience becomes the fulcrum but not undertakes the other factors

Although it represents the end of this little historical excursus, the final point achieved by the chain of events described above is perfectly synthesized in the following statement that will be used as the focus for the main issue in the thesis' discussion.

*"Design is a value-driven activity. In creating change, designers impose values upon the world, values of their own or those of their client. To be a designer is a cultural option: designers create **culture**, create **experience** and **meaning** for people".*

(Hjorth, Kostera 2007)

1.2 Problematisation

From being simply a component to foster uniqueness and differentiation among products, design eventually became a core competence recognized as crucial to boost innovation itself (Bertola, T. 2003). As many authors underline, quoting Krippendorff, *design* is not simply attention to style but is "making sense (of things)" (Cinzia Battistella, Gianluca Biotto et al. 2012, Verganti 2009). This new profile that design has assumed recently has been investigated from different angles but not, as far as I can see, in its intimate nature.

It seems to me that there is a grounded belief (mostly from the business side) that the process of "meaning creation" is something that doesn't belong in managerial knowledge; it seems like there exists a feeling, which suggests to leave aside this topic because it can't really affect business deeply. Design process is received as a given and it is extremely unlikely that someone tries to question or understand its mechanism. Using a metaphor taken by (Callon, Michel & Latour, Bruno 1981), I could potentially compare this attitude toward design to the so-called "black box" idea presented by the authors quoted above:

"A black box contains that which no longer needs to be reconsidered, those things whose contents have become a matter of indifference. The more elements one can place in black boxes - modes of thoughts, habits, forces and objects - the broader the construction one can raise. Of course, black boxes never remain fully closed or properly fastened"

By narrowing the scope of this thesis to companies involved in product creation within the design field, the aim of this work will be to try to unfold the hidden content of those mechanisms. One could argue that these primarily belong to design field, but it is a matter of fact that they inevitably influence the way of doing business in companies involved within this sector. In order to achieve this goal, an analytical overview will be carried out on how design has been studied thus far, how it has been intended when employed in meaning creation, and what the logic and epistemic processes are that make it unique and strategic . Different areas, tendencies and fields will be touched, avoiding any mental closure towards different ways to interpret a phenomenon that is inevitably cross-disciplinary and complex.

1.3 Problem statement

The issues raised in the previous two sections led me to focus precisely on the following topic:

"What are the analytical processes behind product design and meaning creation, and how can a better understanding of these processes be beneficial for business?"

In order to answer the aforementioned question, a variety of perspectives will be used to properly acknowledge the different *dimensions* of the problem. Namely, I will start focusing on design conceptualization and understanding (in business and design point of view). I will move my attention on the process itself by analyzing the reasoning patterns and the related issues that can arise in relation to paradigms and meaning. Thus, further attention will be dedicated to meaning transferring and interpretation in order to discuss the process when it reaches the final stages. As a result, business reflections concerned with adoptable strategies in relation with different scenarios and "ways to deal" with design process will be brought into the discussion.

Based on the factors listed above, I should be able to draw a final and intuitive picture to answer my question.

2. Thesis Purpose

The reasoning behind the purpose of this thesis is to justify the relevance of design process in a business context. The interactions that occur between business and design still belong to an unexplored domain which necessitates a better analytical systematization to be considered more profitable.

For this purpose it was interesting to attempt to breakdown the study of the process into two different "moments". The first phase of this inquiry is going to be characterized by an epistemic research where different kinds of philosophical approaches will be brought into the discourse in order to analyze which type of reasoning patterns might be employed in the design process. As a result, this should make it possible to elucidate the potential processes used in the design approach. The second phase of the inquiry will attempt to examine how this knowledge is currently applied within companies and it will be a natural prosecution to understand how business is profiting from it. This analysis will try to establish (within its inevitable limits) what the present *status quo* is, taking advantage of the material gathered and making a thorough and systematic comparison between empirical material and theory.

The purpose of this thesis will be centred on generating an intuitive and analytical map of this complex process in order to make it available for business use and understanding. I believe that in this way, companies involved in this peculiar field will have a better overview of the potential strategies to follow in relation to the design process embraced. Furthermore, the purpose of this work is to offer a better insight from the designer's point of view in order to improve the understanding and the communicability alongside the managerial counterpart. A key factor this thesis aims to avoid is being another source of inspiration on how interesting design is in a business perspective. I am conscious about the unavoidable implicit constraints existing within this limited research, however this should not prevent this dissertation from attempting to make a concrete contribution, marginal or not, to this relatively new and unexplored field.

2.1 Thesis Delimitations

I will briefly highlight what the boundaries of the areas that my thesis is going to cover are. This operation aims to delimit the scope of my investigation in order not to drift away from my path. I will list the relevant "poles" that are going to set the direction of the inquiry:

1. As previously stated, the study of the process will be the main point to deepen. In this sense, I am more interested in understanding the processual steps that design involves and not its aesthetic or visual characteristic.

2. I chose a particular branch of design because it resulted in providing a more coherent insight related to the research question. I thought that "meaning transferring" expresses itself in a better way when an act of material creation becomes necessary. This is the reason for limiting my research to "design product creation"

3. Although most of the business models concerned with the use of design are intimately related with business innovation, the latter will not have a prominent role *per se*, instead those will always be related to the design's field.

4. In this thesis, business is intended mostly in its organizational aspect. All the implications related to the further commercialization of a product (price, costs, marketing, etc...) will be left aside because they can be considered collateral and furthermore it would require an additional thesis paper in order to thoroughly investigate them.

3. Method

3.1 Methodological Choices

In the following section, the aim is to provide an appropriate overview of the reasons that led me to investigate my field of inquiry in a certain manner instead of another. In the reading order, the following topic will be outlined:

1. The philosophical assumption which describe my theoretical setting and how I relate myself as a researcher in the reality of my investigation.

2. What kind of logic subsumes my reasoning in the process of dealing with empirical material and of extracting knowledge from it. In conclusion, I am going to explain the motivation of following a particular approach instead of another.

3. Furthermore, the focus will be centered on which methodology will be employed to deal with case-based approach studies and semi-structured interview material.

4. Final remarks of this section will debate some aspects concerning validity and reliability.

3.1.1 Philosophical Assumptions 1/3: Sociological Paradigm

I decided to divide the explanation of my philosophical assumptions into three parts that will range from a wider prospective to a narrower one. Firstly, I will ideally start positioning myself in a certain sociological paradigm, and then I will move to the interpretative approach chosen to study my object within this paradigm. I will finally then clarify my position towards the reasoning that I embraced while I was dealing with data and empirical material.

Ideally, I will follow a centripetal explanation as depicted below:
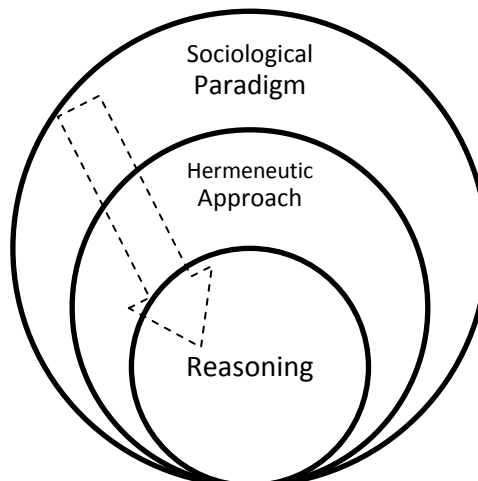
Burrell and Gibson (1982) developed a useful matrix to conceptualize the different sociological paradigms underlying different methodological choices to analyze society. Each of those reflects peculiar assumptions that help the researcher to understand his ideal position in the approach towards reality, making it possible to shape the direction of the investigation in a certain manner instead of another. The four paradigms are synthesized in the following Matrix:
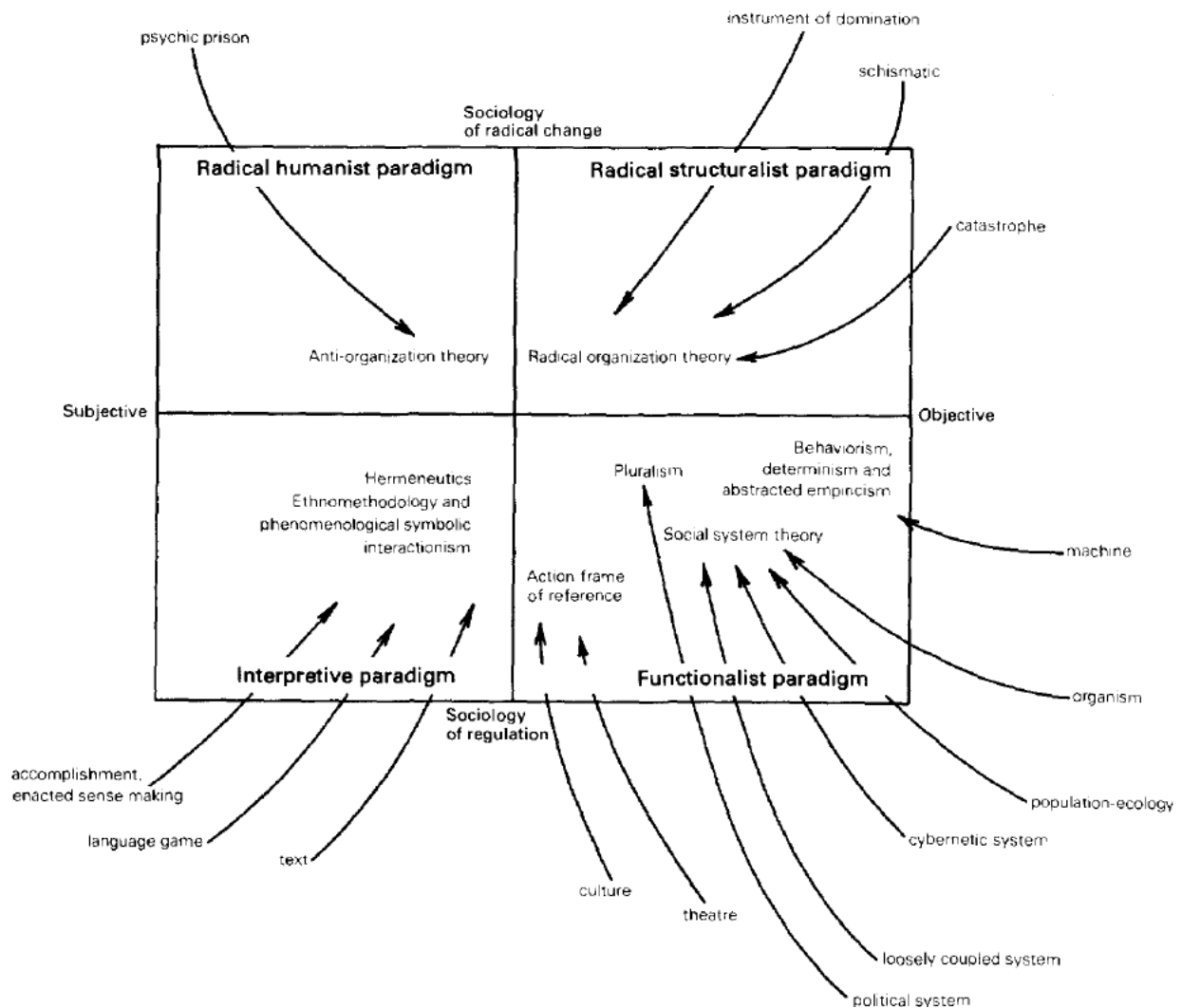
(Morgan 1980)Figure 2.

Briefly, I will describe each of the paradigms as suggested by the author and I will explain the reasoning that guided me to opt in favour of the chosen one.

- *The functionalist paradigm*: There exists a reality that is detached from people, even if those are influenced by the relations originated between them and the society. Thus, an objective

understanding is theoretically possible for the researcher. This approach is tendentially pragmatic and believes in the possibility of generating univocal knowledge.

- *The interpretative paradigm*: Society does not have an ontological status *per se*; it exists due to the continuous interrelation between subject and object. Given the intrinsic subjective nature, multiple interpretations of reality can arise and therefore objective knowledge is unobtainable.

- *The radical humanist paradigm*: Society is socially created and sustained, however this political creation tends to constrain the human being in an invisible prison of the mind.

- *Radical structuralist paradigm*: Society has a strong ontological existence, although fragmented in different structures that conflict and provoke a wave of renewal. Humans, in respect to the radical humanist approach, are not the artificers of those super-structures.

Given the subjective and interpretive imprint that vividly characterizes my thesis question, I opted to place my research in an *interpretative paradigm*, discarding the option of discovering an objective truth trough my investigation. I agree with Morgan (1980) when he states that although we try to objectify the world around us, the words, the concepts, the ideas and the observations should be considered simply as tools to <u>subjectively</u> interpret the perception of the objective reality existing "out there".

How to unfold the reality under the lens of this paradigm will be outlined in the following section.

3.1.2 Philosophical Assumptions 2/3: Hermeneutic Approach

Given the nature of the chosen topic, a qualitative interpretative based approach has been preferred to an empirically oriented one. As I will demonstrate later on, most of the empirical data gathered to activate my discourse share a clear qualitative factor that is unlikely analyzable under the lens of the statistic procedures because of its textual and narrative nature. Moreover, the exploratory and explanatory path embraced by this thesis is not aiming to test a distribution (i.e. F test) but to interpret the reality subtended to the paradigm described before.

I found the hermeneutic approach the most consonant with the intrinsic necessities needed to make a coherent analysis with theory and empirical material. In fact, the process itself cannot be described as straightforward and unidirectional, instead it would be better represented by an iterative process in which one is forced to move back and forth from assumptions to data and vice versa. Actually, when we try to picture this process in a circular manner, it is not difficult to recognize the very core idea of hermeneutic process: "the meaning of the part can only be understood if it is related to the whole" (Alvesson, Mats 2000).
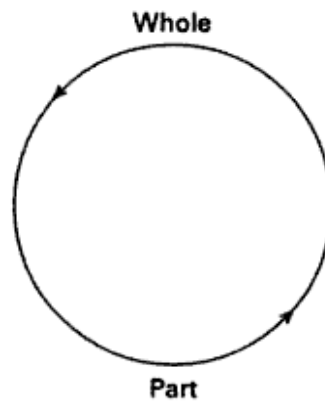
The hermeneutic circle: original version

(Alvesson, Mats 2000)Figure 3.1

Even more precisely, I found the Betti's hermeneutic "canons" as a suitable guideline to describe the process and the pre-assumptions needed to shape my reasoning correctly.

Betti, as stated in Alvesson, Mats (2000), is one of the most influential exponents of the objectivist approach (vs. the Alethic one) and he endeavours to elucidate what are assumed to be the guidelines to correctly develop a hermeneutical discourse. He accomplishes this task through four "canons":

1. *The hermeneutic autonomy of the object*: "*That which is to be understood should be understood in term of itself, of its own immanent standards and criteria, and more particularly of the original intentions behind it*" (Alvesson, Mats 2000) (taking into consideration the background existing behind the object). In my specific case, during my research, a focus has been posed on the fact that the material and the persons interviewed belong to a narrow and peculiar environment making it difficult to objectively abstract their consideration on the topic.

2. *The principle of totality*: It is the respective translation in words of the hermeneutic circle; meaning that an intimate correlation between the part and the whole always exists. Specifically, I put great emphasis in understanding the *actions* (of design process) as a part of a more complex procedure and consequently try to understand the whole process by breaking it down in fragments.

3. *The actuality of understanding*: Understanding usually subsumes a creative act rather than a mechanical mirroring one; it means that a connate bias is always present and this itself is unavoidable due to the fact that a researcher never starts something as a *tabula rasa*. There always exists a preconception that inevitably will lead to create a relative interpretation of a

research's object. It is important to keep this "starting framework" separate from the actual object in any case.

I found myself as a researcher in complete agreement with this canon, given the fact that I started my investigation from a theoretical pre-assumption. Another relevant factor, it is represented by the potential threat of generating a self-sustaining discourse through the fusion of subject-object. I am going to elucidate this peculiar aspect later on.

4. *Adequacy of meaning in understanding*: Nevertheless, it is necessary to reconcile the object and subject through the creation of a bond. This re-enactment can be recollected through the *Verstehen* and the empathy.

I admit that this sort of process has been used in order to gain insight concerning the studied material and at the same time in order to keep a distance from the object (the design process) itself.

Although the bullet points listed previously have played an important role in shaping my approach to the methodology of my research, they are not exhaustive of all the complexities faced during the investigation.

The very first issue actually concerns the decision of following a certain kind of hermeneutic understanding of my process instead of another. As aforementioned, the "objective" hermeneutic school is usually set beside the Alethic one.

In order to provide a wider prospective to the reader on the methodological challenges faced, I will briefly describe the Alethic School.

The basic idea underlying this methodological process can be condensed in the statement that through research one *"reveals something hidden"* (Alvesson, Mats 2000). The hermeneutic circle is kept intact; however the way it is developed differs substantially from the objective school due to the dissolution of the boundaries that divide the object and the subject.
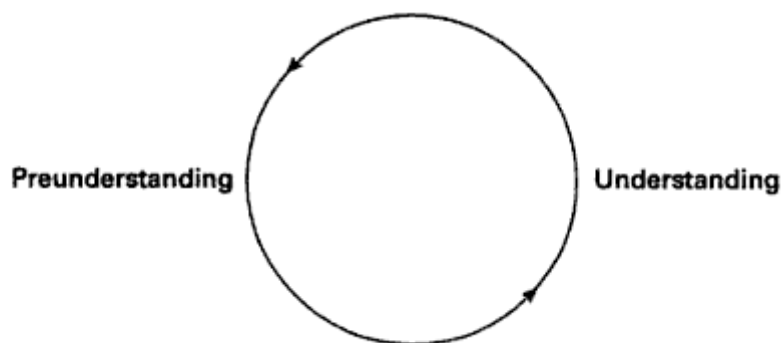
The hermeneutic circle: alethic version

(Alvesson, Mats 2000) Figure 3.2

Although I agree on the principle that there exists a pre-understanding of the reality before the initialization of any object in research, I share the Betti's critique on the fact that the dissolution promoted in this hermeneutic optic can cause an excessive bias in the conduct of the investigation. Keeping a distinction between the object (design process) and the subject (me as researcher) aided me to avoid the generation of a self-sustaining discourse where my pre-framework starting point would have been continually auto-justified by myself (because of the dissolution between me-subject and the design process-object). In fact, not having the chance to gain stimulus from an external source (the object) would have limited my possibilities of shaping my initial idea through a different pattern of analysis.

As stated in the beginning the complexity of the topic demanded me to draw insights from multiple fields, which are not always reachable through the process described by the Alethic School.

In the next section, I am going to describe what kind of reasoning I developed during the process previously outlined.

3.1.3 Philosophical Assumptions 3/3: Reasoning

Being in a definite paradigm and mentally "equipped" with a determined process to follow, still requires a final step to clarify the reasoning within this framework.

At this point, it might be useful to note that the nature of my inquiry not only expresses a qualitative aspect but also an explorative one. I believe it is correct to underline this feature at this stage on account of the content of this section.

I found the task of trying to describe the reasoning process behind an explorative investigation extremely challenging and to outline it in a straightforward manner due to the fact that "making reasons" of data and theories did not follow a step by step path. For this purpose, the classical distinction between inductive vs. deductive is not explanatory of the choices adopted to shape my final analysis.

Bryman (2008) provides a simple and concise overview on both of these approaches and I will briefly schematize the basic idea underlying them. I would not position myself in any of those and I am going to explain my argument later on in this section.

Briefly:

- *Deductive theory*: "*The researcher, on the basis of what is known about in a particular domain and of theoretical considerations in relation to that domain, deduces a hypothesis (or hypotheses) that must then be subjected to empirical scrutiny.*"(Bryman, Alan 2008)
- *Inductive theory: "The researcher infers the implications of his or her findings for the theory that prompted the whole exercise. The findings are fed back into the stock of theory and the research findings associated with a certain domain of enquiry*". (Bryman, Alan 2008)

Given my previous agreement with Betti (that it is not possible to initiate any inquiry and having a mind set as a *tabula rasa)*, I argue that a pre-theoretical framework was present in the first phase of my investigation but could not be considered a finalized theory to test (this aspect is actually underlined in Bryman and Alan (2008) book itself). Although it approximates my approach better, I do not find the inductive reasoning a suitable representation of the process employed during my investigation; in fact, there has been a continuous flow that ranged from theory and data and vice versa (given the explorative nature of the work) making it impossible to allocate my reasoning in one of the two approaches described above.

For these reasons, I suggest that the best way to describe this "continuous movement" is more suitably represented by the Abductive approach that is nothing less than the oscillation ranging from the redefinition and the validation of a theory to a given certain set of data (as well as the other way around). I argue that this kind of reasoning is in line with the hermeneutic circular approach outlined previously.

To facilitate the reader with a comprehensive vision of all those approaches listed before I will use this intuitive picture provided by Hjorth (2010):
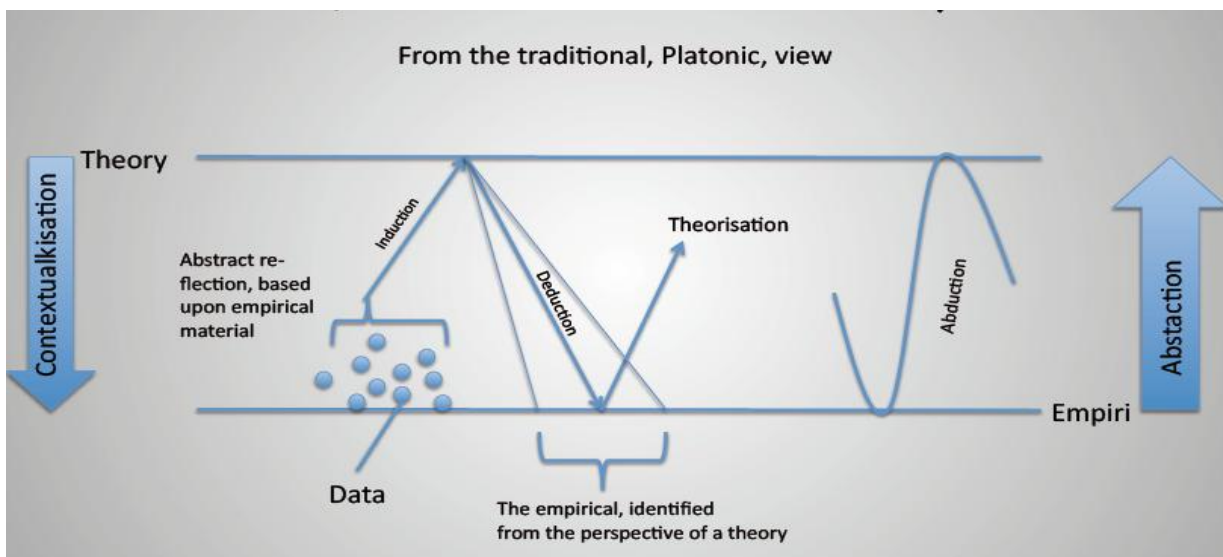
3.2 Methodology

3.2.1 Overview on Research Method

Given those assumptions on the philosophical and paradigmatic position, the method followed to reach a final assessment on the purpose of this thesis has been constructed following different theoretical patterns, not necessarily systematically taken by a single pre-established methodological theory but assembled on the basis of the inquiry's necessities and requirements.

In the first instance, I went through numerous papers and articles related to the main issues of my thesis with topics as varied as the following: design as individual field, business as individual field and their respective interrelation. A literature concerned with the influence that design can produce on business and vice versa does exist, but in order to have a better vision on design field (we humbly take for granted that the business one in itself has been already extensively studied), I moved my attention towards books purely referred to it (often used by Design/business authors). I was forced to take this step because of the enormous fragmentation existing around the design conceptualization within business (this was also one of the main reasons that led me to focus on a more suitable comprehension of this topic).

In order to properly investigate a process that does not belong mainly to any of the field of interests, I decided to start from an empirical basis and attempted to gather material for the sake of it. The point was to be as impartial as *possible* in the gathering phase and try to activate a codification work only in a second moment.

I did not have the possibility to access an enormous quantity of data and the reasons are as follows:

- The field of inquiry and the theoretical delimitation of the argument are relatively narrow and new; direct consequence of this fact is the improbable chance to get "ready- made" material regarding the topic.
- The second reason associates itself to a methodological issue. In the following research we are not trying to establish a trend or testify any hypothesis, in which case it would have required "a coherent sample" for drawing any acceptable conclusion. The aim of the investigation is the creation of a generalized statement and not the pooling of data for checking statistical frequencies (Yin, Yin Robert 1989). Therefore, I am convinced that in this situation limited but relevant empirical material can better fulfil the task compared to a randomized and extended sample. For this purpose it has been necessary to use multiple sources of evidence.

3.2.2 Case Based Approach

One of the sources that I decided to employ in my investigation is case studies. The reason resides in the fact that they provide a wide range of information regarding companies that may appear interesting but difficult to access. Furthermore, the explorative purpose of my research question fitted perfectly the necessary pre-assumption needed to choose a case based strategy approach instead of a different one. To justify my position I will provide to the reader a brief summary conceptualized by Yin Robert (1989) on the potential different strategies to adopt:

Strategy	Form of Research Question	Requires Control of Behavioral Events?	Focuses on Contemporary Events?
Experiment	how, why?	Yes	Yes
Survey	who, what, where, how many, how much?	No	Yes
Archival analysis	who, what, where, how many, how much?	No	Yes/No
History	how, why?	No	No
Case study	how, why?	No	Yes

Figure 1.1 Relevant Situations for Different Research Strategies
SOURCE: COSMOS Corporation.

Those strategies should not be taken as "mutually exclusive". Of course they can be utilized in a sort of dependent or reciprocal manner; it is important to underline that some of those are more suited to fulfil a certain task. In the case study situation:

"A "how" or "why" question is being asked about a contemporary set of events, over which the investigator has little or no control" (Yin, Yin Robert 1989)

Moreover, I could not help to foresee an interesting match between my necessities and the technical definition of case study strategy (Yin, Yin Robert 1989)

"A case study is an empirical inquiry that:

- *Investigate a contemporary phenomenon within its real-life context; when*
- *The boundaries between the phenomenon and the context are not clearly evident; and in which*
- *Multiple sources of evidence are used"*

Eisenhardt (1989) provides some interesting insights in "how to generate theories" from case-study based research, describing step by step what the different stages are to create a solid theory from a

case-based approach. Although I inevitably share some part of my entire process of writing this thesis with both the ones described by the authors (Yin, Yin Robert 1989, Eisenhardt 1989), I decided to rely on them more as inspirational methods than definitive ones.

In fact, part of the information found in the cases did not resolve to be relevant because of the narrow spectrum of my research question which is more focused on process and business implication. This approach allowed me to literally build a potential general process with different information originated from different sources. Those pieces assembled together will be used to support the model that I am going to develop in the analysis.

I found the self-assembled process more suitable for my case because of the explorative and open-ended nature; this also made it possible, when necessary, to adjust the theoretical implication and the findings in accordance with the requirements of research. In fact, Eisenhardt (1989) herself explains how important it actually could be to adopt this kind of behaviour when it is necessary to deal with theory building in case studies.

"Thus, if a new data collection opportunity arises or if a new line of thinking emerges during the research, it makes sense to take advantage by altering data collection, if such an alteration is likely to better ground the theory or to provide new theoretical insight. This flexibility is not a license to be un-systematic. Rather, this flexibility is controlled opportunism in which researchers take advantage of the uniqueness of a specific case and the emergence of new themes to improve resultant theory."(Eisenhardt 1989)

3.2.3 Elucidation on Interview conduct

As stated in the previous section, multiple sources of evidence have been employed in order to support the creation of explorative work. The most intuitive and accessible source was interviewing relevant people within the field of product creation in design companies.

In this section concerned with methodology, I am going to outline the steps followed to conduct interviews; I will leave all the details regarding the persons/places/contents in the "empirical material" section.

Interviews have been conducted in a semi-structured manner, with open-ended questions. The *target population* (relevant respondents) (Oishi, Sabine 2003) had been selected on the basis of the following hierarchical criteria:

1. Relevance in the field
2. Availability

3. Homogeneity

I cannot hide the fact that there have been some complexities in reaching respondents involved in this field due to their lack of time and busy schedule.

There was a pre-set list of questions that had been expanded or restricted on the base of the evolution of the interview itself. **(See appendix 1)** The duration of the interviewed varied on the availability of the interviewees but an arc of time that ranges between 30 -60 min should be considered. In order to list my questions I took inspiration from DiCicco-Bloom (2006), following these guidelines:

- The first questions are typically broad in order to make the interviewee more comfortable
- Some questions had been repeated in a different manner in order to be sure that there was not any evident bias due to chosen words
- Unplanned questions arose during the discussion

Furthermore, I preferred not to talk about the idea and the implication of my investigation with the interviewees in order to keep their thoughts as unbiased as possible. For ethical reasons and transparency I informed them afterwards. I have to admit that I gathered some critical answers following this process and in the analysis those will lead to some critics related to my inquiry.

3.3 Reliability and Validity

At this stage of Methodology some critical thoughts regarding the procedures followed are required.

Although the two terms stated in the headlines seem to belong to quantitative method analysis they also need to be discussed when the researcher faces qualitative issues if an attempt to address the work in a credible manner wants to be pursued.

A possible definition:

"Reliability refers to the degree of consistency with which instances are assigned in the same category by different observers or by the same observer on different occasion" (Silverman, David 2001)

There is a controversial discussion regarding the fact that reliability should not be questioned in qualitative research because of the impossibility in reproducing an observation in the exact same setting that has been recorded. One major argument is represented by the fact that given the

processual nature of the world and its continuous flow, it is impossible to gain any stable properties from the social world (Silverman, David 2001). Even if this diatribe might find some sort of factual foundation, it is possible, using a thorough carefulness towards evidences' gathering, to make an attempt in building a reliable and valid qualitative research.

One possibility of accomplishing this standard is represented by the so called "low-inference descriptors", which involve:

"recording observation in terms that are as concrete as possible, including verbatim accounts of what people say, rather than researchers' reconstructions of the general sense of what a person said, which would allow researchers' personal perspective to influence the reporting."(Silverman, David 2001)

Regarding interviews, for example, I am perfectly conscious about the potential bias present in the formulation of my questions but I tried to reduce this "personal influence" in two instances. Firstly, as described in the previous section I avoided to present my research ideas to my interlocutors in order not to indirectly guide their answers and thoughts. Secondly, I tried to follow the "low inference descriptors" listed by Silverman as thoroughly as possible (Silverman, David 2001) concerning the interview materials:

- Tape-recording all face-to-face interviews
- Carefully transcribing these tapes according to the needs of reliable analysis
- Presenting long extracts of data in your research report – including the question that provoked the answer

Silverman treats also the aspect of *validity* under the lens of social studies.

"By <u>validity</u>, I mean truth: interpreted as the extent to which an account accurately represents the social phenomena to which it refers" (Silverman, David 2001)

Given the fact that the definition of statistical validation is not suitable to test the truthfulness of statements in social sciences due to the different nature of the purpose and the data*, type 1 error* (Believing that a statement is true when is not) and *type 2 error* (rejecting a statement when is true) do not represent a correct choice to define a qualitative research as valid.

An alternative way to precede in order to asses a certain validity of the investigation can be found in the *triangulation* process (Silverman, David 2001, Yin, Yin Robert 1989).

One of the major advantages in using triangulation is advocated by Denzin (Silverman, David 2001); he points out that:

"The participant observer is not bound in his field work by pre-judgment about the nature of his problem, by rigid data-gathering devices, or by hypotheses"

One could argue that a pre-theoretical framework has been developed in order to enhance the present work, but it is useful to remark that this sort of "theoretical pre assumption" by no means has been used to justify my statements; it has been employed only to set the direction of the investigation.

Triangulation involves the use of different sources of evidence (in my case, interviews, cases, theories) to corroborate the investigation's findings. This method has been followed throughout all the thesis research in trying to establish a dialogue between different sources of evidence.

This kind of validation can be subject to critique because counterposes different contexts to a situation that is characterized by a context-bound nature.

In conclusion, a perfect validation method has not been developed yet but having the self-consciousness of the potential threats that can mine the reliability and validity of an investigation should be at least considered a partial deterrent to reach hasty and unjustified conclusions.

4. Theoretical Framework

4.1 Theoretical Framework Structure

In the present section I am going to provide the "theoretical pieces" that will sustain my argumentation later on in this thesis. The need of proceeding in this direction is dictated by the fact the <u>analysis</u> itself will follow the exact same structure presented here; in this way, I believe that it should be easier for the reader to follow the entire development of the process that I am trying to study/develop and, at the same time, to confront how those two sections will activate each other in order to reach a proper conclusion.

Thus, the sketch reported here should be intended as a mental guideline to go through this section. It will be divided into four parts connected on the base of a sequential consistency.

Design → Product Design Methodology → Hermeneutics → Business

[Figure 4.1]

As I extensively justified previously, in order to reach a proper development in my study of this process involving design, the support of several disciplines was needed. I am going to briefly describe what each section is going to address.

1. *Design*: I will try to provide an overview on design as a discipline *per se* in order to understand how it is academically perceived. This is also going to be relevant to test the existing discrepancy between the literature and whom is involved with it on a daily basis.

2. *Product Design Methodology*: This section will try to elucidate the possible ways to interface reality in order to understand the process and the extent of information that one

can obtain from it. This will be relevant in order to try to systematize the process in a logical and understandable manner.

3. *Hermeneutics*: It will be concerned with the meaning of this understood reality. I will try to adapt some general concepts to my specific case and see if this operation can provide a better understanding of the "meaning transferring process".

4. *Business*: The final section will describe some of the best known business applications that involved design. I will use them as "litmus paper" to see if they might benefit, or not, from a clearer understanding of design process.

4.2 Design Definition

"Design is to design a design to produce a design"

(Heskett, John 2002)

The well-known, apparently nonsensical, sentence provided by Heskett is a good starting point to underline two aspects, in order to emphasize the potential meaning already instilled in the word "Design":

1. The multiplicity of uses that the word "design" itself can assume in relation to the function that we assign to it.
2. The complexity in having a univocal shared vision on what is design in itself.

Heskett provide his own definition, stating that:

"Design can be defined as the human capacity to shape and make our environment in ways without precedent in nature, to serve our needs and give meaning to our lives".(Heskett, John 2002)

In the aforementioned quote, Design is intended as an active "action" that prescind from an ontological existence *per se* and acquires a meaning only when employed to shape nature (that can be considered everything that surround us). Heskett (ibid.) emphasizes this aspect throughout his entire book, presenting the various professional figures involved in the different "branches" of design creation (graphic designer, interior designer product designer, etc...). One could say that designers can be better identified when they are employed in an active shaping of a certain part of reality. The reason behind this fragmentation, the author sustains, is due to the non existence of a solid "body knowledge" as foundation for this discipline and an extensive presence of "tacit knowledge".

Design can be intended in two ways (Heskett, John 2002):

1. "Form follows function": it is a teleological vision; the shaping of an object (broadly speaking) is dictated only by the necessity of making that exact same object easier to use.

2. "Form follows fiction": human creation cannot be reduced to a mere research based only on the utility aspect. The inspiration provided by dreams and aspirations is a fundamental component with important practical implication.

I found it relevant to underline those two different aspects because they have an interesting parallelism with the business application of design and the perception possessed by professionals in the field. The former and the latter statement will be better investigated in the analysis section.

As the reader could imagine, there exists an unquantifiable number of different definitions about design and this is due to the reasons mentioned above; this thesis does not aim to find the final "true" definition of design, instead, what is relevant is the process that underlies a specific aspect of it (product creation). Therefore, a further discussion on what is the right way to define design would just be redundant and out of place. As the reader will notice in the analysis, a divergence in definition is still very present nowadays and it would be out of this report's reach to provide a final assessment on this point.

4.3 Product Design Methodology

4.3.1 Design Methodology: potential processes

Methodology concerned with processes observable in nature has been thoroughly analyzed by the lens of "methodology of science". When it becomes necessary to describe a process that involves two different domains (nature and human), like the design methodology does, I argue that it is necessary to widely draw on both the contribution that those subjects provided in their own fields of research.

Design aims to shape the environment and attempts to follow a certain reasoning pattern to accomplish this goal. In this case the mental world and the tangible one are continuously interrelated in a mutual inter-exchange/clash between the impressions received by the brain and their actual feasibility.

Roozenburg & Eekels (Roozenburg, Roozenburg N.F.M 1995) distinguish two main directions:

- One process that is directed from the outside (reality) to the inside (brain) provides mental images of the reality existing outside of us.

- Another process is directed from inside (brain) to outside (reality) and attempts to affect the reality in order to shape it.

The first process is called "knowledge acquisition" and is systematized through scientific knowledge; the second is called "action" and expresses itself through technology (Ibid.).

Two other processes should be considered in order to complete the picture. The pure reasoning that takes places entirely in the mind of individuals and the continuous transformation process that characterizes nature (the latter is totally detached from any kind of human justification and teleological understanding).

Although the distinction between science and technology plays an important role, this does not imply that they should be left separated when it becomes necessary to establish a dialogue. Design requires a strict methodological collaboration between those two domains in order to become profitable and to make its shaping's ability concrete.

4.3.2 Design reasoning patterns

In order to get a chance to describe the complex process of product creation, gaining an insight on the different reasoning patterns that characterize the design process approach might be useful.

As stated above, design is mainly a problem solving process in which humans try to shape nature to satisfy certain needs. In order to provide a clear framework, different reasoning patterns will be presented and each of those will have a peculiar process; although some authors sustain that one should be preferred to understand design process instead of another (Roozenburg, Roozenburg N.F.M 1995, Dorst 2011), they will be used to reach a final assessment in the analysis without preventing any of them to be potentially relevant.

4.3.2.1 Deduction

Deduction is a logically valid form of reasoning. It starts from a theoretical premise and tries to testify it. If the premises are true, the conclusions are also true (Roozenburg, Roozenburg N.F.M 1995). As someone can foresee, the most problematic issue of this kind of reasoning is represented by the truthfulness of the premises. A second problem is related to the incorrect reasoning itself that can be deceptively employed to reach the conclusion. Deduction is used to infer a particular statement from general one.

To further simplify this concept and make it more relevant for the design process, I will use the following schema employed by Dorst in Design's process elucidation (Dorst 2011)

$$\text{WHAT} \quad + \quad \text{HOW} \quad \text{leads to} \quad \text{???}$$

So to speak, we know the actors (WHAT) and their working principles (HOW); if we know that the way they work is true, we can predict the outcome of this symbolic equation.

4.3.2.2 Induction

From a logical point of view induction is not a valid form of reasoning. It is sufficient one counter example to falsify the initial premise although the large quantity of evidence that can be brought up to support the hypothesis. Induction starts with a particular observation and ends with a more general statement. The process to get from particular to general is not systematically formalized and involves a certain degree of creativity (Roozenburg, Roozenburg N.F.M 1995). Also if it is discouraged, this approach is allegedly followed in a creative process and therefore should be taken into consideration when conclusions want be drawn on creative processes such as the one concerning design.

The creative instance is related to the hypothesises' formulation, subsequently testified through deduction (at least in the scientific field). The two forms of reasoning just explained are complementary to predict and explain events (Dorst 2011).

$$\text{WHAT} \quad + \quad \text{???} \quad \text{leads to} \quad \text{RESULT}$$

In this case, we know the object/thing (WHAT) and the result that can accomplish (RESULT); we need to understand HOW this process actually happens.

4.3.2.3 Abduction

Both the authors (Roozenburg, Roozenburg N.F.M 1995, Dorst 2011) agreed that the reasoning patterns presented above are not consonant to properly describe the Design process reasoning. I decided to provide their explanation in any case for two reasons:

- In the first instance, to give the reader the proper basic elements for a further understanding of this section.

- In the second instance, to provide all the theoretical elements to activate a critical thinking not necessarily steered by my argumentation.

Said so, the complexity of design process led us to use two further approaches, less simple and more difficult to articulate in a finalized and systematic manner.

However, it seems that the most accredited way to describe the "design production" is provided by abduction reasoning though.

In a very simplified manner abduction can be defined as the process that goes from theory to a certain set of data and vice versa in order to validate the initial theory.

Dorst refers to two different kind of abductions' reasoning:

Abduction1: we have a certain conclusion (Meaning/VALUE) and we know how to reach it (HOW), but we need to discover the "object" (if we talk about product) apt to fulfil those requirements:

$$??? \quad + \quad HOW \quad \text{leads to} \quad VALUE$$

Abduction 2: In this case, we only have our conclusion (VALUE); the procedure to reach it (HOW) and (WHAT) the object that better fits this goal is still unknown (This pattern can be used to describe conceptual design) (Dorst 2011)

$$\begin{array}{ccccc} ??? & + & ??? & \text{leads to} & VALUE \\ \text{(thing)} & & \text{(working principle)} & & \text{(aspired)} \end{array}$$

4.3.3 Paradigms

In order to explain a key passage of my final analysis, the use of theories concerned with paradigms in science is required.

I will try to establish a parallelism, as it has been done for reasoning patterns so far, extrapolating few concepts from science discoveries' theories. At this stage, it is fundamental to inform the reader that the aim of this intellectual operation is only directed to reach a better comprehension of my investigation through the use of different tools. It is obvious that one should be aware of the clear

distinctive features existing in science discourse and in the design one. This aspect should not prevent to employ findings concerned with a certain subject (science in this case) in to a different setting (design process), if the right precautions are taken.

What one may notice from the presentation of the precedents patterns is the existence of a common denominator in all the "equations" (except the deductive one) that is represented by VALUE.

I would argue that if the VALUE is sought within a certain set of rules (i.e. a certain hypothesis on how the world is conceived), it belongs to a certain *Paradigm*.

Paradigm is defined as:

- "A pattern or model, an exemplar" (*The Oxford English dictionary. Vol. 1-20.* 1989)
- "universally recognized scientific achievements that, for a time, provide model problems and solutions for a community of researchers"(Kuhn, Kuhn Thomas 1970)

As stated in Sismondo Sergio (2009):

"The theoretical side of a paradigm serves as a worldview, providing categories and frameworks into which to slot phenomena. The practical side of a paradigm serves as a form of life, providing patterns of behaviour or frameworks for action."

If we suppose that a VALUE is conceived in certain Paradigm, the latter will affect the way this value itself is acknowledged and further more how it will be develop and concretized (HOW + WHAT).

Moreover, Kuhn argues that the possibility of a "shift in Paradigm" exists when a certain set of facts failed to be explained by the current Paradigm, thus making possible for a group of scientists to create a new one that will be able to give meaning to those inexplicable events.

 An issue concerning "incommensurability" exists between the old and new Paradigms due to incommunicability and incomparability (Kuhn, Kuhn Thomas 1970). I am not going delve further into the debate about this aspect because it is not consistent with the rest of the research.

In the Design field it might be possible to assimilate this discourse when one thinks about the eventuality of a disruptive product creation (usually related also to a technological one) that allows a change in meaning/Value (which usually is the final factor of our equation, except for deductive reasoning) and that consequently will provoke a shift in paradigm in which this meaning was used to be understood, misunderstood or not acknowledged at all.

Feyerabend adds an interesting reflection regarding the Paradigms' issues. The mentioned philosopher was extremely critical against falsificationism as proof of evidence for validating new scientific theory in the optic of the older ones. The latter holds an evident advantage because it has already proved to work for explaining a certain set of events. The choice of a theory instead of another belongs to an aesthetic choice rather than a functional one, he says (Feyerabend, Paul 1979).

In this optic there does not exist a proper normal science, neither does there exist an accredited method to evaluate a scientific theory. The best way to condense science progress should be represented by the statement "anything goes". This should not be considered as a principle, but as a matter of fact that everything can be used in order to interpret the reality in a different way (from the myth to the bible) and nothing should prevent the scientist (talking about science) to employ any source to make an attempt to take a step forward in the understanding of the world (Feyerabend, Paul 1979).

Reconciling this critique in the Design field one could argue that the aforementioned Value can be subjected to a radical reinterpretation due to the multiple sources that can affect it. I believe that the "anything goes" instance is even more present in design methodology because of the evident non-existence of an accredited all-embracing explanatory model among the experts in the field. It is indubitable that, with a certain cadence, there is a product that sets some standards and tends to uniform all the factors of our equation (WHAT + HOW =VALUE). A simple example can be represented by Apple and how the iPhone set a new standard for smartphones in general. In this case, only people able break this "standard" (using any mean or *stimulus*) are able to make a shift that can turn upside down not only the paradigm (based on a certain value) but the value itself. Changing the value also means changing the meaning that people assign to the product, making it possible to reconsider well-established pre-conception of a certain usage and shape. Drawing a conclusion, one could say that VALUE plays the impulsive role in setting the path for shaping the HOW and WHAT factor of our reasoning. A new understanding of VALUE can be the cause of a changing in paradigm and, in a business sense, the chance of creating a disruptive and innovative product.

4.4 Hermeneutics

As the reader might have noticed, in the previous section, a great emphasis has been placed on the common denominator of the potential reasoning patterns. I would argue that VALUE plays an

ambivalent role within the design creation process and the final "recipient" of this process itself: the consumer. I cannot help but foresee the crucial link that this factor generates between those two actors (designers – consumer) and how its nature and purpose are different if compared with the respective point of views of our two interlocutors.

For designers, value (or meaning in order to accord it with most of the business literature) represents the inspiration and, at the same time, the achievement when a new product is created. For the consumer, it represents (and literally represents) a meaning that is the very first contact with the product itself (taking into consideration the visual aspect too).

Hermeneutics (defined as the art of interpretation) can be helpful in order to provide an idea on all the complexities related to this relatively short but intense moment that characterize the encounter of the creator (designer) with the end-user/interpreter.

In the Gadamerian hermeneutic of text interpretation, an interesting discussion concerning the intellectual engagement presented between creator and listener can be found. In Gadamer's point of view the meaning of a given text or a piece of art (design product, in our case) is never fully achieved and is always in an evolving process. This is mainly related to the fact that instances generated by listeners are never abstracted in a context of a pure uninfluenced judgment, but are always conditioned by a certain set of immanent historical contexts (Gadamer, Gadamer Hans-Georg 1975). In this sense, even though a meaning can be attached to certain artefact this will be continuously reinterpreted by a change in meaning dictated by the passing of the time (inasmuch as the historical context), making it possible to reconcile its validity in different periods, but also to maintain its initial integrity and peculiarities.

"The real meaning of a text as it addresses the interpreter does not just depend on the occasional factors which characterize the author and his original public. For it is also always co-determined by the historical situation of the interpreter and thus by the whole of the objective course of history ... The meaning of a text surpasses its author not occasionally, but always. Thus understanding is not a reproductive procedure, but rather always also a productive one" (Gadamer, Gadamer Hans-Georg 1975)

Moreover, Gadamer underlines a second issue regarding the "meaning attaching process" (from the creator of a product to its creation, in our case) that seems to be unavoidable. The creator of a text or piece of art (i.e. product) usually pursues a specific meaning ("original intention") that is systematically missed by the listener (consumer). This happens because the object's meaning cannot be given *a priori*; it gains its meaningfulness in the moment that a dialogue is established

between the listener and the creator (Gadamer, Gadamer Hans-Georg 1975). Under this lens meaning cannot be separated from its application and, as stated before, it will acquire a certain "sense" only in relation with the use and the understanding that the consumer will make out of it.

As a consequence, the consumer is the final judge of an artefact and from the understanding that the latter will grasp, it can depend its success. On the other hand a misunderstanding of a certain product in a given context can be seen as a contingent situation and nothing prevents the possibility of a new reinterpretation, and therefore a success of the initially misunderstood product.

Nevertheless, it is important to notice the possibility that the process of co-production in meaning might lead to a meaning's creation that goes beyond the very original intention of its creator, reinventing the purpose and the understanding of the product itself.

4.5 Business

In this section, examples regarding the contamination put in place between design and business will be presented.

As stated in the introduction, with the passing of the time and the increasing demanding requirements imposed by markets' rules and clients, design provided some interesting answers in order to cope with the aforementioned issues regarding products and processes. Needless to say that business tried to use those peculiarities inherent to design as a competitive advantage.

A remarkable trait of the role played by design is situated in its progressive adaptability in answer not only to needs (as one could think) related with form/shapes but also with meanings and values (as said before, form follows function but also fiction). Before immerging in the use that business made out of design it might be interesting to see how its relation with industry evolved with the passing of the time. For this purpose I will use a resumptive table adapted by Gotzsch ((2000) cited in (Claudio Dell'Era, Alessio Marchesi et al.)

	FUNCTIONALISM	AESTHETICS	SEMANTICS
1900	**Form follows function** *Louis Sullivan – USA* 1896		
1910			
1920	**Industry Minimalism** *Bauhaus – Germany* 1919 – 1933		
1930		**Streamlining** *Raymond Loewy – USA* 1930s	
1940			
1950	**Germany Functionalism** *Ulm School – Germany* 1950 – 1968		
1960			
1970		**Theory of product language** *Jochem Gros – Germany* 1970s	
1980			**Memphis** *Ettore Sottsass – Italy* 1981 – 1988
1990			
2000			

Source: Adapted from Gotzsch (2000)

In the next section, I would like to make a basic distinction about how the difference between radical and incremental innovation should be intended, before presenting some models that made the collaboration between design and business their core value.

4.5.1 Radical vs. Incremental innovation

Although it might appear intuitive I would argue that defining correctly the terms that are used in a discourse can significantly improve its comprehension.

Tidd & Bessant (2009) wrote one of the most authoritative book regarding innovation management and they made a general distinction between companies that follow an incremental innovation process and others that follow a radical one. A certain focus is also placed on the consequences that disruptive events can generate in the market; most of the differences in the definition mentioned in the title actually reside in the outcome that the market's players are able to achieve.

When we talk about incremental innovation we can substantially condense the entire approach in a *motto* of few words: "Doing what we do but better" (Tidd, Joseph 2009). It is difficult to provide a general idea given that the authors also tend to provide examples rather than definitions, however substantially speaking (independently, if we talk about product, paradigm, process or position) we might acknowledge this approach as respectful of the current market's paradigm and focus on resolving small problems or issues regarding already well-accepted products (or else) (Tidd, Joseph 2009).

When we talk about Radical innovation, needless to say that we are referring to the opposite category. Products (or else) that can be categorized under this label are usually "game-changer" and only because of their existence are able to profoundly reframe the "rules of the game". So to speak, we could refer to their effect as the Schumpeterian "creative destruction" (Tidd, Joseph 2009).

Returning to our field of investigation companies tend to keep this basic distinction in mind, and in order to cope with market's demands they decided to take a step forward trying to employ design as a relevant source for answer to this "innovation challenge".

In the next section, two models will be compared and it might be objected that one is more focused on incremental, rather than radical innovation. As Tidd and Bessant state: "Novelty is very much in the eye of the beholder" (Tidd, Joseph 2009);therefore, I am going to dispense my judgment from answering the question about the existence of an objective radical or incremental innovation, because it is not the right place to do it and I do not have the authority to reach a final assessment.

What matters for me the most it is that the reader is provided with a clear distinction of those two terms, because business literature makes an extensive use of them and the models that I am going to describe are not exempted.

4.5.2 User-Oriented Design

Of course design is relevant for innovating products *per se* and this is a crucial feature for companies; however, when we talk about employing design to innovate and create new meanings those should not be sought solely in product itself. The design process that represents the main theme of this investigation can extend its use for achieving other purposes within business. Needless to say that this collateral thinking is usually translated and reified in a new product.

Studying the needs of the final users of certain products is one of the major concerns for designers and business itself. As stated before, a technological part is needed when the potential of

discovering a new ground breaking product arises; most of the time there exists issues related to the acceptance of a new technology (and its usability) in the consumer's lives. User-oriented design poses its focus exactly on this issue; so to speak, trying to unfold the complexities deriving by the release of an unfamiliar and unknown technology embedded to a product.

''To the practitioner of human-centered design, serving customers means relieving them of frustration, of confusion, of a sense of helplessness. Make them feel in control and empowered.''

Norman (2004, pp. 92–93) cited in (Veryzer, Borja 2005)

Design approaching users' needs has been discussed in multiple theories often referring to same principles but with different names:

- Human-Centered Design
- Customer-Centric Design
- User-centered Design

In a faster and more innovative market, the emergence of a new technology might create some difficulties regarding the "acceptability", while an excessive focus on market's research and consumers' requests may lead to a "mental closure" towards a new scenario for new product creation (Veryzer, Borja 2005). Design should be in charge of mediating both those forces and try to nurse acceptance and feasibility, not only through the *understanding*, but also through the identification of customers *unrevealed needs*.

In the "innovation management literature" a great focus has been placed in the creation of models able to provide answers to keep up with the complexities of idea generation and sustainable creation. One of the best known and used is the so called "Stage-gate Model" (Copper, 1998).

Due to the length and extension (and the relative poor relevance) required by the explanation of the aforementioned model, I will not explain it in detail. On the other hand, in order to offer the reader the chance to fully appreciate what the most peculiar differences are in a model conceptualized in a context of innovation management and one contaminated by design; I will borrow this intuitive table adapted from Vredenburg, Isensee, and Righi (2002, p. 2) cited in (Veryzer, Borja 2005)

Table 2. Comparison of User-Centered and Traditional Approaches[a]

Traditional Approach	User-Centered Design
• Technology driven	• User driven
• Component focus	• Solutions focus
• Limited multidisciplinary cooperation	• Multidisciplinary team work
• Focus on internals architecture	• Focus on externals design
• No specialization in user experience	• Specialization in user experience
• Some competitive focus	• Focus on competition
• Development prior to user validation	• Develop only user validated designs
• Product defect view of quality	• User view of quality
• Limited focus on user measurement	• Prime focus on user measurement
• Focus on current customers	• Focus on current and future customers

In order to make it clear that this is not an ideal conception but a factual reality, I will just mention IDEO, who are one of the leading consulting firms making an extensive use of User-centered approach, employing it as the vessel of their unique and distinctive way of innovate.

An interesting debate in whether or not *the user* should be the fulcrum of design investigation is still open and the next section is going to present a model that abandons this idea in favour of a different one.

4.5.3 Design-Driven Innovation

"The etymology of design goes back to the Latin de + signare and means making something, distinguishing it by a sign, giving it significance, designating its relation to other things, owners, users or gods. Based on this original meaning, one could say: design is making sense (of things)." (Klaus Krippendorff, Design Issues, 1989 cited in (Verganti 2009))

The first step to grasp Verganti's theory (design-driven innovation) resides, in the first instance, in understanding what the defnition is that has been given to design in his particular approach. As Verganti himself declared (and the present work did the same), the definition of what "design" represents is always complex and seldom smooth, making theories that refers to it sometimes deceptive and blurry. In our case the citation above conveys perfectly in which direction we should interpret the defnition of design. In Verganti's case design is the process of giving "*meaning* to things" and this constant research will be a conspicous part of the design-driven apporach.

Verganti's approach represents a drift away from the position of the user centered innovation process presented previously. In his point of view, positioning the *users* as the focus *par excellence*

in order to capture signal of innovativenss is an evident *fiasco*; he argues that clients/users will never be able to understand what will be their next desire because they can only codify the already existing market's offers (Verganti 2009). The only chance to innovate through a user centered appraoch can lead exclusively to an incremental improvement and never to a radical one. The reason why users cannot give new meanings to the exsting contest is connected to the fact that they do not have the tools to challenge it with a new idea. This intution is not "completely new", other prominent persons like Henry Ford had the same feeling about this internal impediment of users.

"If I had asked people what they wanted, they would have said faster horses." Henry Ford

Thus, one can state with some certainty, that searching for new meanings is a fundamental part of the theory; who is in charge of this complex research is another major issue. In Verganti's point of view the number of people that can "question the contingent meaning of reality" is not a relevant factor, so to speak, the *quantity* of ideas does not necessarily represent a valid source of inspiration (brainstorm); on the other hand, *who* are those people is absolutely crucial for succeeding in this complex research. Therefore, instead of the quantity, the focus should be placed on the quality of ideas, being sure to carefully gather those inputs not from "million of interpreters" but from *key interpreters* (Verganti R. , 2009).
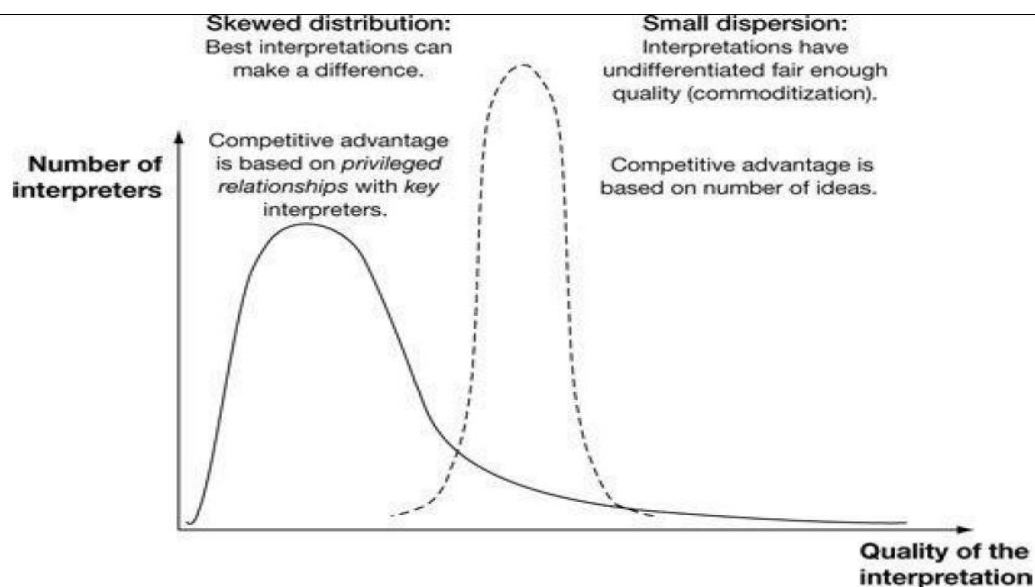

Figure 7-3 (Verganti 2009)

It may be important to clarify that those experts should not necessarily be the most prominent representatives of the area of expertise that one is looking for. The important aspect is that they should act like a broker of a language that is usually expressed through signs and symbols. Steve

Jobs, for example, decided to hire Jonathan Ive for designing his new iMac, even though he was an independent designer of household products (Verganti R. , 2009).

Alessi gave us another clear example of the fact that those "key interpreters" should not be confused with the most influential/famous experts already present on the market. When the firm contacted Michael Graves he was still not well known but eventually he designed one of Alessi's best selling products (Keetle 9093) (Verganti R. , 2009). It could happen quite often that those people are "outside the main network" because they are conducting a study on issues that the current "cultural thinking" cannot quite grasp yet (the problem of reasoning in the existent paradigm, stated before); others, more well known, could have exhausted their capacity to foresee the future trends (The Memphis circle was dismantled after 7 years nevertheless they contributed enormously to a new idea of mass products).

Being able to identify the relevant interpreters is only the premise to a process that involves, besides them, another character: the Manager.

Although we have discussed design as far as now one cannot forget that there must be a sort of economic application for this process. The Executives do in fact play a role that is crucial to successfully implementing a design-driven innovation process. It is important to underline the fact that we are talking about "a process" and not about an extemporaneous event that happens because of a sparkle of creativity generated by those "external genius" (Verganti R. , 2009). In order to be successful then, the manger must have some capabilities that are strictly related to the managerial world: relational assets with key interpreters, internal assets (your own knowledge and seductive power), and the interpretation process (Verganti R. , 2009).

This is one of the main differences between the Verganti's theory and classical user centered one. The Manager should not act as a creative interpreter. In other words, the Manager should not attempt to be creative in an artistic sense; on the contrary, he should carefully implement three steps (Listening – Interpreting – Addressing) in order to ensure the proper ecosystem and make innovation flourish.

A synthetic and effective overview on the whole process is given by the following sketch:
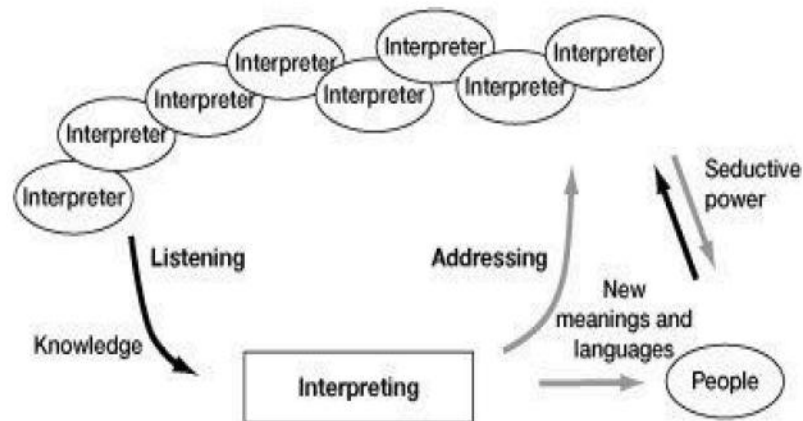
The process of design-driven innovation

Figure 6-3 (Verganti R. , 2009)

It would be too bold to admit that a change in meaning can occur independently from the physical product embedded to it. I am not saying that a shift in meaning is not possible for existing products, an evident counter example would be immediately offered by the fashion industry that periodically adopts this kind of incremental innovation in meaning.

On the other hand, it is fair to say that a radical innovation in meaning is often connected to a radical technological breakthrough. Everybody is aware of the extreme importance that has been given by the managerial literature to the crucial role played by technology in providing innovation. Through Verganti's eyes one can see how a new revolutionary technology can be useless if not interpreted in the right way. Apple with iPod demonstrates how the existence of the MP3 player itself didn't automatically generate a flourishing market and this happened mainly because of the absence of a new meaning for this device. Nintendo, with its console Wii, shows how the proper use of a breakthrough technology can completely revolutionize the "gaming concept" and how costly it can be for competitors failing to spot new trends at the right moment (the MEMS technology was submitted to Microsoft in the first instance) (Verganti R. , 2009).

Those two innovations can be declared, as Verganti says, "technology epiphanies" (Verganti R. , 2009). In the matrix proposed in the book, those kind of breakthrough represent a shift in meaning and technology (Verganti R. , Designing Breakthrough Products, 2011) and therefore it is possible to position them in the top right spot of matrix; this scenario represents the best possible one in terms of design-driven innovation strategy approach.

The interplay between technology-push and design-driven innovation
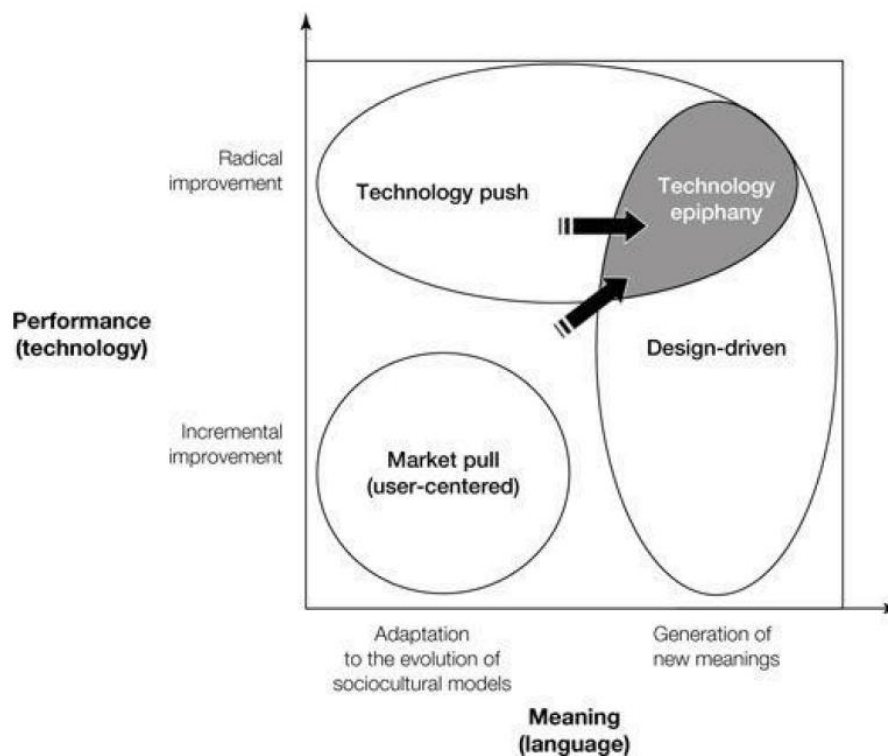
Figure 4-1 (Verganti R. , 2009)

One could ask if in terms of economic factors like costs or ROI this kind of strategy really pays off. Apparently, the return that you can get in acting like the first mover in creating a product with a longer life cycle (Fiat Panda is an example (Verganti R. , 2009)) should largely cover the related investment. The main reason is that, besides the prototyping and the "maintenance of the network" costs, the impact of expenditures is relatively small compared to the expected return in terms of profits. The difference with a classical business model is that a great part of the price is imputable to the intangible value that is intrinsic to those products. People will be more than willing to pay a "premium price" for a hidden meaning that was in some way rediscovered through this psychological and intellectual process (Verganti R. , 2009).

Moreover, this kind of "distinctive mark" is a sign of trustworthiness and authenticity, which allows the firm to make it extremely difficult for competitors to keep up in a field that is often "border line".

5. Empirical Material

5.1 Overview on the material employed

In the following section I am going to list all the empirical material gathered and employed in order to elaborate my findings and reach a discussion/conclusion on the initial question. According to the methodology, different sources had been used in order to achieve the aforementioned goal and this is related to the Triangulation approach needed to validate qualitative investigation. Most of the Empirical material is represented by cases and semi-structured interviews (as it explained previously); a brief overview of each of those elements will be provided in order to have a clear picture of the sources that will support the analysis.

5.2 Cases

5.2.1 Design Thinking and Innovation at Apple

The Case (Thomke, Barbara Feinberg May 2012. (Revised from original January 2009 version) takes into consideration one of the most innovative companies of the business industry in the last 15 years. Needless to say that one of the main forces that drives Apple's success is represented by design and its use in an unusual and even brave way. The case touches all the relevant points of Apple's story, focusing on understanding how design is employed as a competitive advantage in the different steps of the process (from idea generation to commercialization itself).

I will refer to this case as **(Apple Case)**

5.2.2 Alessi: evolution of an Italian Design Factory (B)

The Case (Moon, Vincent Dessain et al. February 2004. (Revised from original September 2003 version.)) goes through the history of one of the most worldwide recognized Italian design firms. The singular approach employed by the company is presented and the issues encountered during the balancing process of artistic and business component are discussed throughout the case.

I will refer to this case as **(Alessi B)**

5.2.3 Alessi: Evolution of an Italian Design Factory (C)

The Case (Moon, Vincent Dessain et al. September 2003) is a supplement of the precedent case drawn up as an interview to Alberto Alessi. It has been placed in this section and not in the following due to the nature of case's supplement, but it might be considered a further interview.

In the following interview Alberto Alessi talks about some of the relevant aspects concerning the management and design relation at 360° degree. The interviewer pinpoints some of the critical factors concerning the product evaluation, art-design-business mediation and brand awareness.

I will refer to this document as **(Alessi C)**

5.2.4 Bang & Olufsen: Design Driven Innovation

The case (Robert Daniel Austin, Daniela Beyersdorfer 2007) takes into consideration one of the first companies that centered on design as a focal point for a wide range of its products, accomplishing a high market growth and a recognized position in the business arena. The title of the case is explicative of the process followed by B&O in their conceptualization and approach to product design. Some critical issues are also presented in this case and they will be used to reflect upon some problems that could arise in companies that are subjected to a high leverage on design. B&O, for example, has been extremely effective in providing its customers with high-finished and unique products, making a wise use of design and product combination; in the last years due to the high competitive market and a change in philosophy of the company some aspects needed to be reconsidered.

I will refer to this case as **(B&O case)**

5.2.5 Design: More than a cool chair

The Following document (Robert Daniel Austin, Silje Kamille Friis, Erin E. Sullivan 2007) should be considered an in-between a case study and a segment research. It provides some interesting insights regarding the Design industry, substantiating the whole discourse through the presentation of data and statistics. It goes from a broad picture of design and how the latter is intended, to the understanding of how to manage creative people and provide them with the right incentives.

I will refer to this document as **(Design MTAC)**

5.3 Interviews

As explained in the previous section the interviews have been conducted in a semi-structured manner in relation to my investigation. The latter format has been chosen in accordance with my methodology; in particularly, this format has been selected with the concern that I conducted a sort of exploratory investigation and I did not want to prevent my possibilities of acknowledging new facts by making a rigid survey or a strict list of questions to submit.

5.3.1 Interviews questions (Appendix 1)

Those are the general questions that I employed to interview the relevant people for my study. As stated in the headline of the appendix, they are general guidelines because I did not prevent myself to deviate, if necessary, from the chosen path during the interview. Therefore, the reader should not be surprised if during the interview some points had been stressed and some others had been less privileged. Everything has been done in accordance to my hermeneutic approach of a continuous understanding of what I was investigating by constantly examining the importance of particular aspects in a broader picture.

5.3.2 David Lewis Designers: Torsten Valeur Interview (Appendix 2)

"David Lewis designers is a Copenhagen-based drawing office working freelance for companies in their work with design. the drawing office's main client is Bang & Olufsen, where David Lewis himself was chief designer.

David Lewis established himself with his first client in 1967, and in 1982 he hired his first employee. today the drawing office employs seven to eight designers guided by his long term partner Torsten Valeur. The philosophy of the drawing office is never to be too many. That is the only way we can stay close to the design process instead of allocating resources to administration."(David Lewis Designers)

Torsten Valeur is the Head of David Lewis Designers and he is specialized in industrial design and product design. He had been extremely available in providing sharp insight regarding my investigation. The interview revolved around the different phases of the process listed in the Theoretical Framework and has been conducted in order to gain some practical feedback from an expert in this particular industry.

Interesting answers had also been provided to review my research under a critical lens.

5.3.3 Knud Olscher Design Interview: Knud Olscher Interview (Appendix 3)

"Knud Helmuth Holscher (born May 6, 1930 in Rødby, Denmark), Danish architect and industrial designer of international renown. For many years he was a partner in KHR Architects with Svend Axelsson and designed many of their works together.

Holscher studied with Erik Christian Sørensen and professor Arne Jacobsen at the Royal Danish Academy of Fine Arts, School of Architecture, graduating in 1957. He joined the office of Arne Jacobsen in 1960 and moved to England to oversee construction of Jacobsen's St Catherine's College, Oxford in 1962. Holscher was awarded the British Design Award in 1965 and 1966 for

work done in collaboration with Alan Tye before accepting a partnership in established Danish architectural office Krohn and Hartvig Rasmussen,[1] later renamed KHRAS. Knud Holscher retired from KHRAS in 1995 and has since headed his own office Knud Holscher Design.[2]

Though starting out as an architect, it is his work as industrial designer which has brought Knud Holscher international attention and recognition. His designs have been linked to the Hochschule für Gestaltung Ulm and to the work of HfG Ulm student Dieter Rams.[3]

Holscher was professor of architecture at the Royal Danish Academy of Fine Arts from 1968–1988 and professor of design from 1994.[2] He has received numerous awards for his work and is an Honorary RDI, Royal Designer for Industry since 2004." (Wikipedia)

Knud Holscher kindly shared all of his extensive long-term experience in a relatively short interview. The discussion themes revolved around the main guidelines presented in Appendix 1, however he offered me the chance to gain a further comprehension of the reasoning employed by a designer who is also an architect at the same time.

6. Analysis

6.1 Analysis' conduction

This section is concerned with the creation of a dialogue between the "Theoretical Framework" presented above and the "Empirical Material" gathered through my investigation. For methodological reason and simplicity for the reader I decided to mirror the exact same structure employed before in relation to Section 4 - *Figure 4.1*. I argue that this will allow to keep a hotline that runs through the main parts of the thesis in order not to lose the consistency in the discourse and in the prosecution of its development.

Correctness and clarity are both required in an extended investigation. For this purpose, I believe that remarking a few concepts of my methodology might be profitable at this stage, allowing a better comprehension on the reasons that led me to present this section as it will be. Namely, due to the concept of Reliability expressed in the methodology (Section 3.3) I will try to analyze the same four main topics using different sources (so to speak, using the relevant material found in the cases and in the interviews); furthermore, in order to strengthen the evidence that should emerge from the analysis, I will quote the interviews' and cases' parts that I might find relevant as extensively as possible. However, this aspect is not a mere whim but an obliged task that I will carry out for being as pertinent as possible with the "low inference descriptors" listed in the methodology section (Section 3.3).

Therefore the reader should not be surprised if part of the dialogue or interviews reported as follows will be longer than usual. Needless to say that a correct interpretation of texts and sentences also pass through this stage on interpretation, in which an extrapolation of minimal excerpts can be misleading if not properly contextualized and presented.

6.2 Design's Concept

One of the very first questions that have been debated throughout the whole thesis and the respective sections is also one of the most basic (therefore, usually complex) that can be conceived: " What is Design ?".

During my interviews and after a thorough reading of the case studies a line of definition started to emerge; surprisingly, it appeared not to be far from the one provided by Heskett (Heskett, John 2002) in Section 4.2. Precisely:

"Design can be defined as the human capacity to shape and make our environment in ways without precedent in nature, to serve our needs and give meaning to our lives".(Heskett, John 2002)

Further confirmation of this shaping action towards the nature and guided by mind can be found in Torsten's words; the idea provided by the Head Designer seems to reflect closely to Heskett's definition.

"G: I would like to start with a very broad question: How do you intend or define "Design" ?

T:...Well, I don't know...It's a problem solving job...you start, more and less, being plenty of papers and then you need to find out solutions for the challenge that they put in front of you. Actually, you could say that you are giving shapes to ideas...defining ideas, giving shape to ideas and try to solve what kind of problems those who deals with the phase (in the process) from being created to go to mass production."[Appendix 2]

The existence of a shared conceptualization inherent to design sheds a light on the possibility of the field's standardization. On the other hand, in order to be correct, I need to remark the fact that more than one source suggests that design cannot be defined as a subject *per se* because it seems to show its true essence through its factual application. So to speak, Knud is very sharp and intense in underlying the impossibility of words to describe something that gains significance only through its execution:

"G: The second question will be: "how do you define design?"

K: Well, by doing design! because I don't think that you can put words on it. Each of the part of the advertising, each part of your image, each part of how you try to communicate your ideas or your identity to costumers; so, you can have also a language or words for design but really design is what you are doing and there is all kind of design."(Appendix 3)

If on one hand Knud's pragmatism seems to push away the idea of condensing Design definition in a final accepted statement, on the other hand it reinforces the impossibility to refer to design except if contextualized in a specified application. As we saw before, this conception is not new and it is actually one of the main obstacles to pursue a coherent development of a broad applicable subject such as design itself.

In the Case "Design MTCA" there is further evidence that researchers are conscious about the field's fragmentation and that Heskett can be considered a reliable witness of it:

"Researcher Terence Love suggests that the design field "consists of at least 750 subfields, each with distinctive communities of practice, research literatures, and bodies of knowledge."7 According to Heskett:

. . . [D]esign has never cohered into a unified profession such as law or medicine where a license or similar qualification is required to practice, with standards established and protected by self-regulating institutions and where use of the professional descriptor is limited to those who have gained admittance through regulated procedures" (Design MTCA)

6.3 Design Methodology: Reasoning Patterns and Paradigms

I am going to simplify the findings in this section by dividing them into three macro-themes. One will be concerned in comparing the adherence of the Reasoning Patterns presented above by the academic literature and their effective (conscious or unconscious) application by designers.

The second part will be focused on reality's interpretation and will attempt to face the problem of paradigms' setting and shifting using a concrete argumentation provided by the sources employed.

The last part is an addition. In accordance with the hermeneutic methodology and the possibility of drifting from my initial pre-understanding (Eisenhardt 1989), the exploratory nature of my thesis led me to add a further piece to the final picture than the one initially conceived. In fact, this last section will provide some elements (that will be further discussed) concerned with the relation between designers and engineers.

6.3.1 Reasoning Patterns

In accordance with Roozenburg N.F.M (1995) and Dorst (2011), a common reasoning pattern seems to emerge through the analysis of my material and the latter can be fairly assimilated to the *Abduction type 1 and 2,* instead of the more scientific approaches of *Induction* and *Deduction*.

A distinction between the first two modes of reasoning seems to emerge mostly in relation to the type of product taken into consideration.

For example Knud states:

"G: It's a very personal question, related to design of course. When you need to create something from scratch, do you usually have a pure theoretical idea, like an imagine in your mind that you

then put down or you need to go out and get inspiration from the reality around you ? You need some empirical inspiration here and there to create your idea?

K: It's very different when I have to design, well I hope next year to design a new seat for Ifö. There, I have to think, how is human being, is it changing his way of taking bath? Are we taking more showers? , are we laying in a long bath? Is it furniture more important? This is a very complex thing, while if I have to design a new cup, and I have some ideas, it's much simpler idea, "how can I avoid to burn my fingers when I want to take the lit off and it doesn't boil over. It's very different, I mean, the product I talked about, the furniture, or maybe, the lavatory is secondary part in the toilet, I mean previously the toilet room was very simple, and very nasty, but now it became more serious, which is very positive, I think. It's a very complex starting, if the lavatory is just a detail, I mean, there's also this paper, and cleaning, new seats, and maybe handicap support, I also think people being elderly and so forth, I mean, if you combine living situation when you start to have small babies and they have to be cleaned and changed; and then you have a more normal type of use, and then you have elderly people and they may need supports. That would be a fantastic way if you could launch a new system where you think from being a new family wit babies to the end of your life. I mean you don't need to be the same family living in the same bathroom but maybe they are exchanges several times, may be you have to solve different problems.[...]"[Appendix 3]

The designer offers a great example on how different reasoning patterns are applied on the basis of the elements possessed in a particular moment. When it is necessary to innovate a simple product, such as a cup, all the factors of the equation presented above (WHAT + HOW= VALUE) (Dorst 2011) are almost in place; what is lacking is the actual artefact that is going to fulfil the researched value. We could associate this type of reasoning to *Abduction 1*. When the problems becomes broader and multiple factors enter in the mental equation, "WHAT" and "HOW" become blurrier and require a further understanding of the VALUE that people are going to pursue in the future ("How people are going to relate to a toilet?" for example).In this case, the designer has tendentially two choices: try to understand the value pursued in the current set of rules of interpretation or redefine that value using different ones. When the designer starts to question how to interpret the meaning/value itself in the current setting of rules a shift might take place in the modality of reality's interpretation, making a revision of that VALUE necessary in a different setting (i.e. Paradigm).

Further proof of what is described above can be found in Torsten's words:

"G: Related to this process, can I ask you to briefly describe it [The process]? From the starting point to the ending point?

T: Starting point is very depending on your clients; some prefer rather to describe briefly what they are trying to put in all the parameters and information they can think of and they try to deliver it as a package to you, and your job is to generate an answer out of this package. In other situations you start with nothing and you have to... or maybe the question could be, "what is the next television ?" and you need to research and find out from yourself what is the answer for that, you need to predict where we are going and you need to understand the clients' ability, what they can and cannot do...what it makes sense to them...and you have to extract all this thing, think about it and produce a solution and then you present to clients and then you do the feasibility study of it, to find out if it makes sense or you need to reconstruct it before the part of the actual construction."[Appendix 2]

Again, based on the clients' needs (who commissions the work) there might be a certain degree of freedom. In the case of having ready all the details and the parameters Torsten needs to think WHAT the product able to express those requirements is. When less constrains are posed a higher degree of commitment and thoughtfulness is required in order to find a solution for a VALUE that can be fulfilled potentially by anything. We might say that *Abduction Type 1 and 2* are used in parallel depending on the degree of freedom and complexity of the problem. I argue that both those patterns should be intended as processes to unfold a certain VALUE in a given paradigm. When the latter is insufficient to provide the appropriate rules to correctly interpret a certain VALUE, a shift might be required and the terms of the equation (WHAT+HOW=VALUE), although identical, could possibly lead to a totally different solution. The role of the designer is to act as an interpreter of the reality and consequently as interpreter of thinking's modality of end-users.

Torsten remarks this aspect:

"G: Can you say that exists a process or different kind of processes?

T:There are different kind of processes, it depends on the clients, depends on the actual project that you are doing...if you are within an known territory or if you have to pick up a lot of information and understandings of completely new fields, as a designer you can be specialized in some fields, you tend to be well thought in what you are doing (it could be a speaker, a television, injection tools), you had to do like the artist are doing, you have got no experience on how to inject medicine, but you have to try to put yourself in the user mind, you need to understand what makes sense for them ...you can only do that only through the understanding of what the actors are doing, you can't

ask them question and demand an answer...the only way you can get an answer is only by asking yourself and the only way you can ask yourself is by being a person"(Appendix 2)

The mediation process is enacted in an introspective way. The designer, in his mental reasoning, should be capable of embedding different instances originating from different sources. In other terms, he should rely on the reality by taking into account, at the same time, the "*stimuli*" derived from:

- Being a designer
- Being a person
- Being an end-user

The ability of a designer lies in the capacity of wisely condensing all of those mental claims and the ability of meaningfully crafting them into a single final outcome.

I argue that the powerfulness of this process resides mainly in the synthesis action presented above and David Lewis (B&O Designer) provides further evidence in the "B&O Case":

"I don't think [customers] know what they want. They would ask for something that's already in the market, the hot item of the moment. This would be easier and cheaper to manufacture, of course, but we have to go beyond their expectations if we want to survive. We have to come up with something different which is completely B&O and which they can't resist. It's not a democratic process. Besides, we all are customers ourselves, so why ask others?"[B&O Case]

There are some products that can be totally new for the market. In this case, relying on customers' opinion is an absolute non-sense, and the process described above is even more meaningful. To some extent, in those cases, the entire process (WHAT+HOW=VALUE) is completely created "in house" because, as David states, "*it's not a democratic process*", it is an authoritative one. In fact, it might be the case that one needs to fulfil a value of which existence is entirely conceptually supposed, because it has never been demonstrated due to its absolute novelty. Apple offers an interesting example on how they dealt with OS creation in the early stages of personal computer diffusion, and how they generated a product based on the conceptualization of people's expected and potential needs.

"Cordell Ratzlaff, a major architect of [9] the Mac OS X operating system (circa 1990), noted: We did the design first. We focused on what we thought people would need and want, and how they would interact with their computer. We made sure we got that right, and then we went and figured out how to achieve it technically. In a lot of cases when we came up with a design that we knew

really worked for people, we didn't know how we were going to build it. We had a design target, and we worked with engineering to reach it. We ended up doing a lot of things that we initially thought were impossible, or would take a long time to do. It was great because we were applying a lot of creativity and ingenuity on the design side and then pushing the engineers to use the same kind of creativity and innovation to make that happen." (Apple Case)

6.3.2 Paradigms' issues

Section 4.3.3 provided a broad overview on what a paradigm is and how it should be intended. Some practical implications of the concepts, elucidated in the previous sub-section, revealed the emergence of interesting issues connected to concrete problems and business' theories.

I argue that the concept of Paradigm plays an interesting role in the process of reasoning and the consequent success of the final outcome. For correctness and relevancy, I reported the entire answer provided by Torsten regarding this aspect.

"G: Next question is always related to product, right? And it's from the designer point of view. Do you think that each time customers understand the product as you do or maybe sometimes they can't see the meaning or can't really understand the product as it was designed?

T: There is a danger of misunderstanding. Especially when you are in hurry, if your time frame is too short, you do what usually other people do; you eliminate the second thoughts and the second thoughts are very important tool for creating a result that is more understandable by people. you should think about something like killing your darlings, breakaway your common look because every person has a kind common look to a thing, you must be able to get behind that and get your fresh eyes again to try to understand what are the needs also for end user. It also a question of what kind of market you are in, some market can be very conservative...for mobile phone market for example, is a very conservative market at the moment; there is one formula of how mobile phone should look like; which is more and less the Apple phone. Everybody is doing that .If you break that away that, you have to be very convincing, which means that you have to spend a lot of time as a designers but much more the engineering group should be allowed to spend much more time. The engineering people of any kind of product development, are the most important persons at all...they are more important than designers and marketing people. They initiate us... [Apple example]

If your basic idea is able to break consensus that you are allowed to make those kind of revolution that has been done several time. If you hadn't carry through it will be a failure,

because you didn't follow the path, then you are crazy; that would be the perception of your result but if you can carry completely through then you will be the genius.[Appendix 2]

Torsten supplies the analysis with a lot of interesting cues. First of all, if you want to create something that really goes beyond the "standard innovation" (Incremental innovation to some extent) you need time. If you work under the wrong amount of pressure (deadlines too tight) you tend to kill your second thoughts; so to speak, you do not have the time to break the existent paradigm and elaborate a credible alternative one (usually you will lack elements that are going to justify the market's acceptance). This kind of hasty process tends to lead to failures: you create a new product that is not revolutionary and is not marketable. The reason why it is so challenging to break boundaries sometimes should also be sought in the tightness and the duress of those boundaries previously described, and not in a wrong line of thinking conducted by the designer. As Torsten points out, some markets (I would argue most) are in effect conservative and lean towards uniformity instead of fragmentariness: Apple iPhone is an excellent example of what can be considered as a "standardized paradigm" for a Smartphone nowadays, and it might even sound obvious to remind the fact that its competitors are almost all aligned to it.

On the other hand, if the process of the paradigm's revision is carried out carefully and thoroughly, it is possible to break the present *consensus*, making "the new paradigm" the standardized one (or at least the most recognized). Attempts are needed to break the current interpretative paradigm and, even though one might put a lot of effort in it to succeed, it does not necessarily mean that there will be an automatic success (a shift, so to speak).

When David Lewis presented his new concept of Cellular phone he had a hard time in convincing his audience that he was on the right path. Although the relative insuccess of Serene (The B&O phone), the latter possessed important elements that have also been reused by competitors to meet the market's expectations (we find the same circular touch interface in the famous iPod nano). This means that no one can guarantee the success of a product, especially if it is a breakthrough one; it is also true that it is unpredictable how unsuccessful this could be. On the other hand, the potential reward of being a "game-changer" in the market is poorly comparable with the one achievable through the philosophy of "We do what we do better".

"Take the Serene mobile phone. David came in and said this is how it has to be . . . it did not look like a phone and was kept simple without the latest gadgets like downloading music. But he would not negotiate. That was exactly the point; he wanted to redefine what a phone is and emphasize what it's meant for" (B&O Case)

A shift in meaning usually involves a technological breakthrough. However, it is possible that a revolutionary product can be carried out through an *already existing technology* not correctly understood yet. Apple provides an example; at that time, computers were not a breakthrough innovation because most of the companies used them for corporate purposes. The true revolutionary intuition was to change the interpretative paradigm of the computers' usage. Rethinking this product from a corporate object to a personal one might appear to be a simple leap, but the incredible recognition that this intuition brought to Apple seems to prove the contrary.

"The notion of personal computers as a tool for individual work was unimaginable. Corporations and governmental agencies controlled how work functioned and, by extension, influenced the creation of tools that were to be deployed to control it. The business processes and systems that evolved were eventually captured in enterprise software, with its emphasis on automating tasks."[Apple Case]

As stated before, taking into account a change in paradigm can be fundamental if a company wants to pursue a truly innovative approach. Having in mind the existence of various interpretive paradigms within design it is also important to avoid mistakes which are sometimes not necessarily connected with an incorrect conceptualization of the product itself. Those errors may be related to the impossibility of understanding that same product in accordance with a certain set of "rules of interpretation" (in business terms, one could actually intend a market as the factual translation of a set of "rules of interpretation"). As Knud argues:

"G: Talking about this part, you see and idea and then you need to create something from the idea that has been provided. You said that you usually make some research on customers. Is it always like that? In the sense that, you always start from customers' needs? Or sometimes when you create something that you have in your mind...

K: Well, it's very different. I had a certain idea for cooking utensil, it's has been almost impossible to persuade anybody because they said, in some countries you have people like me, I mean, I am cooking myself with my wife, I am cleaning my utensil and so forth. But if you are very wealthy, I mean, you do not bother about that, then you have someone in your kitchen and you don't care about your cooking utensil, again, it's a certain group(young) who care about that and are willing to pay extra for design, I mean, it's better finished and they better designed."(Appendix 3)

Knud is right in taking into consideration the possibility of different interpretive rules. A certain kind of way to conceive reality in a certain country may be misleading for another one.

Globalization arises a relevant issue in the role of interpretative paradigm for different markets. Making products that are internationally recognized is not impossible, but might be severely problematic due to cultural preconceptions.

The latter argument is interesting because it redirects the attention of the co-existence of valid but incommensurable paradigms within business. Even though an analysis in a certain paradigm regarding a particular product may be conceived perfectly and flawlessly, the simple fact of linking this paradigm to misinterpreted feedback can provoke the aforementioned problems.

Keeping those peculiarities in mind should benefit both parts of this dissertation: designers, when they need to elaborate on a new product, and business, when it strives to access new markets.

6.3.3 Designers and Engineers

This section can be defined as a finding in the strictest sense of the term. It is correct to highlight the fact that, in my Thesis' delimitation, the field of inquiry was directed mainly to investigate design process (so to speak, the role of designer in the process of product creation). The explorative nature of my Thesis and the consequent facts emerged during the elaboration of the empirical material imposed on me to write an important factor of design process that was not taken into consideration in the initial-phase of "pre-understanding" and during the literature review. Given the hermeneutical process and possibility to steer my path in the case of an opportunity's epiphany, I am going to add an additional "piece" in the design product process that, although not intrinsically related to design itself, plays a decisive role in the final shaping of the product: I am talking about the figure of the Engineer.

In more than one source, and in the interviews themselves, it seems that it is not possible to detach design from its engineering counterpart. It would force the nature of the matter of fact that a close correlation exists between those two, and not always pacific and easy to manage.

I am going to pose the excerpt of the conversation with Torsten again in order to underline few lines:

"The engineering people of any kind of product development are the most important persons at all...they are more important than designers and marketing people."(Appendix 2)

I could not evade the evident credit that a designer is giving to the engineers in the design process.

Torsten says:

"G: Ok! Correct me if I have misunderstood. We can say that innovation, in the case of breaking through products, is more engineering driven then design driven?

T: Not necessarily. It can be design driven but, the guys that solve all the problems are the engineers and you, as a designers, are absolutely depending on them. The ending result is very much depending on the fact that they did their job well or not. When the job is very much related to designers you have to have designers work very close with them until the very end of the product."

Torsten reveals a clear "dependency relation" that should be intended as dualistic and not univocal. I argue that one might think about this communication between those two actors (designers and engineers) as a "balanced dialogue" in which one can temporarily provide a *stimulus* and vice versa.

Torsten remarks this point during the interview (Appendix 2), giving the merit of setting the path to the designers. In other cases there is a mutual exchange that may be considered biunique.

In B&O for example:

B&O had no standard process for product design and development but relied on a culturally evolved collaboration between designers, concept developers, engineers, and technicians. Close physical proximity to production departments further ensured interaction with partners in the process. A key word in the B&O design conversation was "Synthesis." Designers proposed a "thesis" or initial idea; engineers developed an "antithesis," an answer to the designers' proposals couched in terms of possibilities for realization. From a repeated cycle of thesis and antithesis emerged synthesis. The whole process, from idea to market, usually took one or two years, but could take much longer. [B&O Case]

And further:

A product could start with an idea brought up by a designer or engineer, or with an opportunity arising from a new technology or material. "When a designer comes up with a new idea or form, he brings it to Idealand and tries to get us burning for it," explained Pedersen, "but inspiration can also come from our engineers [who] are constantly looking for new technologies [to] inspire our designers."[B&O Case]

The importance of the engineer's figure and its role in the process is stated also in the precedent excerpt concerning Apple's case:

"We made sure we got that right, and then we went and figured out how to achieve it technically. In a lot of cases when we came up with a design that we knew really worked for people, we didn't know how we were going to build it. We had a design target, and we worked with engineering to reach it" [Apple Case]

6.4 Hermeneutics

Hermeneutics, understood as described in the theoretical framework, plays an influential role in both of the main actors of our investigation; namely, the designers and the consumers. Regarding designers, one could simplistically state that they are concerned in embedding a value/meaning to a certain kind of object/artefact, whereas consumers are supposed to acknowledge this value/meaning previously attached. The process briefly described in the previous two lines is not straightforward at all, and it might be subject to a wide variety of different implications. One can think of "interpretation" as the symbolic moment when the two counterparts meet each other and establish a contact through the product.
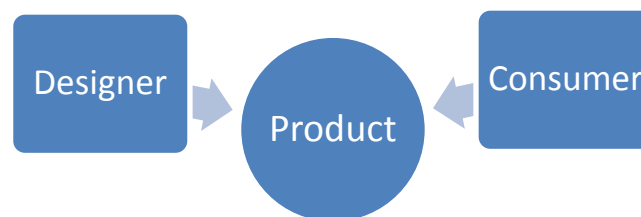

Figure 6.1

Some issues may arise in both directions of this process. The initial meaning envisioned by a designer can be biased by several factors, (as previously observed: time constraints, incorrect reasoning in wrong paradigms, compromises dictated by who is commissioning the product) making the delicate attaching process less smooth than one could imagine.

Taking into consideration the best possible scenario, where all the impediments theorized before do not happen, there remains an uncontrollable factor that is as decisive as problematic: the historical context. This entity can be imagined as an "umbrella" floating over both the actors of the interpretation process (designers-consumers), resulting in their efforts in affirming/receiving a certain value extremely complex.

David Lewis, while worked for B&O, seemed to be aware of the consequences that historical contextualization may have played in creation or acceptance of product:

"A lot of ideas got discarded for being not "B&O enough," too expensive, or technologically infeasible. But ideas had a way of reappearing. Lewis kept all his old designs because he had noticed that rejected concepts tended to resurface, and that the time was right for some of them the second or third time around" (B&O Case)

With regards to Alessi, one can see how value/meaning is actually affected by the contingency of interpreting reality within a given context (from the designer side).

"There is a need for a more serious and sober aesthetic," he said [Ed. Alessandro Mendini] "The era of witty, frivolous objects is over. The times today are more uncertain, people are harder, and our objects should reflect that."

In the mid-1980s, Alessandro Mendini had helped define the current Alessi image with designs such as his best-selling Anna G corkscrew, in which the corkscrew had been playfully built into a woman's skirt. "How different such an object would look if I were designing it now," Mendini thought as a freight train thundered by outside. "It would probably be stricter, simpler in shape, and not so flamboyant." [Alessi B Case]

So to speak, the consumers themselves, as stated before, are also affected by the historical contingency. In fact, it might happen that a certain product can generate "misunderstanding" amongst consumers simply because they do not have the tools to correctly interpret it. In this sense the action of giving meaning may be considered a bilateral *active* action; both actors (designers-consumers) contribute to the product's meaning creation and acceptance ("market success", in business terms), is only given by the meeting of their reciprocal expectations.

I intended the co-creative process expressed by Gadamer as an interpretive *a posteriori* construction and not as a creative collaboration in the realization of the product itself (consumer and designer collaboration).

Gadamer also talks about the concept of the "original intention's" misunderstanding. Translated into business terms, one could argue that the consumer might completely miss the meaning initially conceived by the author of a product. This misunderstanding may generate the so called *fiasco* (because the process is incomplete) or may actually generate an unforeseen meaning that goes beyond the peculiarity of the product itself.

Even though I argue that the latter might be a rare event, an example like the "Lemon Squeezer" designed by Philippe Starck for Alessi, may be used as a counter case to falsify my argument.

In fact, most of the people would buy the aforementioned product not for its intrinsic characteristic usability and accessibility; on the contrary, the "Lemon Squeezer" seems to fulfil the concept of design when it is intended as "fiction" rather than as "form". Consumers reinterpreted this product as a "status symbol", surpassing the "original intention" of its creator.

Those kinds of products tend to have a longer-life cycle on the market because they maintain their identity and integrity whilst being constantly reinterpreted by the consumers (with no necessity of improvement). In this sense, one might understand them in the same way as Gadamer does for the role of the piece of art (it is not unusual that some of those objects are considered as such).

Whoever is concerned with design and business tends to be cautious and propositional in trying to grasp the opportunity of discovering one of those products due to the evident return in image and profit (against a trivial expense).

"I try to be neutral and open-minded with respect to aesthetics. My job is to apply a cultural filter, not an aesthetic filter. This cultural filter is not a matter of my personal "taste"; rather, I'm looking for products that are transcendent. What does this mean? It means that I am looking for products that bring poetry to the marketplace."[Alessi C Case]

Alessi's research for transcendency appears to refer to the concept elucidated before. In other terms, he looks for products that posses the characteristics of being re-contextualized and reinterpreted, not only in a single given context but, in multiple and changing ones, making them, as Alessi's states, *transcendent*.

6.5 Business

In the Section 4.5 of the Theoretical Framework a great emphasis had been posed on the distinction between a "Design Driven Strategy" Vs. a "User-centered" one. Even though the two approaches are the core of the ongoing debate, I argue that it might result deceptive in taking them as differentiator factors in order to analyze design management. I am not saying that they should be left aside, but I argue that they are extremely useful to interpret a process when it has already been put in place (a *posteriori*).

I state this because what emerged from the analysis of the empirical material is the impossibility of making a clear distinction of the approach taken due to non-awareness in companies' actions if analyzed under the lens of the "*a priori* point of view". Sometimes, what dictates the necessity of being disruptive instead of conservative (so to speak, design driven instead of user-driven) is

influenced by business choices and contingent situations. It would be incorrect to categorize a company as a serial "game-changer" or as a serial "incremental-improver" aprioristically (radical vs. incremental innovation).

On the other hand, the way managers and designers collaborate and interact might lead to reaching a certain kind innovation instead of another;

The material gathered led me to focus my attention on a different issue that is related to the theme mentioned above, but in a "collateral" way, because it belongs to a slightly different level of problem understanding. Given those premises, the questions that should be answered at this stage are the following:

- Should the manager act as designer?
- Should the manager learn how to properly manage designers?

The two problems raised above are the most recurrent ones through the evidence gathered during my explorative inquiry and none of my sources seems to show a straight way to answer. So to speak, a contraposition is present which is peculiarly related to the sector, industry and managerial philosophy inherent to each company.

It is possible to briefly compare the two voices of the debate:

"Says Roger Martin, dean of the Rothman School of Management at the University of Toronto: [B]usiness people don't need to understand designers better; they need to be designers—to think and work like designers and to embed design shop characteristics in their organizations. . . . Make no mistake about it, business is a creative activity, and the creative economy is here to stay. Organizations who figure out how to manage for creativity will have a crucial advantage in the ever increasing competition for global talent. . . . The future of business is design" [Case MTAC]

On the other hand:

"G: so, you're saying that business is usually problem or an obstacle to this kind of process?

T: It can be an obstacle when business wants to control process. When they try to define everything initially. Because they decide upon their own imagination and fields that are quite limited. Your end result stays within this small segment. It could happen that we are talking about a set of knowledge that can't be reached through a managerial process and if they control to much they don't enable other people to get there. The best thing that the management can try to do is trust...trust the designers, trust the engineers." [Appendix 2]

In the excerpts reported above there is a clear dialectic on how managers should intend the work of a designer. In the first case there should be a total immersion in the process, a perfect adherence that will make the manager a designer himself. The other source looks at this behaviour as an intrusion, stating that the knowledge a manager can achieve regarding the design field is limited and might only create constraints to the freedom that should be granted through reciprocal trust.

Through my investigation I unfortunately did not find any relevant empirical evidence to make an assessment and show an example of a fruitful discussion related to the first position (manager as designer); on the other hand, much more issues have been revealed in relation to the question of "how to manage designers".

For example, an aspect raised by Verganti relates the fact that those interpreters of products (in this case, designers) should be involved in the process not occasionally but steadily. An indirect complain about this companies' attitude of consulting designers only at the final stage of the process and not in the initial one can be found in final part of the interviews of Appendix 2 & 3. Knud and Torsten ,although in different ways, report the fact that some clients tend to approach them when the product has been already conceived; eventually they will be forced to rethink it completely because of the missing counselling that should have been carried out in the early stages. It is important to remember the fact that this dialogue should be harmonized in a way to avoid excessive bureaucratic obstacles; the latter could prevent the creation of the right environment to nurse creativity.

Moreover, Torsten underlines the importance of being able to carry out this dialogue with the right interlocutors in order to establish a profitable discussion:

"G: in the end, we can say that actually management should not enter in those question related to design product?

T: management should be open in a way that...when you have a contract with a designer, you should make sure that the designers can talk with the decision making people within the company; taking away all the boundaries..." [Appendix 2]

Knud himself use B&O example to reinforce this concept:

"G: Do you think that is relevant the way that business understands design? in the sense that, do you think that is important for business to understand the work that you do in order to better communicate or it's actually better that they remain separate in order to avoid strange communication. It's better: "I'm a designer, I do what I know; you need to trust me, you don't

need to understand what I'm doing or it's better for business to acknowledge what you do, the process that you follow to make it clear, to make it evident in order to improve the communication between business and design?"

K: The latter, is the ideal one. The sale people must understand the product, that is very very important unless they feel for it, unless the communication between the designers and the top of the business is safe, is very very important I think. And that is very often not taken care, I think. I knew the B&O designer very well, he just died unfortunately, David was living far away from B&O and B&O was far away in Jutland in Copenhagen. David was sitting here in Copenhagen. It's a very long trip but every Friday he took the car and went out and started over here in Copenhagen, because he has to live in Copenhagen while he can go to speeches, to art, to design shops. [Where B&O is located] is so remote and you have no impulse. That's a picture of a design separation but at the same time, unless you really understand each other and what can carry on B&O design because they are also mixing other problems[...]"[Appendix 3]

 I can conclude that a strict communication is important not only in the late phase and not only in the final touch of a product. The latter aspect is reasonably brought up by Knud, who appears annoyed by certain managerial choices in which design is employed only as a signature and not as a complex study of the product. It seems that companies still rely on design in this sense, although this aspect of "design as form" is slowly becoming a standardized asset and not acknowledgeable as a competitive advantage anymore (Postrel 2003) :

K: and George Jensen, for example, the royal Copenhagen, I mean, they are silly, I have to say. Because they don't know how to do this. They are like: "Ah, now we found a famous international designer and he makes some crazy shapes...that doesn't save the shop, I think, I think they should be much more back to functional and features and then add all the artistic part to that....

The spatial and geographical configuration between designers and companies is another relevant aspect. As stated in Verganti, it is not new that Alessi, for example, does not have an "in-house" design department; on the contrary, all the design process is based on a scattered network of designers that gladly collaborate with Alessi because of the well known exemplary and comfortable way to rely on them. B&O partially followed the same example with David Lewis;

The common denominator seems more related to the comfort of the organizational environment instead of the physical one. Given the fact that both B&O and Alessi show that geographical proximity is not really a necessary condition when a mutual understanding is correctly built.

"Ballegaard continued:

If you wanted to express power and determination as a manager here, it would be difficult, but if you allow a certain degree of freedom you get a very creative environment. We have a lot of respect for our creative people; we managers just facilitate the processes and balance them in the background."[B&O Case]

During its difficult years due to the absence of Steve Jobs, Apple implemented a controlled process for product creation, showing how complex it could be in trying to take over the complete supervision of a creative process:

"Don Norman, a well-known expert on design who worked as vice president of advanced technology at the company from 1993 to 1998, described it this way:

There were three evaluations required at the inception of a product idea: a marketing requirement document, an engineering requirement document, and a user-experience document. . . . These [three documents] would be reviewed by a committee of executives, and if approved, the design group would get a budget, and a team leader. . . . [T]he team would work on expanding the documents, inserting plans on how they hoped to meet the marketing engineering, and user-experience needs—figures for the release date, ad cycle, pricing details, and the like. It was a consultative process, [but it led] to a lack of cohesion in the product" [Apple Case]

In conclusion, I argue that independently from the approach a company decides to embrace in order to innovate through design (Design driven instead of user driven), a lot of attention should be directed on how to manage this process, independently if you are part of it (manager/designer) or not (manager managing designers). All the issues raised during the analysis should be taken into consideration in order to handle a process properly that is a continuous balancing act between constraints and freedom as well as creativity and control.

7. Discussion

7.1 Introduction

As stated in the very beginning the aim of the thesis is to unfold a process that is still considered a "black box" for business and take the opportunity to answer the initial problem statement:

<u>"What are the analytical processes behind product design and meaning creation, and how can a better understanding of these processes be beneficial for business?"</u>

Needless to say that the whole development of this inquiry aims to reach a coherent picture and be able to answer to the first part of the question as well as provide tools to discuss the second one. Part of this research is undertaken in order to provide a clearer understanding for managers that are interested in pursuing a concrete engagement with design and being confident about the fact that it is not a matter of "creativity's sparkle", but a process that can be nursed and improved wisely. I will now summarize the relevant implications that can be extracted from the analysis and all those theoretical pieces presented will be used to elaborate a final map/guideline.

I cannot help but notice how the final outcome of the entire investigation is intimately related to the method chosen to carry it out. The hermeneutic approach allowed me to study each part of the process, considering it as single entity with its own peculiarity. After an initial understanding of each of those pieces of my discourse a creative act has been necessary in order to reconcile all of them in a final *whole*. I argue that trying to present a final map that shows how the parts are interrelated with the whole and vice versa is a fair compromise to make evident I intended my hermeneutic investigation.

I will divide the discussion into four sections and each of those will be the explanatory counterpart of the map that I am going to present in the end of the discussion. I will mirror again the division followed through almost the entire thesis and will condense all the different instances in the final guidelines.

7.2 Design's concept

In the very basic definition, the empirical material and the literature reveal a close connection in how they both understand Design concept (Verganti 2009, Heskett, John 2002, Appendix 2, Appendix 3). It is fair to say that although there is a diffused conception of design as shaping and creative activity and almost all the sources seem to converge on the fact that design acquires its own

meaning exclusively through its concrete application. The multiple categories and sub-divisions existing in this field should be considered as the proven proof of this peculiar aspect concerning this subject.

Therefore, before starting any kind of strategic plan regarding design, one should be aware in which kind of sub-field is positioned in order to narrow down the tool that are more suitable to solve his/her issue.

7.3 Reasoning/Paradigm

Abduction reasoning seems to better fulfil the formalization of design reasoning pattern. It is possible to make a distinction between *Type 1* and *Type 2* (Dorst 2011) as described previously and this seems to be related to the nature of the product that one is trying to develop.

I argue that the VALUE sought within a certain reasoning pattern may vary if it is investigated in different Paradigms. Namely, one can solve a certain "value's issue" using different kind of reasoning patterns (abduction type 1 and 2) based on the elements owned (What +How) but the outcome can differ considerably in relation with the paradigm chosen to put in place the reasoning act itself.

A certain VALUE can be subjected to a shift due to the fact that the paradigm chosen is not suitable or explicative enough. In this case, as suggested by Verganti, there may be the right ground to create a breakthrough product if there usually is also a technological step forward. As argued before, it is impossible to aprioristically establish what will be the nature of the product developed (Incremental Vs. Radical) but, on the other hand, should be possible to set the right path to "make it happen".

Breaking a well accepted paradigm is not necessarily easy and different factors can influence this process, internally and externally as our sources revealed; internally, the designer can be subjected to time pressure, tight commission, strict pre-established parameters. Externally, one might say that the paradigm could be extremely conservative and difficult to innovate, or simply that the entire reasoning has been carried out in the wrong paradigm (due to cultural and contingent factors).

Furthermore, designers have to deal with a further ambivalent factor: the engineer. It might happen that the relation between these two is highly collaborative and therefore stimulating (providing input) or conflicting (placing barriers). It seems that a complex dialect is continuously established between these two and the reciprocal influence may be extremely powerful or dangerous if not correctly managed.

7.4 Hermeneutics

In the Hermeneutic process, a distinction emerged in the interpretative process. On one side there are designers and their issues related to meaning's transferring and concretization; on the other side, consumers may sometimes strive in understanding the true essence of this meaning that is supposed to be delivered. Given the empirical material gathered, I divided the potential outcomes into four possible scenarios:

In the worst case scenario, if the interpretative moment fails completely (as explained in section 6.4), there may be a mutual misunderstanding and consequently a so called "market" *fiasco* that might affect negatively the image and the business of the company.

In the "acceptance" scenario, consumers already own the interpretive tools to understand the designer's creation, but the meaning that has been delivered is already well-known; therefore the added value in terms of creation of new meaning is only partially accomplished. I would argue that usually this scenario reflects the launch of a product adducible to the label of "incremental innovation".

In the "break-through" scenario the meaning and the tools provided to understand the new product are well-elaborated. In a certain sense, one could argue that having the right ground (create "awareness" among consumers before launching the product) to welcome a breakthrough innovation also means to be in the right context. In this case, the product gains a huge interest and tends to become a milestone in its segment (sometimes setting a new paradigm; i.e. iPhone Vs. The rest of the Smartphones).

In the "piece of art" scenario, the object is acknowledged not only in the current market/paradigm, but due to its embedded capacity of constantly being reinterpreted through the passing of the time, It becomes a market's staple (long life cycle) without the necessity of further improvement of any kind. This is the rare scenario when art and design are almost comparable.

I take the opportunity here to remark that I believe in the impossibility of establishing aprioristically an assured outcome concerning the nature and the market's receptiveness. On the other hand, the reflections extracted from this section and the previous one might be useful to understand the potential threats and advantages if one decides to pursue a certain strategy instead of another.

7.5 Business

Understanding what impact acknowledging the design process has on business is one of the main points of this investigation. Positioning the business section at the end of this dissertation allows me

to have a clear overview on the process intended as a whole, making it possible to provide some general guidelines. I would like to remark that having business as the bottom line of this map should not be misunderstood methodologically. In fact, business plays a pervasive role that crosses all the different phases concerning the design process. How business decides to approach the organizational and managerial issues discussed previously is fundamental when it becomes necessary to decide which kind of path the company is trying to pursue.

As said before, although a design-driven strategy can be theoretically counterpointed to a user-driven one, this academic distinction tend to fail when it tries to be explanatory of a non "a posteriori" strategy (so to speak, when the whole process already produced an outcome). No one is questioning the importance of those two innovative models; I simply argue that the data found through the investigation seems to tell a slightly different story. Most of the firms tend to follow a strategy based on the contingency and the needs. Again, trying to make a conceptual division in company that can be classified as followers of "design driven" instead of "user driven" innovation sounds artificial and forced to me. It emerged that both strategies can be pursued if necessary and most of the products released, following one model instead of the other (usually unconsciously), cannot be classified aprioristically due to the hermeneutic feedback that the market provides only "a posteriori".

In my opinion, a prominent role is played by the perception that managers have about themselves within the company. In the case that the manager decides to become a designer and takes an active part in all the phases explained above, a smoother dialogue and a better understanding can be established with designers; nevertheless, this is not a straightforward conclusion. Torsten argued that due to the limited capacity of managers in getting inside designers' mindset, a problem related to limitation and incommunicability can arise, making this "manager-designer identification" effort more detrimental than useful.

In the case that the manager establishes a trustworthy relationship with the designer (without jumping directly into the process) a different strategy should be put in place. As Alessi argues, he works as a *filter* and is not entitled to provide any kind of judgment that is not strictly cultural. The role played by the manager should be limited to the facilitation of this process and not, as stated before, to the substitution.

The issue of facilitation had been posed during the interview with Torsten with the following outcome:

"*G: Do you think that you can facilitate something that you don't know exactly what it is?*

T: You can say in another way. All the Danish companies in history that had a life of design; most of them never had a design driven process within the company. When they had a problem, they asked the designer and this came up with a solution. It was good enough to make the company grows." [Appendix 2]

Torsten might be right, I would say, if we refer to an economic situation and a mindset of 20 years ago. Due to globalization and increasing competitiveness on prices asking designers to come up with a solution is not sufficient anymore. I argue that a harmonic dialectic should be put in place in order to assure that different instances coming from different sources can dialogue properly and the manager should be the one in charge of this aspect. In this sense, I believe that the facilitation process should be guided by a figure that is aware of the peculiarities related to each different department that is in contact with and cannot be driven only by efficiency/effectiveness strategy. This mediation figure should make the mutual understanding of the different parts of the organization possible in order to guarantee a strategic plan that contains all the different instances properly elaborated under different aspects.

I might agree with Alessi when he talks about the "filtering" function of the manager (that is exactly what has been described above). I do not sustain completely from the idea that the manger should not have aesthetic or other peculiar judgments in merit of a certain product. In order to apply filter one should use different criteria that can go beyond the cultural one, and this might include aesthetic and economic judgment (of course combined) as well.

Drawing the conclusion I argue that depending on the position that the manager decides to embrace after a meticulous synthesis of all the factor discussed above, both the strategies presented in the theoretical framework can be pursued independently from the degree of involvement of the manager.

Another important aspect that is a presupposition for a profitable collaboration between the manager and the designer is communication. More than one source (Torsten, Knud, B&O Case) showed how allowing the right people talking to each other is fundamental. Therefore, designers should always be able to talk with the "real" decision makers and, even more important, this communication should be established from the very beginning until the very end of the products' process. Avoiding this dialogue tends to slow down the entire process and having a long decisional and informative chain within the company can result in less effectiveness and major incomprehension.

7.6 Map/Model
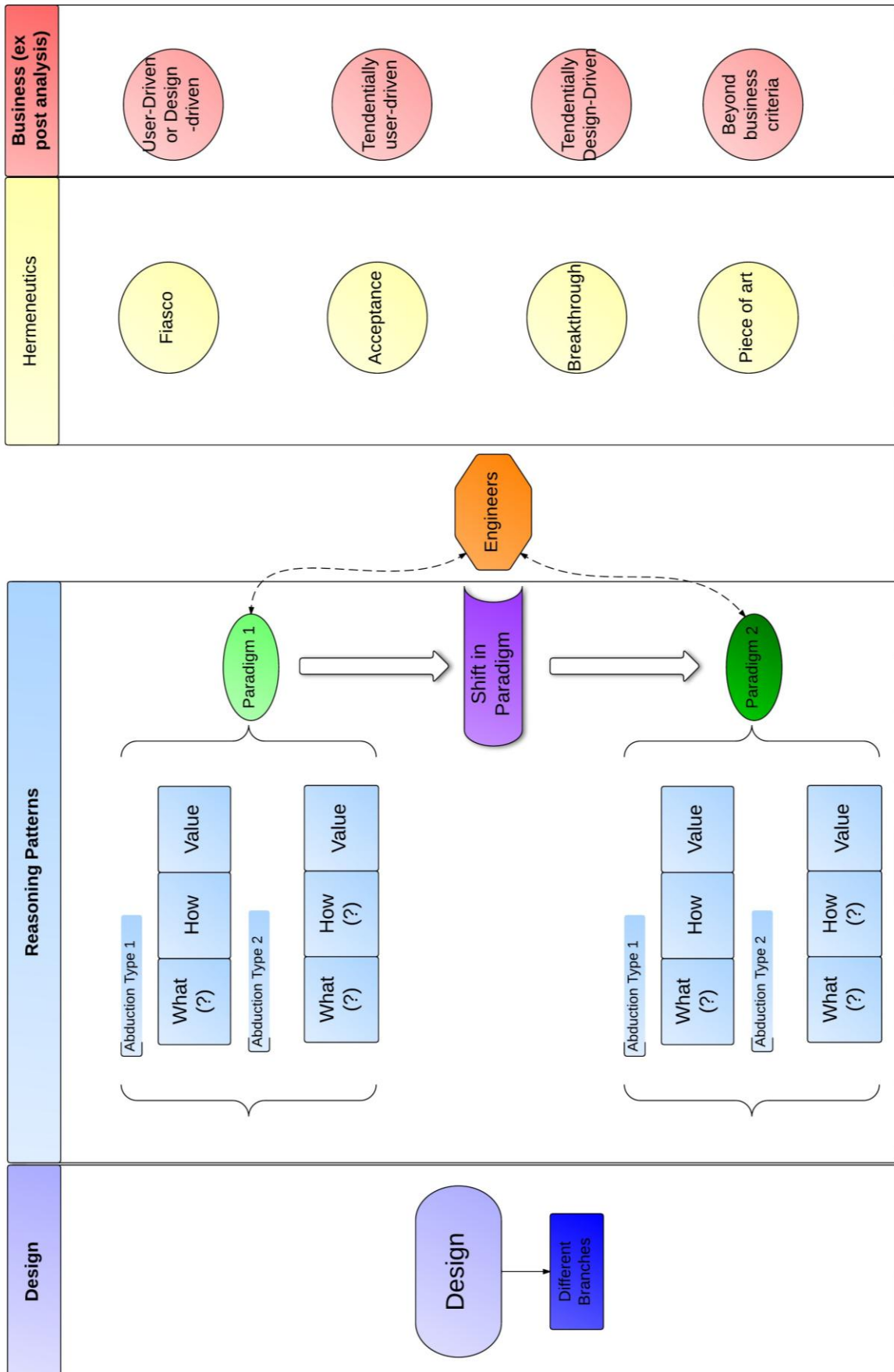
8. Conclusion

8.1 Final remarks

Throughout my entire investigation, I attempted to elucidate a process that, in my opinion, has not been unfolded in a comprehensive manner by the business literature. The goal that I hope to have achieved is to provide a clear and concise overview of the process in its wholeness and partiality, making it available to who might be interested in dealing with the issues mentioned throughout the investigation.

I believe that the hermeneutic approach followed to unfold each part of the process and subsequently reconcile them in a singular framework should allow the manger to focus simultaneously on the major strategic plan and on the particular segment as well.

The different instances analyzed through the use of cases and interviews' corroboration made it possible to develop a "reality check" in comparison to the theories presented in the theoretical framework. The analysis and the discussion provided different standpoints that can be re-discussed and re-interpreted in order to produce new clues in this relatively new field.

Drawing the conclusion it is possible to admit that this inquiry sheds a light on the fact that the use of design as a strategic tool should pass firstly from a better understanding of it. Allowing to gain a better insight of the subject, it should enable the manger to better understand how to deal with different scenarios and make it possible to make the right choices and decisions. Nowadays, intending design as a "final aesthetic touch" or as a "magic wand" to solve all the problems is not a valid option anymore; globalization and more complex problems that companies are facing in an increasingly competitive and connected market are inescapable factors to take into consideration, and having the right tools ready to properly answer to this challenge is as mandatory as it is vital.

8.2 Critical Reflections

In order to respect correctness and transparency I will report some critical thoughts encountered during my investigation; this part should make it clear that the development of the thesis did not lack critical instances, but indeed took them as further stimulus to better approach the whole investigation.

Torsten (Appendix 2) raised one of those critical aspects aforementioned:

"G: If business can understand the process that you follow (complex or not), if it become a sort of tool that the manager can understand; do you think that it could be a useful tool?

T: I don't think so. Because in order to do that I should grant that I can describe the process I'm following. I can't do that...it's a question of confidence, people that hire me must be confident that I will get to a result with their help." [Appendix 2]

The statement above consistently undermines the very core of my inquiry; on the other hand, I interpret the Torsten's critique in this way: attempting to understand the design process is not useless *per se* (in relation to business), it is simply not possible because it is not formalizable. If interpreted in this sense the effort to systematize a field heavily characterized by tacit knowledge is complex but not meaningless. If I were Torsten I would have probably answered the same because I would have seen my peculiar skills threatened by the possibility of becoming "accessible" to everyone.

The purpose of the investigation and the final conclusion itself is not to substitute the designer role or explain it in a way that would make them less indispensable. On the contrary, the idea behind the whole thesis is to clarify the process in order to better understand how frequently and at which stages the designers' presence can better fulfil business' demands, thus making it possible to establish a collaboration that is more profitable for both: managers and designers.

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Table of Contents(Appendix)

Appendix 1

Semi-structured Interview Questions (General Guidelines)

1. Please introduce yourself
2. How do you define Design ?
3. Can you briefly describe the process behind the product creation ?
4. Do you follow only this process or different ones ?
5. [if yes, When you decide to choose one instead of the other ?]
6. Can we talk about meaning in design product ?
7. When realized, a product should be meaningful to you or to customers ?
   a. Do you usually envision meaning or do you seek concrete inspiration ?
   b. Is this approach systematic or you use difference sources ?
8. Do you think that customers understand your products in the same way you do ?
9. Do you think that business can profit from a better understanding of product design process ?

Appendix 2

David Lewis Designers (Torsten Valeur) Interview Transcript

G: The first question would be to introduce yourself, in order to have an overview on your background...

T: I'm Torsten Valeur, Head of David Lewis Designers, specialized in industrial Design and product design, most of the job we've done is for B&O and the office has been established almost 30 years ago; I joined the office 14years ago.

G: I would like to start with a very broad question: How do you intend or define "Design" ?

T:...Well, I don't know...It's a problem solving job...you start, more and less, being plenty of papers and then you need to find out solutions for the challenge that they put in front of you. Actually you could say that you *are giving shapes to ideas*...defining ideas, giving shape to ideas and try to solve what kind of problems those who deals with the phase (in the process) from being created to go to mass production.

G:Related to this process, can I ask you to briefly describe it ? from the starting point to the ending point ?

T:Starting point is very depending on your clients; some prefer rather to describe briefly what they are trying to put in all the parameters and information they can think of and they try to deliver it as a package to you, and your job is to generate an answer out of this package. In other situations you start with nothing and you have to... or maybe the question could be, "what is the next television ?" and you need to research and find out from yourself what is the answer for that, you need to predict where we are going and you need to understand the clients' ability, what they can and cannot do...what it makes sense to them...and you have to extract all this thing, think about it and produce a solution and then you present to clients and then you do the feasibility study of it, to find out if it makes sense or you need to reconstruct it before the part of the actual construction.

G: Can you say that exists a process or different kind of processes?

T:There are different kind of processes, it depends on the clients, depends on the actual project that you are doing...if you are within an known territory or if you have to pick up a lot of information and understandings of completely new fields, as a designer you can be specialized in some fields, you tend to be well thought in what you are doing (it could be a speaker, a television, injection tools), you had to do like the artist are doing, you have got no experience on how to inject medicine, but you have to try to put yourself in the user mind, you need to understand what makes sense for them ...you can only do that only through the understanding of what the actors are doing, you can't ask them question and demand an answer...the only way you can get an answer is only by asking yourself and the only way you can ask yourself is by BEING a person.

G: When you decide to use a certain kind of process instead of a different one ?

T: It depends from the understanding and the type of clients; if you have a long relationship, you spend less time on breaching in the mutual understanding and you will spend less time on the orientation of the process; if it a new client, they might uncertain about what you are doing and you will spend more time on going to next steps (mutual understanding).

G:Can we talk about "meaning"? when we talk about product design creation ?How would you elaborate on that word when we talk about product ? can we assign meaning to a product?

T:Yes, because... when you make a new project, it has to be special or has unique reason for being there and on the market; It has to make sense, It has to give something that hasn't been done before...you need to do something more than just say, this is something that we can make money on...On the other hand , meaning is also in the needs of the clients...in the sense that they are able to produce something within the territory that they have and sell it through the channels they control.

G: When you realize a product, this product should be meaningful for you (as a designer) or for the customers ?

T: ...mainly the customers; I'm not an artist; I'm a service person, I'm doing services for clients, he is buying "thinking time" here, and you try to think and come up with an answer to a problem, to make a solution for him...you are doing it for the sake of other people, not yourself. You could say that an artist work for himself...but there is a lot of methodology that is related to the artist, because we are in a territory where we can't find answers outside ourselves, you need to find it within yourself...therefore you can say that there is a part of yourself. When you are able to work as an actor you can find your answer *by* yourself, but you are not doing that for yourself.

G:When you have to create a new product, do you usually start from a pure theoretical concept that you have in your mind or you just try to get inspiration from the reality around you, from the surrounding, from the customers?

T: I would say both. Normally, given the fact that is a problem driven process, is facing the problem that you start in one hedge of the problem, you start to work from there on and in that process you are discovering in what you are working in...you discover new questions all the time, and that makes you start to remember things you have been seeing and thinking about the observation you have done previously and also starts your eyes to look on certain things depending where you are...(?)no matter what it is...when you are watching a movie or being with your friends, you talk about thing that are related to your actual problem and in that process you start to define [...]

G: It's not like you have vision...

T: The vision comes ! but it comes somewhere in the process, the start vision is more related when you do something initiate by yourself..

G:So...when it is related to business, you don't let yourself be guided only by vision in creating product ?You tendentially try to understand the customer needs and to look around...

T:It's difficult because you can say that vision comes in the process, but the vision is based on a fundament that is related to meaning that it has to do...it has to solve a problem... The reason is not from the blue sky, it is funded on something, it's grounded but it doesn't follow a systematic step by step process (Ed. linear)...it comes in...

G: Imagine that you have a certain kind of meaning that you want to relate to a product and you want to deliver this meaning to the customers; in the process that you follow, you put some meaning in a product and you say " Ok, this is the meaning, customer try to understand it, or you first go and say "Ok, customers more and less need this so I need to shape my meaning to their needs";Is the customer that should understand you or vice versa ?

T:You cannot put it in that way because it's an artificial construction.

G: Do you have a systematic approach or you a have a differentiated approach, case by case ?

T: It's rather case by case. Depending also on what has the clients done, what kind of understanding they built it up and presented to you.

G: Can you briefly describe, more and less, what is different in certain kind of process instead of the other?

T:Some try to make up a very long report saying in which direction you should go, they provide trend analysis, they prefer a construction based on certain elements, it is very defined...sometimes they thought that they have almost made the product before and then you go in and try to understand why they come to that conclusion, what is the true meaning behind the words. [example of a potential product description]

G: we could say that you have some kind of boundaries sometimes that you need to deal with ?

T: Quite often; you follow them or you break them depending on the situation

G: Can you break them ?

T:Yes.

G:is it something usual ?

T: Depends from situations and the needs. If it really makes sense to break them and allows you to jump two steps ahead...then you do it.

G: you break them only if you have...

T: only if there is a reason to it, a meaning.

G:Next question is always related to product, right ? and it's from the designer point of view. Do you think that each time customers understand the product as you do or maybe sometimes they can't see the meaning or can't really understand the product as it was designed?

T: There is a danger of misunderstanding. Especially when you are in hurry, if your time frame is too short, you do what usually other people do; you eliminate the second thoughts and the second thoughts are very important tool for creating a result that is more understandable by people. you should think about something like killing your darlings, breakaway your common look because every person has a kind common look to a thing, you must be able to get behind that and get your fresh eyes again to try to understand what are the needs also for end user. It also a question of what kind of market you are in, some market can be very conservative...for mobile phone market for example, is a very conservative market at the moment; there is one formula of how mobile phone should look like; which is more and less the Apple phone. Everybody is doing that .If you break that away that, you have to be very convincing, which means that you have to

spend a lot of time as a designers but much more the engineering group should be allowed to spend much more time. The engineering people of any kind of product development are the most important persons at all...they are more important than designers and marketing people. They initiate us...[Apple example]

If your basic idea is able to break consensus that you are allowed to make those kind of revolution that has been done several time. If you hadn't carry through it will be a failure, because you didn't follow the path, then you are crazy; that would be the perception of your result but if you can carry completely through then you will be the genius.

G:Ok! Correct me if I have misunderstood. We can say that innovation, in the case of breaking through products, is more engineering driven then design driven?

T: Not necessarily. It can be design driven but, the guys that solve all the problems are the engineers and you , as a designers, are absolutely depending on them. The ending result is very much depending on the fact that they did their job well or not. When The job is very much related to designers you have to have designers work very close with them until the very end of the product.

G: Can we say that designers are kind of dependent from engineers, in a hierarchy scale, or vice versa?

T: you can say that designers are setting a path, you are putting up a goal; you have this idea, this direction which is not created by the engineers. We start finding a path, and when you have a very good relationship you define your path through inputs and eventually you find engineers that get into it. Multi touch gesture, for example, although is an old invention, that invention was done by an engineer but was a person that through design thinking understood how to use it and then engineers make it work perfectly.

G: In that sense, it's a mutual process; you go back and forth from engineers to designers and vice versa?

T:And you will never get this type of interaction if you try to control and define the process from top management; you will never get this kind of result.

G:so, you're saying that business is usually problem or an obstacle to this kind of process?

T:It can be an obstacle when business wants to control process. When they try to define everything initially. Because they decide upon their own imagination and fields that are quite limited. Your

end result stays within this small segment. It could happens that we are talking about a set of knowledge that can't be reached through a managerial process and if they control to much they don't enable other people to get there. The best thing that the management can try to do is *trust*...trust the designers, trust the engineers.

G: do you think that business should have a better understanding of the design process ?and do you think that they could profit from that ?

T: it could be. They could profit by accepting that they don't understand the process and they don't have to understand it. But they have to understand how to facilitate it. That is more about ensuring that the right people are talking to each other.

G: Do you think that you can facilitate something that you don't know exactly what it is ?

T:You can say in another way. All the Danish companies in history, that had a life of design; most of them never had a design driven process within the company. When they had a problem, they asked the designer and this came up with a solution. It was good enough to make the company grows. [Danfoss example]When the company becomes bigger the management use more time to understand the process and use more and more time on researching on process and try to understand.

G:In the end, we can say that actually management should not enter in those question related to design product?

T: management should be open in a way that...when you have a contract with a designers, you should make sure that the designers can talk with the decision making people within the company; taking away all the boundaries...

G:So, the important thing is that the communication is clear...

T:if it is clear, you have a transparent relationship. It's easier to do a design for a company where you are actually talking with the right person(front/founder) in the company. You have the feeling that he can take decisions. You can make process going on quite strong, smooth and fast compared to other companies where you have a lot of committees, where nobody actually can take a decision or can define why they made that decision and not that one.

G:If business can understand the process that you follow(complex or not), if it become a sort of tool that the manager can understand,; do you think that it could be a useful tool ?

T: I don't think so. Because in order to do that I should grant that I can describe the process I'm following. I can't do that...it's a question of confidence, people that hire me must be confident that I will get to a result with their help.

Appendix 3

Knud Olscher Design Interview (Knud Olscher) Interview

G: The first question would be to introduce yourself kind of briefly, maybe talking about your background...

K: I'm an old designer, I'm more than 80, I'm still working and I think that my work and pleasure are combined; even when I was employed by Arne Jacobsen in my young days, that was the start of my career actually was in job architecture in an important scheme in Oxford building a modern version for the old traditional colleagues (kind of school); and while I was doing that, before that, I decided to (00.57save room? for specializing) and I decided to do that for Arne Jacobsen! He was a great master and he was very relaxed, he was used to came a couple of time a day and ask if there was anything new, you know, you have to push push away. My design career started actually by designing and winning a competition for sanitary ware and they said they couldn't produce it and therefore it was doubtful but I found a company who could do it and I got a British design award, [description of models and awards]. Then I come home and I was leaving Jacobsen because, I mean, he was pushing me too hard, so I moved in a very big office and after a couple of years I was asked: "would you like to do the competition for a new university?" and if you win you can become partner. This was a huge competition and I won it and that was the start of the partnership and coming into huge architectural office which was a very different from previous experience and a lot more problem. Besides that, I was running my design department as a little group in the big office, you know, and I continued. Than I was approached by K.P. [description of the commission from D Line]... 50 years after, I'm still designing for D Line and this is a successful story also because I had a fantastic celebration with the company. Well, and then, from that on, I have been designing all these utensils and we have almost 30 different companies which are our customers and we are working on engaging further more companies, I have 6 associates. This is my retirement job, I started the architectural office when I was 65 , I think, that's the age when you have to retire a bit, you know, I started this new firm and being known for this for 15-16 years...it takes a lot of time to really get a design firm, working well, you know, it's a long long term investment to do design because first you have to design and get the idea, first you have to a find a plan, then there a long process and then it might

be that start but then it drops out again if it is not a longevity kind of product....when you're designing lighting pictures then you are very much dependent on the light source like LED...Is this the kind of answer you were looking for ? Maybe I forgot what are you aiming...maybe we should rather talk about the structure of design. I will be a designer from a commercial point of view.

G: Yes! It was just an introduction, to understand your background, which kind of knowledge we are talking about, which kind of view...

G: The second question will be: "how do you define design?"

K: Well, by doing design! because I don't think that you can put words on it. Each of the part of the advertising, each part of your image, each part of how you try to communicate your ideas or your identity to costumers; so, you can have also a language or words for design but really design is what you are doing and there is all kind of design[Example of New York Company]. I don't like to play the big artist, I like to design good social items (I designed for Ifö for instance), I have being designing for Ifö for 14 years, I think, one day one of the responsible came to me and told me "how may lavatories do you think you have designed and I said: "I don't know and I'm not into it" and he said and it's about 23mln pieces. So, If you pile them up it almost rounds the world or something[calculations]. They have production and they have suppliers in whole Scandinavia with Ifö. You have to understand that when I design for Ifö the span from a young Danish architect to a well know company in England and Swede, I mean, they need to like all your pieces while if I' designing for ERCO, it's a little design object, and also for Flos, this is much more sophisticated too. They think in very different way according to what the target group is...if you don't understand that, when you work in for ERCO in Germany, for example [Brief description of company].

Design is also competition, I mean...we all meet in our offices, our offices have our chairs, our lavatories...we meet on the big German meeting and then we look at each other, you know, if you don't...I'm in the top...it's an exciting battle all the time, you know, to be in the front...

G: Always related to design topic, could you briefly describe the process that you usually follow to create new product? We talk more about product and not architecture, like for floss...

K: First of all, regarding floss, we are designing new light sources which are much more delicate...in a way, it's a marvellous change from this big item and the all the sizes are much smaller , also I think you have to design something which is in one way maybe elegant, maybe

new and exciting but also very discrete because if they are used, for example, this year they were used by Boss, this big German manufacturer for man clothing, if you have Boss as your customer then you are sitting on every important street in the whole world, I mean, they have shops all over the place. That is really a combination of 2 strong brands which go together; boss use ERCO and that is fantastic way of combining things...but that wasn't your question...

G: Yes, I mean, the point was: thinking of you as a designer. You sit and you need to create a new product. Could you briefly describe your process?

K: The processes are so different I think. One of the very important things is [for example] pram for children; I remember when I was children the pram was just high and either pieces ware sticking out [description of a new concept of foldable pram and new concepts idea (Berendsen) and how this can be well received globally].

Good Design and nice looking items are fantastic source for expanding your business. Companies are very happy with us and they are reporting that now; they are working on other tools. Besides that we have of course a lot of companies are not so happy. Of course you have also stray customers who come in [and are not as structured as other big company like ERCO where you have a department for each operation but it's a single business]. These are the two very different customers you deal with. You must be very interested in the commercial side.

G: Actually, I don't want to talk too much about business itself, I'm interested in how business understands the work that you do. I'm trying to investigate more this side. Just feel free to talk about your work not on the commercial side also the design part and the product production.

K: The design is like architecture. What you call cool art form, I mean, if you are a painter, my daughter is a bit, I mean, it's wild and crazy and so forth but I would be much happier if something that I design like this [showing a thermos] fulfil a purpose. This was the original thought of this one... [Description of how the thermos works]. This we like being part of our design: combination, knowledge, thinking...having wild insights you took, (i.e.) you press the button and then goes up and so forth [referring to the pram]. It's a tough game at the same time, just to get this design well planned. It would be nice to have some very experienced people; we didn't have that so...it was my son that was in charge of that...

G: Do you have one process or you have different ones when you want to design a product?

K: you mean, designing different products?

G: Yes. I mean, when you have to design a product ...there is a standardized process that you follow or there are different ones?

K: I think that they are very different you know. It's a lot of thinking and what is the challenge and so forth

G: Could you say when you decide to follow a certain kind of process instead of another one? Or it really depends; you can't really describe it...

K: Well, the big issue is related to get the right idea, I think. I had a very good friend who was asked:" what is design?", and he was a fantastic architect and he said: "well, it's a matter of pushing it all on a table, you know, and then push it around until you get it". And that is architecture or design or whatever.... Using this very simple words, I mean, "to put everything on the table" is thinking of target groups, functions, technical, production way, you have to think about all this different issues which all are...everything is part of the final product, so unless you lose part of it; it's not good design , you will have to think. That means that I'm not critical towards this one [i.e. the thermos on the table]. I think that there is a fantastic discrepancy (?) between plastic and stain steel, I mean, this should have been a more modest material. It was George Jensen (who commissioned) and of course in this one you are combining the engine, the lit, the pouring, all the complex items are in this...that is the design art...

G: When you talk about this process of putting on the table the pieces...those pieces...

K: It's actually I kind of visual picture of a process, because the other one is...we make an agreement, we start to make the first sketch and we make a market's research and then we come out with a sketch based on this and then, at a certain stage, you are asking the client: "is this satisfactory?" and they make some actual working drawings for manufacture and then marketing and then finally you may be lucky and find a product. Unless all these things are fitting neatly together, it's silly. And George Jensen, for example, the royal Copenhagen, I mean, they are silly, I have to say. Because they don't know how to do this. They are like: "Ah, now we found a famous international designer and he makes some crazy shapes...that doesn't save the shop, I think, I think they should be much more back to functional and features and then add all the artistic part to that...there is another puzzle, when you chose a designer, the name, I mean we are working for Floss, why don't they work with someone in Milan, it's more exciting, sometimes getting, design from far away or maybe we are better...

G: Maybe they want a design company and they also want some new inspiration from...

K: when ERCO approached me, it was to get in Scandinavian market using Scandinavian designers. [Business owners talk about each other regarding ideas and design and also tend to cheat each other].

G: Talking about this part, you see and idea and then you need to create something from the idea that has been provided. You said that you usually make some research on customers. Is it always like that? In the sense that, you always start from customers' needs? Or sometimes when you create something that you have in your mind...

K: Well, it's very different. I had a certain idea for cooking utensil, it's has been almost impossible to persuade anybody because they said, in some countries you have people like me, I mean, I am cooking myself with my wife, I am cleaning my utensil and so forth. But if you are very wealthy, I mean, you do not bother about that, then you have someone in your kitchen and you don't care about your cooking utensil, again, it's a certain group(young) who care about that and are willing to pay extra for design, I mean, it's better finished and they better designed...very often, it's a bit more expansive because you have the marketing expenses and all this kind of things for competing with a lower kind of market. Of course, there also this market business where you have exclusive, D Line were discussing [with a client]: "are we here? [in the completive pyramid] or we used to be there because..." [Description of the discussion with the clients regarding the market position with the help of scheme on a paper].

G: When you kind of create a new product, can you say that must have a meaning for you?

K: Yes, of course. We were interviewed by the former boss of Danish Design Centre ad he said "your designs really are marked by a certain personality, influence and maybe that is your problem. You should maybe design more for the firm, when you design Floss, it should be a Floss item. I think when I designed by ERCO, it is ERCO. They said to me, now you are designing for me and now you have to be ERCO designer otherwise I won't use you. So, we add a little bit of Scandinavian softness, very normal, very straight line and so forth. We add a little bit, I feel and I hope of course...being modest.

G: It's a very personal question, related to design of course. When you need to create something from scratch, do you usually have a pure theoretical idea, like an imagine in your mind that you then put down or you need to go out and get inspiration from the reality around you ? You need some empirical inspiration here and there to create your idea?

K: It's very different when I have to design, well I hope next year to design a new seat for Ifö. There, I have to think, how is human being, is it changing his way of taking bath? are we taking more shower? , are we laying in a long bath? Is it furniture more important? This is a very complex thing, while if I have to design a new cup, and I have some ideas, it's much simpler idea, "how can I avoid to burn my fingers when I want to take the lit off and it doesn't boil over. It's very different, I mean, the product I talked about, the furniture, or maybe, the lavatory is secondary part in the toilet, I mean previously the toilet room was very simple, and very nasty, but now it became more serious, which is very positive, I think. It's a very complex starting, if the lavatory is just a detail, I mean, there's also this paper, and cleaning, new seats, and maybe handicap support, I also think people being elderly and so forth, I mean, if you combine living situation when you start to have small babies and they have to be cleaned and changed; and then you have a more normal type of use, and then you have elderly people and they may need supports. That would be a fantastic way if you could launch a new system where you think from being a new family wit babies to the end of your life. I mean you don't need to be the same family living in the same bathroom but maybe they are exchanges several times, may be you have to solve different problems. That is another very exciting, where are you kind of hiding your medicine? How do you take care on Saturday evening, when n you want to look very beautiful and you have to tell yourself a lie that you are much younger than what you are and then on Monday morning you wonder why you lied. It's all about these different situations, that makes also very exciting I think: if you can combine all these and put them in the same spot, you can produce a good piece of design. Is that a clear answer?

G: I was wondering, do you think that sometimes my questions are not very linear ?

K: No! They are really good, don't bother with it.

G: If you need time to think about my questions, please feel free to take it.

K:No problem. I'm used to it.

K: They were asking me, how can you combine the fact that one day you are designing a lavatory and the other day you are designing a national art museum in Bahrain? Which was very...[presenting some of his architectural works on the book].

G: in case like this [Ed. designing local buildings] you tendentially...

K: I try to understand the local tradition, and also the sizes, I mean the height of this building was the same height as the local palaces. But one of my colleagues came to Bahrain, he was living in

a town 1 km from the city. It's silly; it's a very small society... [Comparison between big building in big realities like New York and other kind out of context like Bahrain].

G: So you say, the environment shapes the way you design something...

K: Yes. That was a beautiful way to express it. Thank you!

G: He he...

G: One of the few last questions. Do you think that customers understand the product as you understand it or sometimes there might be a misunderstanding of what you were thinking about?

K: That's a very big problem, I think. If the customers were thinking the same way as me it would be terribly easy, you know, it's not like that. My own house for instance, I design it 1970 and it's just being on conservative list, which means that it would be like that forever; you need to have a big battle if you want to put it down or something like that and you are also ...it's a balance, that was designed as one big huge open space where the kitchen, the working space, the living room are all in one big floor space. [Using the use as example of freshness design in time]If you can obtain that, that is another important [aspect] longevity; kind of thing that you don't exchange; fashion is the opposite; you need to have new coloured shirts, I also buy things like that...the cars are developing fantastically, the fiat 500, is reborn and everybody was excited about it, it's cheap...it not the ideal , Alfa Romeo is much better...again it's a meter of fitting something, speed, light and so...I wouldn't buy a fiat 500, I think it is way behind my kind ...I would rather buy an Alfa Romeo or Audi...which Audi is also very German kind and it is very much Italian...

G: I will repose this question just to be sure that I understood correctly. Talking about the product and the meaning that you decide to allocate to the product. is it more important for you that you are able to transfer your meaning to the product or you care more about what people are going to think about it, how they will understand. You care more about "this is my idea I want...I don't care if people don't understand".

K: I like to combine those things. That is very important because, you are a prostitute if you just design things that you think that people like. It's a sheer balance, I heard the other day a fashion designer who said "I don't care about what people likes and don't like, I'm an artist and I want to do like that" and I said "Oh! That crazy chap" [Telling episode about this fashion designer]. It depends what are you looking for, you maybe are designing for 3 people up there, I'm more interested in designing in social coherence. Ifö is also my negative part at designing Ifö. Are you willing to go to compromise? [Experience in Ifö].

Therefore a think that design is a lot of business, if you cannot think in the right way and know about the future, the economy of tomorrow and so forth, it's a tough game which also see in Germany where all the company true to sell this and this and so forth. It's a very exciting economy, a sort of peaceful war, I think.

G: Do you think that is relevant the way that business understands design? in the sense that, do you think that is important for business to understand the work that you do in order to better communicate or it's actually better that they remain separate in order to avoid strange communication. It's better: "I'm a designer, I do what I know; you need to trust me, you don't need to understand what I'm doing or it's better for business to acknowledge what you do, the process that you follow to make it clear, to make it evident in order to improve the communication between business and design?"

K: The latter, is the ideal one. The sale people must understand the product, that is very very important unless they feel for it, unless the communication between the designers and the top of the business is safety, is very very important I think. And that is very often not taken care, I think. I knew the B&O designer very well, he just died unfortunately, David was living far away from B&O and B&O was far away in Jutland in Copenhagen. David was sitting here in Copenhagen. It's a very long trip but every Friday he took the car and went out and started over here in Copenhagen, because he has to live in Copenhagen while he can go to speeches, to art, to design shops. [Where B&O is located] is so remote and you have no impulse. That's a picture of a design separation but at the same time, unless you really understand each other and what can carry on B&O design because they are also mixing other problems, they are to small company to be completive with the bigger ones. This is a very small company that might have a good idea, they are expanding but they are really getting much bigger than what they are and usually are bought by bigger competitors. I actually had a chat ones with Philips and I talked about ECRO, they said: "I have heard about them, it's a company that we should buy". It's very easy that if you are a big company you can buy the smaller one. It's a very exciting problem you have. When I have been to Ifö one day, I actually need to get out that manufactory and shake my head because they are much more concerned about sizes, machinery and production. [Description of problem with Ifö and distance like for B&O and David]

G: I just wanted to understand if the understanding between business and designer is an important factor or not...

K:Well, it is important but it is also important that the designer is able to understand the business. [Sometimes the dialogue between designers and management, also in the early stages is not seen as profitable in Knud's point of view]

I never saw that before, I think it was a good question...