OPPORTUNITY DESIGN

Master's Thesis

Cand. Soc. Organizational Innovation and Entrepreneurship

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Abstract

This thesis is the outcome of a case study aimed at exploring how designers create opportunities in organizations. The focus was to study whether opportunities can be designed, as well as discovered and developed, which are the main notions on the nature of opportunities discussed by the scholars already. Therefore, three companies - *ACME Europe*, *Absurdo Idėjos*, and *Biržų Duona* were studied in order to collect empirical evidence, so that the research question would be answered in the most valid and reliable way. All of them are widely recognized for their design solutions, and have even earned international recognition, therefore, it was interesting to explore how design shaped the opportunities in these companies.

The thesis can be seen a pioneering attempt to establish a common set of steps into designing opportunities, therefore, an inductive approach was chosen to build a framework out of the empirical and theoretical data gathered. Thus, the thesis consists of firstly analyzing the existing theories and discussions about the nature of opportunities, design thinking, and effectuation. The aim was to understand the whole academic and professional literature about the topics mentioned, so that the research would be designed to best serve the scope of the study. Therefore, a multiple and holistic case analysis was conducted, and primary and secondary data was gathered in order to examine the field through different angles.

The outcome of this study is presented as a model for opportunity design which was established through analyzing general patterns of the companies and their design methods studied. All the case companies see design in their practice as a problem solving routine leading to new markets and profit. In addition, it was recognized that opportunities *as designed* can be seen not only in terms of profit, but brand awareness, improved public image, and value added, as well.

Keywords: opportunity design, entrepreneurship, design thinking, effectuation, case study research.

Table of Contents

List of figures

List of tables

1. Introduction

Opportunity design? What is it? These and similar questions were the main reaction whenever I talked to people about the topic of my thesis. They seemed interested and intrigued, but the concept did not seem very clear to them in terms of what it represents. It can be quite surprising in a way, because 'opportunity' as a term in entrepreneurial literature has been discussed since the beginning of the 20th century. Design movements began around the same time. However, these two concepts did not coexist up until 2001 when Saras D. Sarasvathy discussed entrepreneurship as a process of creating artifacts, and later on introduced a term of 'designing entrepreneurs' (Sarasvathy, 2004). This raises the wondering, why it took so long to acknowledge that entrepreneurship and design are similar in ways of creating either economic or physical artefacts. Instead, there are many empirical studies conducted about the nature of opportunities on one hand, and about design thinking as a tool for problem solving on the other.

There is a lack of research combining those two fields as an additional study of design methods in entrepreneurial opportunity creation. This led a group of scholars to investigate the field through opportunity design as a way of "understanding entrepreneurial opportunities through design thinking" (Nielsen, Lassen, Nielsen, & Mikkelsen, 2012). They argue that "creative design and entrepreneurship has much to learn from each other due to the distinct focus on respectively the front-end and the back-end of the process of opportunity discovery/creation, evaluation and exploitation." (Nielsen et al., 2012, Introduction section, para. 2). Thus, this thesis is focused on exploring how the front-end of design can be modified, so that it could be applied to entrepreneurship as a way of designing opportunities, independently of the already existing notions about the traits of successful entrepreneurs. I will elaborate more on the relevance of the topic, research question, and the scope and delimitations of the research below.

1.1. Motivation and research question

This research was primarily driven by the personal curiosity about design and its methods used to create various artifacts and solutions to problems. It could be stated that it all began back in 2013 when I was enrolled in an online course organized by Stanford University called *Design Thinking Action*

Lab, and got introduced to the concept of 'design thinking' and its applicability to business and everyday life contexts. It was an exciting six weeks course, which has planted the idea of human-centered design into my mind irreversibly. Then, after a year my studies at Copenhagen Business School began, which allowed me to explore the fields of interest even more, and so, I was confident I would research the notions of wicked problems and design thinking in my thesis, as well.

However, my supervisor has advised me to look into the concept of 'opportunity design', which I did, and got surprised that there is almost no research conducted in that field. There is a vast amount of studies and discussions in the academia about the nature of opportunities as either discovered (Kirzner, 1979) or created (Schumpeter, 1934) by entrepreneurs, but almost none – about how knowledge from creative design can help implement opportunities in the market setting rather than just focusing on the fuzzy front-end of design (Nielsen et al., 2012). This got me wondering: if entrepreneurship can be seen as "firm *design*" (Sarasvathy, 2004, p. 523, emphasis in original), can designers be seen as entrepreneurs in a way of creating profitable solutions and artifacts? I was hooked, and decided to explore designers as creating solutions for profit through their everyday designing activities and techniques in the contemporary business environment. With this thesis I hope to provide an additional contribution to the studies about opportunity and design thinking in the academic and real life contexts.

Thus, the aim of this research is to explore whether designers create opportunities in ways that are different from entrepreneurs. Also, I will seek to answer whether creative design as a process is in any ways similar to entrepreneurship as a process in terms of creating opportunities. In short – if opportunities can be created and discovered, can they also be *designed?* Therefore, the research question is:

How are opportunities for profit designed by designers in business context?

The research is thus designed as an exploratory one, seeking to gather empirical evidence, which would answer the research question and provide a deeper understanding about the phenomenon. Since the field of interest is still a novice and emerging one, the aim of the study is to shed the light on design and its principles and methods to be applied to entrepreneurship in terms of opportunity creation. Therefore, the research is seen as an inductive, seeking to establish a framework for opportunity design. However, it would be too optimistic to believe, that the empirical data gathered

will provide such evidence that the framework presented would be completely finite. But it is a leap into a new concept on opportunities, inviting scholars for further investigations and research in the field.

1.2. Scope and delimitations of research

As a pioneer in the field, I first needed to explore the literature and to define the terms of 'opportunity' and 'design', and to what extent the scholars have already contributed to merging these two concepts, so that I could clarify the focus of this research. Then, I looked for companies to be explored in the context of this novice 'opportunity design' concept. And so, the scope of this research is limited to organizations, which use design in their businesses. However, I did not limit the search for cases to a particular type of design or to a particular industry, because it was interesting to see whether companies from diverse markets perceive and use design in ways that are similar or different. The only criteria was that the cases would represent design in a business context, which is why the priority was given to organizations rather than artful creators, because the former provide a steadier context in terms of opportunities for profit.

In addition, there was a geographical constraint as I was residing in Lithuania during the research process, so, the companies explored are all Lithuanian. This provided me with the advantage of using my mother-tongue in the process, making it easier to grasp specific meanings from the data gathered. However, it also limits my research to the extent of whether the findings would apply to other countries as well, but I believe that the chosen research design helped in exploring the design field in ways that can provide reliable and valid data. Thus, this research is the outcome of hundreds of kilometers driven across Lithuania, meeting lots of new people, visiting companies and explaining the research topic until I finally got three of them to agree on contributing to the study. The structure of the thesis together with the outcome of the research are presented below, and I invite the readers to join me in exploration of this novel study on opportunity design.

1.3. Structure of the thesis

The thesis consists of 6 main body parts, starting with the introduction to the research area and the empirical context chosen to answer the research question. Then, the choice of methodology and research design is explained in the second chapter, where I elaborate more on the data gathering methods employed. Also, this chapter includes important considerations about the quality of the research findings. The third chapter outlines the theoretical background and analyzes the literature from entrepreneurship and design fields, so that the framework of the theories in use would be established. In addition, the chapter also builds an understanding about the context of the research question in mind, and how the studies already conducted contribute to that particular manner. It serves as a starting point into digging deeper and collecting empirical data. Which is what chapter four represents. It includes the descriptions of all case companies explored in the study, and elaborates on their design processes and what kind of impact it has created. This chapter represents the basis for answering the research question, and the analysis of the findings can be found in the fifth chapter, where I engage in a cross-case analysis and look for similar patterns from each case. I also discuss in what ways the cases differ from each other, and then present the framework of opportunity design, and implications for further research. Then, chapter six presents the conclusions and closes the thesis. The whole outline of the thesis is presented below.

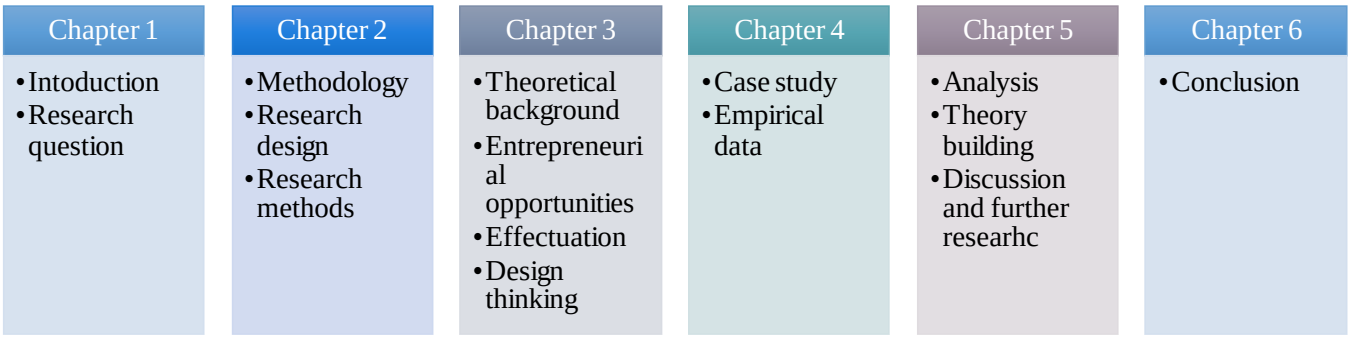

Figure 1. The structural overview of the thesis

2. Methodology and research design

2.1. Research philosophy

Before starting any kind of research it is important to take on a position in terms of the nature and the development of knowledge. As all research work is conducted in order to explore and answer a specific problem, each researcher develops new knowledge (Saunders, Lewis, & Thornhill, 2009). Therefore, when choosing the right strategy for one's research it is important to be aware of philosophical commitments that are closely tied to the researcher's worldview (Guba & Lincoln, 1994). Research philosophy can be seen from three major angles: ontology – dealing with nature of reality, epistemology – concerned with knowledge in a particular field of study, and axiology – concerned with judgements about value (Saunders et al., 2009).

In the case of researching such an emerging academic field as *Opportunity Design*, the most important objective is to gather as many insights as possible. Which is why I did not limit the research based upon strict definitions of ontology, epistemology and axiology. I wanted to explore the research topic from many angles, therefore, I engaged in collecting insights and materials from sources that could best answer my research question. I believe that it would have been impractical to strictly choose between interpretivist and positivist research philosophy, because this research can benefit from both of them. This point of view is called pragmatism, and it "emphasizes practical solutions to applied research questions and the consequences of inquiry" (Giacobbi Jr., Poczwardowski, & Hager, 2005, p. 19), putting the research question at the core of the research philosophies adopted (Saunders et al., 2009; Giacobbi Jr. et al., 2005).

"Truth is MADE" (James, 2010, p. 150, emphasis is original), and so, the reality is the outcome of experiences and actions of social actors. Whatever they do today will influence their reality tomorrow, because the "experienceable reality, both it and the truths men gain about it are everlastingly in process of mutation-mutation towards a definite goal, it may be — but still mutation." (James, 2010, p. 154). Truth in pragmatist science is never an absolute concept, because "To establish a truth pragmatically is to settle a controversial or complex issue for the time being, until something comes along to dislodge the comfort and reassurance that has thereby been achieved, forcing inquiry to

begin again." (Cochran, 2002, p. 527). Which is why pragmatism is a reasonable approach to study how designers and businesses work together, with their actions and knowledge changing and developing over time, with the context playing a significant role in constructing the meaning of things (Dewey, 1905; Giacobbi Jr. et al., 2005), and with their actions concerned with nothing less than "the carrying out of ideas, than the execution whether strenuous or easeful, of meanings." (Dewey, 1906, p. 306). Designers create meaning through acting and interacting within the problem environment, which is hardly finite, and so, pragmatism allows me to explore the topic with regards to the research question as a priority rather than engaging in "pointless debates about such concepts as truth and reality." (Tashakkori and Teddlie (1998), as cited in Saunders et al., 2009, p. 109).

And since design as a process is a never ending endeavor, my goal as a researcher is to understand the subjective reality of designers and to make sense of their methods. That would be a basis for interpretivist approach, especially since I will explore the business environment, as well. This makes the research area a very complex and unique, with diverse individuals and conditions forming a coherent whole at a given time (Saunders et al., 2009). "Because human experience is meaningful, understanding not only expression but also behavior requires interpreting the complex and shifting systems of symbols through which individuals encounter the world and with which they try to cope with it." (Kloppenberg, 1996, p. 108), so, it could be stated that I have adopted interpretive pragmatism approach into seeking to make sense of designers' work.

While interpreting the reality, which designers are constantly constructing, it is hard to avoid subjectivity of my interpretations. But under the view of pragmatism, whatever my findings will be, they will not be a definite truth, but rather a milestone in the research of design and entrepreneurship fields, with further investigations continuing to add on new insights. Thus, interpretive pragmatism allows me to explore the topic in its natural setting, acknowledging the nature of reality as a never ending process forming ever new knowledge; and to study additional resources for further investigations.

2.2. Research approach

There are two ways to treat theory in one's research: the deductive or the inductive approach (Saunders et al., 2009). In deductive approach theories and hypotheses are developed and then a

research design is applied to test those hypotheses, while the inductive approach is focused on collecting data and then developing theory as the outcome of analysis (Saunders et al., 2009). It is important to choose an approach early in the process because, as elaborated by Saunders et al. (2009):

a. it enables the researcher to decide on the research design, which would be the most appropriate for collecting evidence and providing good answers to the initial research question after analyzing those evidence;
b. it helps when choosing research strategies which will work and, importantly, which will not;
c. it enables to adapt the research design to provide constraints.

Opportunity design is an emerging academic field with almost no previous work to rely on, only that of Nielsen et al. (2012) with their attempt to develop the concept of opportunities as the outcome of creative design effort. And it is believed that:

> With research into a topic that is new, is exciting much debate, and on which there is little existing literature, it may be more appropriate to work inductively by generating data and analysing and reflecting upon what theoretical themes the data are suggesting. (Saunders et al., 2009, p. 127)

Therefore, the most appropriate approach to apply in my research seemed to be the inductive, or theory building approach (Saunders et al., 2009; Eisenhardt, 1989). The research conducted can be seen as an explorative, seeking to clarify the general understanding of the field (Saunders et al., 2009), and the research question of *how?* designers create opportunities. However, the findings of the research shall not be considered as final and definite. My attempt to develop a theoretical frame shall be seen as a pioneering effort into bridging entrepreneurial opportunity and design methods. And any findings concluded from analysis shall, under no doubts, be seen as the way forward into developing a framework for opportunity *as designed*. I will describe research design and methods applied to answer the research question in the following section.

2.3. Research design and strategy

Research design is a logical sequence, allowing the researcher to connect empirical findings with the research questions and conclusions; it is a plan of getting from the questions to the conclusion of the research (Yin, 2014). "*The function of a research design is to ensure that the evidence obtained enables us to*

answer the initial question as unambiguously as possible." (de Vaus, 2001, p. 9, emphasis in original). Thus, it is like a reasonable framework for a researcher used to collect the data in ways that answer the research question best. However, it is not a data collection method, as many confuses, because "How the data are collected is irrelevant to the *logic* of the design" (de Vaus, 2001, p. 9, emphasis in original). Any kind of research design can use any kind of data collection methods, and it is not to be equated with either quantitative or qualitative research methods.

2.3.1. Case study design

There are many different types of possible research designs (de Vaus, 2001; Yin, 2014), and case study is the one employed in this particular research. Case study design is used when "contextual information is collected about a case so that we have a context within which to understand causal processes." (de Vaus, 2001, p. 50). Briefly put, a case study is a way to "retain a holistic and real-world perspective" (Yin, 2014, p. 4) on the unit of analysis, which is the phenomenon to be analyzed (de Vaus, 2001; Yin, 2014). Since the research question of this thesis aims at answering whether designers create opportunities, and how they do it, the unit of analysis is **designers working in organizations** that employ design in their practice.

Furthermore, the case study research was designed as multiple and holistic, meaning that I explored three different companies under the frame of the same unit of analysis. These companies – cases - are: *ACME Europe*, *Absurdo Idėjos*, and *Biržų Duona*. The aim of such research design was to explore the research topic in more details, so that I could answer the research question with strong arguments, and could provide more compelling evidence (Yin, 2014). However, case studies are often seen as "subjective, giving too much scope for the researcher's own interpretations" (Flyvbjerg, 2006, p. 219), but I believe that exploring such distinct companies as electronics provider, bakery and trash design studio can result in more reliable empirical findings. Especially because *opportunities as designed* and the creative process behind it still lacks academic attention. Therefore, the highest interest of the research was to explore diverse settings of opportunities designed, and to establish common grounds between them, allowing me to challenge the existing theories on opportunity creation and discovery, and to "provide a source of new research questions." (Saunders et al., 2009, p. 147).

Furthermore, since the aim of the research was to generalize some patterns and a framework for opportunity design, I adapted the process of theory building from case study research by Eisenhardt (1989), which involves stages such as: getting started, selecting cases, crafting instruments and protocols, entering the field, analyzing data, shaping hypotheses, enfolding literature, reaching closure (p. 533). All of the steps can be seen in Appendix 1. The study is following these steps throughout the whole process, which is evident in this thesis. And I will elaborate more on the latter phases in Chapter 5.

2.3.2. Methods employed

There are two data collection and analysis methods: quantitative and qualitative, dealing respectively with either numeral or non-numeral data (Saunders et al., 2009; de Vaus, 2001). Case study research can employ evidence from either one or the other, or both approaches (Eisenhardt, 1989), which is nowadays referred to as the mixed-methods approach (Saunders et al., 2009; Tashakkori & Teddlie, 2010; Bryman, 2008). The advantage of it is that the researcher can select the methods most accurate at answering the research question. As it was mentioned before, the research was designed as exploratory, and so, the ways of conducting it includes: literature search, interviews with the experts, observation, and focus group interviews (Saunders, et al., 2009). Thus, for the purpose of this particular thesis, the primary focus was on collecting qualitative data, which enables to "understand the meaning of what is going on." (Gillham, 2010, p. 10). So, I chose semi-structured and focus group interviews as methods to gather primary data. Furthermore, secondary data from media articles was analyzed in order to explore the field in more details and collect valuable insights. I will elaborate more on the data collection methods in the following paragraph.

2.3.3. Data collection techniques

Theoretical data

In this part of the paper I discuss the choices of data collection methods in terms of theoretical and empirical data. The theory is reviewed in the third part of the paper in order to assess the term 'opportunity' and to clarify the main views and notions about it in the academia. Furthermore, the design field is also analyzed with the goal to explore the theories of design thinking and its ways of

creating opportunities. Then, entrepreneurial opportunity creation and design thinking are compared as the methods to create opportunities in order to provide a more compelling understanding about the fields and to set some grounds for the empirical data to be collected.

The main theoretical data sources were academic articles from leading academic journals, and books. Since the fields explored were quite diverse, the scope of the sources is distributed among the topics of entrepreneurship, effectuation, designerly thinking, design management, and design thinking process. It is believed that before any case study research, individuals shall first have an understanding of what is being studied in order to: "show your mastery over the topic of study and to use the literature to support the importance of your research questions and case study" (Yin, 2014, p. 192). This is why I explored such a varied amount of literature in order to review all the relevant theories on the topic from design and entrepreneurship points-of-view.

The process began with first looking into entrepreneurial opportunities and their definition seeking to understand the academic view about the concept. The amount of information grew gradually, because one source led to another, leaving me with various definitions on opportunity discovery, creation, and exploitation. Furthermore, since I was particularly interested in opportunity design, I needed to explore the definitions of what design is and what its role in entrepreneurship and opportunity creation, discovery and exploitation might be. That led me to finding some common features of entrepreneurial opportunity creation through effectuation theory, and design thinking. At first it was challenging in terms of amount of the literature available, but at the end I see it as an advantage of understanding different academic views on the concepts, providing in-depth insights on the possibilities for *opportunities to be designed*.

Empirical data

After the theoretical data was reviewed, I engaged in collecting empirical data through semi-structured and focus group interviews with representatives from the selected case companies: *ACME Europe*, *Absurdo Idėjos* and *Biržų Duona*. The reason behind choosing those particular companies was that both *ACME Europe* and *Biržų Duona* had received several rewards for their design solutions both internationally and nationally; and as for *Absurdo Idėjos*, I found it particularly interesting because of the material designs are made from – trash. This company has also won an award as the best business idea in a national competition aimed at solutions to deal with financial crisis. In addition, all three

companies are well-known experts in the markets they operate, and so, it was interesting to discuss with the companies how design has contributed to achieving such success and finding new business opportunities.

So, I have interviewed the designers responsible, and as for *Biržų Duona* - the marketing manager and commercial director were also included and formed a focus group. Before conducting the interviews, I had some basic questions prepared for each company to be used as the guidelines for the conversation, which can be found in Appendix 4. However, it was difficult to follow the questionnaires precisely, as I predicted, so I adjusted the discussion according to the situation. The interviews were held in Lithuanian and were recorded. Recordings are provided in the USB together with the thesis. Table below presents the basic information on the interviews.

Table 1. Interview framework

Date	Company	Representative(s)	Medium and purpose	Duration and type
11-04-2016	ACME Europe	J. Bučelis – Product Designer	In person. Discussed product line Urban Harmony.	Semi-structured interview. Duration - 50:02
17-04-2016	Absurdo Idėjos	J. Jakubauskaitė – Founder, Architect and Designer	Skype interview. Discussed trash design and what kind of opportunities it creates.	Semi-structured interview. Duration - 1:51:38
22-04-2016	Biržų Duona	E. Kavarskas – Designer A. Kurganovas – Commercial Director R. Kirpliukaitė – Marketing Manager	In person. Discussed the new package design and its impact on sales.	Focus group interview. Duration - 1:20:29

In addition to the interviews, I also explored documentary secondary data (Saunders et al., 2009) about the case companies and especially – about their designs. I focused on media channels from the Internet, particularly on the main news portals in Lithuania, and specialized design websites. They were a useful source of assessing the exposure those companies received in the media after the

designs were introduced. Furthermore, secondary data provided me with additional information about the businesses and how the designs shifted the brand image and awareness. It was also interesting to see whether the primary data collected during the interviews complemented the secondary data, leading to a detailed and coherent analysis of the case study.

2.4. The credibility of research findings

In addition to choosing the research design and methods for data gathering, one also has to reflect on the credibility of the social research conducted. Whatever the focus of the research, there is always a possibility of getting the answer wrong, which is why attention needs to be paid to reliability and validity of research design (Saunders et al., 2009). That way the researcher can reduce the probability of getting the wrong answers to the research questions. Reliability deals with yielding consistent findings from data gathering techniques and analysis; whereas, validity is concerned with findings being truly about what they seem to be about (Saunders et al., 2009).

In terms of reliability and the notion that the outcome from the research has to be the same each time it is conducted, it is likely that the answers from people interviewed in this research would vary the next time around. Unreliable answers can be the outcome of poor wording in questions, or the answers can be affected by the mood and wellbeing of the respondent; as well as the age, class, and ethnicity (de Vaus, 2001). Which is why I was very careful while creating the questions in a way that for each case company they would be customized, but still would capture the essence of design and opportunities created by it. Furthermore, in terms of the case study context, three different companies were chosen so that there would be more reliable evidence as compared to a single case study (Yin, 2014). I believe, this reduced the probability of unreliable answers, especially since the questions asked were fully concentrated on the former design solutions, which already received recognition in the design arena. In addition, I also engaged in secondary data analysis, which were a good source for checking whether the interviewees provided consistent answers to the questions.

Moreover, the research design applied has to assure the internal and external validity of the research findings (de Vaus, 2001). The former is "the extent to which the structure of a research design enables us to draw unambiguous conclusions from our results" (de Vaus, 2001, p. 28), whereas, the latter "refers to the extent to which results from a study can be generalized beyond the particular study."

(de Vaus, 2001, p. 28). It is important to reduce the likelihood of generating the results that are only applicable to the case studied, so the research has to be designed in a way that would eliminate alternative interpretations, but also, that its results would apply to a wider context. Case studies receive a lot of criticism in terms of lacking external validity, but it is not in the essence of a case study to provide generalized findings beyond that particular case, and this type of research design does not "strive for this type of external validity." (de Vaus, 2001, p. 237).

Case studies are more concerned with theoretical generalizations rather that statistical, which means that "case study designs are fundamentally theoretical" (de Vaus, 2001, p. 237). It is also reflected in this particular research, where the aim is to study different case companies in the same context and to induce some general design practice theory. But it is still important to gather data from more than a single case, so that the findings would be more compelling (Yin, 2014; de Vaus, 2001), and this is where a multiple and holistic case study research design allowed me to research the context in diverse circumstances. Furthermore, using secondary data as well as primary allows to believe that a reasonable amount of ambiguities would be reduced, and that the results can be generalized and have value outside the case context, as well.

3. Literature Review

In this part of the thesis I discuss the perspectives on opportunities from different theories. These include design thinking, effectuation, and entrepreneurship. It is also important to define what it is meant by term 'opportunity' in order to understand the foundations of the research question, which opens the discussion below, followed by a comparison between design thinking and entrepreneurial opportunity creation. This chapter provides a well-established foundation for understanding the research area and preparing for the gathering the empirical evidence aiming to answer the research question.

3.1. Entrepreneurship and opportunities

Opportunities in short are "favourable events" as Gartner, Carter and Hills (2003) put it. Those *favourable events* are broadly defined in and is at the core of entrepreneurial literature; even the definition of entrepreneurship is built around opportunities: "entrepreneurship as a scholarly field seeks to understand how opportunities to bring into existence "future" goods and services are discovered, created, and exploited, by whom, and with what consequences" (Venkataraman, 1997, p. 4). Change is also in the core of the definition: "the entrepreneur always searches for change, responds to it, and exploits it as an opportunity" (Drucker, 2007, p. 25). Therefore, an opportunity is something new and auspicious, but yet unknown to be brought into the market. Moreover, it has to be controllable and generate a positive gain (Gartner, Shaver, & Liao, 2008). Or, as Kirzner (1997) put it: "each market is characterized by opportunities for pure entrepreneurial profit" (p. 70), simply meaning that entrepreneurial opportunities are highly concerned with acquiring wealth, which can be controlled for positive outcomes.

In addition, there are two major streams of thought in the entrepreneurial literature concentrated on the way opportunities come to light: one concerning the discovery of opportunities, and the other talking about the development of them. There is a debate on how aspiring entrepreneurs have the skill to see opportunities that already are present in the market, but cannot be seen by others; as opposed to the notion that one can create new things that are yet nonexistent, independently of the

knowledge base one might already have. I will discuss these two opposing views on opportunities in the entrepreneurial literature below.

3.1.1. Opportunity development versus opportunity discovery

Back in the middle of the 20th century Schumpeter introduced the term *creative response*, which talked about the doing of "something else, something that is outside of the range of existing practice" (Schumpeter, 1947, p. 150). That is, whenever the daring entrepreneurs, who did not accept the market as it is, were seeking for new and better allocation of resources, as opposed to the reactive development within the existent practice – the *adaptive response* (Schumpeter, 1947). It is claimed that "In order for something radically new to emerge, the economic actor has to be bold and willing to take up a fight against the old" (Swedberg, 2007, p. 7), and Schumpeter called that actor the *Man of Action* (as cited in Swedberg, 2007, p. 8). This *Man of Action* – a leader - is the one to create new means of using existing resources so that new economic combinations are created, hence, new opportunities for profit. Schumpeter (1934) sees many variations of such opportunities to be created, like:

> (1) The introduction of a new good … (2) The introduction of a new method of production … (3) The opening of a new market … (4) The conquest of a new source of supply of raw materials or half-manufactured goods … (5) The carrying out of the new organization of any industry. (p. 66).

Entrepreneurs are believed to have the ability to create new opportunities through their creative response in the capitalist societies (Schumpeter, 1947), introducing new combinations of resources. If we looked at entrepreneurship as a feature inside of the firm, the reallocation of resources is also a "must" in order to grow, as the interaction between productive combinations of resources available, and market opportunities is important to any firm's development (Penrose, 1960). When these new combinations are successful, they disrupt market equilibrium and become a source for entrepreneurial profit. "The creation of such new combinations, Schumpeter argued, was a constant source of disruptive and fundamental change within markets, industries, and national economies and ultimately defined the chameleon-like character of capitalism itself." (Jones & Wadhwani, 2006).

On the other hand, there is a thought of *entrepreneurial discovery*, which highlights the importance of knowledge about the market and the so called *natural alertness* to possible (but overlooked by others)

opportunities (Kirzner, 1979, 1997). Success of an entrepreneur is defined by his or her ability to predict disequilibrium profit opportunities after coming across them (Kaish & Gilad, 1991). That means opportunities are already out there, yet not everyone has the ability to perceive them, which depends on the possessed knowledge each individual has, thus, creating the information asymmetry. This is crucial for entrepreneurial opportunities to exist, as well as the ability to spot this asymmetry and recognize potential opportunities (Shane, 2000). It brings about another important issue of Kirznerian opportunities – the discovery of them, because "opportunity, by *definition*, is unknown until discovered" (Kaish & Gilad, 1991, p. 48, emphasis in original), otherwise, someone would have already taken advantage of it (Kaish & Gilad, 1991).

It is a rare occasion when opportunities just present themselves, as more often they have to be discovered, and specific knowledge - "knowledge corridors" – play a vital role in this process (Venkataraman, 1997). It is believed that there are no profit opportunities under conditions of perfect knowledge (Kirzner, 1979), and Roberts claimed that prior knowledge, gained through education, work experiences, or other means, influences the ability to interpret and apply information in ways that the ones lacking that prior knowledge are not able to (as cited in Shane, 2000, p. 452). In addition, particular market knowledge of the industry allows individuals to see the gaps for potential market opportunities (Singh, 2000). Because information is already out there in the market without any context of why or how people relate and act to it (Gartner et al., 2003), there is always an element of surprise when individuals discover opportunities (Kirzner, 1997).

Furthermore, as mentioned above, disequilibrium is important in explaining entrepreneurial opportunities, because that is when alert entrepreneur can intervene in the market and change the prices, thus, generating profit, while others adjust their purchasing habits instead (Casson, 1982). As Kirzner (1979) claims: "Entrepreneurial alertness exploits these opportunities when others pass them by" (p. 8). Also, under the conditions of equilibrium, individuals have no incentives to change their current actions, because they are satisfied with prices as they are; and so, disequilibrium and incomplete information is needed for opportunities to emerge (Eckhardt & Shane, 2003). "People in equilibrium models cannot discover opportunities that differ in value from those discovered by others" (Shane & Venkataraman, 2000, p. 218), and so, there is an advantage of prior knowledge of: markets, ways to serve markets, and of customer problems, which can lead to entrepreneurial opportunity discovery (Hills & Singh, 2004; Shane, 2000) in cases of information asymmetry

(Ardichvilia, Cardozob, & Rayc, 2003). Furthermore, there is a notion of mistakes in recognizing and pursuing opportunities, because people act upon "hunches, intuition, heuristics, and accurate and inaccurate information, causing their decisions to be incorrect some of the time" (Shane & Venkataraman, 2000, p. 221). That is why errors are created in the market by some individuals, which later result in misallocated resources, shortages or surpluses, which alert entrepreneurs can grasp and correct (Kirzner, 1979, 1997; Shane & Venkataraman, 2000).

3.1.2. Digging deeper into the research of entrepreneurial opportunity

Moreover, the whole debate on entrepreneurial opportunities is entering a bigger frame of research – the philosophy of science – and the realist versus constructionist paradigms. The former discusses reality as an independent factor of individual's perceptions, whereas the latter argues that reality is a social construct of human actions and perceptions (Alvarez, Barney, & Young, 2010). The realist approach is the one talking about the discovery of opportunities, which continues the work of the "Austrian" economists, who "explored the dispersion of knowledge and the uncertainty that accompanies such dispersion" (Sanz-Velasco, 2006, p. 253). Information and prior knowledge is in the core of realist approach (Shane, 2000; Alvarez, et al, 2010; Venkataraman, 1997; Sanz-Velasco, 2006; Eckhardt & Shane, 2003; Gartner et al., 2003; Kirzner, 1997), and it is believed that "opportunities exist independent of individual's knowledge of them, and that this knowledge can be acquired" (Alvarez, et al., 2010, p. 26).

On the other hand, the constructionist approach discusses the creation of opportunities, which are being formed by individual interpretations of resources available, and the meaning adjusted to these resources that is different from others (Alvarez et al., 2010). The main notion in the constructionist view is that any outcome of the process is dependable on human endeavors, because "opportunities do not pre-exist—either to be recognized or to be discovered" (Sarasvathy, Dew, Velamuri, & Venkataraman, 2010, p. 92), they are the outcome of subjective interpretation of available resources - both information and knowledge (Alvarez et al., 2010). It is important that individuals believe the value of reallocated resources is higher than under current conditions (Eckhardt & Shane, 2003), and that it is worth to act upon them.

Moreover, there is a belief that opportunities are not discovered, but rather the outcome of enactment on resources at hand (Baker & Nelson, 2005). Under this view the entrepreneur makes a subjective decision on what opportunities to create and then uses the available resources to achieve that goal (Alvarez et al., 2010; Gartner et al., 2003). It is an ongoing creative process, and "entrepreneurs act before they have a comprehensive perception of an opportunity in that they immediately turn their attention to enactment and effectuation" (Sanz-Velasco, 2006, p. 257). The enactment of opportunities means that they will come to existence as the result of daily activities of individuals (Gartner et al., 2003), and the 'sensemaking' through the lens of personal and subjective perspective (Weick, 1995). Because there is no value of an opportunity as such, "unless the actor/s actually act upon the real world within which the opportunity eventually has to take shape" (Sarasvathy et al., 2010, p. 79). Opportunities thus are under control of the individual's capabilities and effort, and can be "considered perpetuated through the cycling of ideas and actions" (Dimov, 2011, p. 68), because "Entrepreneurs judge whether they have the ability and can undertake the effort necessary to pursue their desires." (Gartner et al., 2008, p. 306), in order to achieve positive gain.

Furthermore, a third notion of an evolutionary realist approach to opportunities was presented in order to include strengths from both the realist and constructionist perspectives (Alvarez et al., 2010). This approach claims that knowledge can be constructed by individuals but is also validated through social cross-validation (Alvarez et al., 2010). This approach is also called the creation opportunities, which are socially constructed (Venkataraman, 2003), with roots from the work by Schumpeter, as mentioned above. Moreover, while Kirznerian view promotes opportunities as reflected in the price system and thus, already existent in the market, the Schumpeterian approach focus on exploitation of opportunities outside of the economic sphere – the creation of them. Acting and reacting are in the core of the enactment of opportunities exploited. This approach also criticizes the prior knowledge as it may hinder the learning process:

> opportunities do not necessarily emerge out of competitive imperfections in pre-existing industries or markets—where prior industry or market experience may actually help entrepreneurs combine pre-existing knowledge in new ways—but, instead, may emerge out of the enactment process itself. (Alvarez et al., 2010, p. 31).

It is claimed that knowledge from prior learning, and as the outcome of information asymmetries, is important (Ardichvilia et al., 2003), but is not by itself sufficient enough for the reasoning of

development of opportunity ideas (Dimov, 2007). It is not the matter of what one knows, it is a matter of what one does with his or her knowledge, and the way people convert their insights into knowledge is in the core of individual-opportunity nexus (Venkataraman, 1997). It is impossible to predict future market demand or actions of potential rivals, therefore, individuals can only perceive the opportunity to be valuable until it in fact makes profit (Eckhardt & Shane, 2010). Resource allocation is an important attribute to this approach, because "opportunities are made, not found" (Ardichvilia et al., 2003, p. 113). But the decision to act is not affected by some constraints imposed by the market, rather it is a creative process, with constraints that individuals determine themselves (Eckhardt & Shane, 2003).

Following the debate on opportunity discovery versus development, three views on opportunities were introduced (Sarasvathy et al., 2010):

1. The allocative process view;
2. The discovery process view;
3. The creative process view.

The allocative process view advocates the perfectly competitive market, where no actor is big enough to affect prices, all actors are perfectly mobile, and all agents have perfect knowledge about the resources available (Sarasvathy et al., 2010). This approach sees an opportunity as a new way of allocating resources to a better use, therefore, only a short-term profit is available, because it will disappear after new firms enter a new profitable segment. Moreover, no opportunity is specific to anyone, because there is no information asymmetries, and the agent that recognizes opportunity is only a random variable (Sarasvathy et al., 2010). This perspective is similar to the one, which advocates equilibrium market conditions.

The discovery process view is the one that puts individual knowledge at the core of opportunity discovery. Also, there is a chance of mistakes from previous attempts of resource allocation, and so the alert individual can recombine those misallocated resources and earn profit (Eckhardt & Shane, 2003; Shane & Venkataraman, 2000). There is a notion of overlooked profit opportunities that create an element of surprise after they have been identified (Kirzner, 1997). The discovery process suggest that the market is alive independently from any human activity, and that only certain knowledge can create advantages in terms of identifying opportunities for profit.

The creative process view claims that "ends emerge endogenously within a process of interactive human action (based on heterogeneous preferences and expectations) striving to imagine and create a better world" (Sarasvathy et al., 2010, p. 90). This notion argues that not all human action is rational, and that creativity is in human nature to design the artificial nature of the world people live in (Simon, 1996). Furthermore, bricolage is used as a term of creating something from nothing, while individuals or firms "actively exercise their creative and combinatorial capabilities, their tolerance for ambiguity and messiness and setbacks, and their ability to improvise and take advantage of emerging resources and opportunities" (Baker & Nelson, 2005, p. 356). This elaborates on the perspective that opportunity discovery can be an interactive and creative process rather than an individual realization coming from the knowledge possessed.

3.1.3. Effectuation

Following the aforementioned creation approach on opportunities, effectuation was introduced as a way to explore entrepreneurial action (Sarasvathy, 2001). This framework discusses entrepreneurship and opportunities in new light, introducing the possible concept of opportunity design through creative effort of individuals. In order to start the discussion, definitions of causation and effectuation are provided as follow:

> Causation processes take a particular effect as given and focus on selecting between means to create that effect. Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means. (Sarasvathy, 2001, p. 245)

Causation means that entrepreneurs have predefined objectives and then search for opportunities to meet those goals. They analyze and plan the ways, which resources and knowledge can be exploited, therefore, everything is envisioned from the start and then all efforts are directed towards the pre-envisioned conditions (Chandler, DeTienne, McKelvie, & Mumford, 2011). As Sarasvathy (2001) claimed: "Causation processes focus on the predictable aspects of an uncertain future" (p. 252), and so, everything that can be planned or predicted is achieved through effective ways at hand.

Effectuation, on the other hand, allows individuals create more than one possible effect, regardless of the initial goals, because this process creates an environment, in which individuals can change their objectives and construct them over time (Sarasvathy, 2001). Since the future cannot be predicted,

decision makers observe the results of previous decisions and then use that information to change the course of action in their favor (Chandler et al., 2011). As Sarasvathy (2001) said, effectuation "focuses on the *controllable* aspects of an unpredictable future" (p. 252, emphasis in original), and so entrepreneurs are flexible in cases of unstable environmental conditions (Chandler et al., 2011).

Furthermore, effectuation sees opportunities as artefacts of creative emergence, which in a way makes entrepreneurs designers, who begin with only the means of "who they are, what they know and whom they know" (Sarasvathy, 2001, p. 250). In short, individuals are concerned with "what they can do at a particular point in time, given their knowledge and resources" (Dimov, 2011, p. 71). Effectuation processes do not shy away from uncertainty, rather "effectuation emphasizes nonpredictive strategies over forecasting; and embraces locality and contingency as levers to shape opportunities" (Sarasvathy, 2004, p. 525). In addition, there are four principles of effectuation theory, which distinguishes it from causation processes (Sarasvathy, 2001):

1. **Affordable loss rather than expected returns** – since causation processes are focused on selecting optimal strategies to maximize the potential returns for the decision made, effectuation first defines how much loss is affordable. "Experiments that would cost more than the entrepreneur can afford to lose are rejected in favor of affordable experiments." (Chandler et al., 2011, p. 380), and only when results are satisfying, new resources might be added to the following experiments.
2. **Strategic alliances rather than competitive analyses** – effectuation sees strategic alliances as a way to reduce uncertainty and spread the responsibility to other stakeholders, whereas causation emphasizes detailed analysis on competition (Chandler et al., 2011; Sarasvathy, 2001);
3. **Exploitation of contingencies rather than exploitation of preexisting knowledge** – causation is seen as a great model in cases when preexistent knowledge forms competitive advantage, whereas effectuation might be better for exploiting unexpected events (Sarasvathy, 2001);
4. **Controlling an unpredictable future rather than predicting an uncertain one** – using causation processes reflects the logic that until the future can be predicted it can also be controlled, while effectuation logic perceives that future, until it can be controlled, does not need to be predicted (Sarasvathy, 2001).

Therefore, under the effectual logic, entrepreneurial opportunities are not simply identified and then pursued, but the process also includes the uncertainty while creating them (Sarasvathy, 2001). Effectuation is an actor dependent process, and since entrepreneurial opportunities are risky and full of uncertainty, it is useful to analyze them through human action spheres, as to why certain individuals are daring in terms of opportunity exploitation, whereas others, under the same circumstances, tend not to react to market changes. In addition, effectuation is supported by bricolage mentioned above (Baker & Nelson, 2005) and the emergence of organizations (Gartner & Katz, 1988; Gartner, Bird, & Starr, 1992), which all "emphasize that the act of creating and organizing an entrepreneurial opportunity to prepare it for the market is a social and complex process of gradual emergence differentiated from the actions of the conventional manager in well-established corporate settings" (Nielsen & Christensen, 2014, p. 565). The effectual cycle can be seen in Appendix 2 for further representation.

Furthermore, effectuation brings entrepreneurship closer to design, because following this framework "entrepreneur is constantly open to new opportunities, ideas, possibilities, resources etc., and will constantly involve others (bankers, family members, business associates, friends etc.) to make room for action and new means" (Nielsen & Christensen, 2014, p. 566). Sarasvathy brings entrepreneurship even closer to design when presenting *possibility* as a term replacing *opportunity*, claiming that "Designing entrepreneurs take up possibility as a tool and fashion it into opportunity through imaginative interaction both with their tools and with the society in which they live." (Sarasvathy, 2004, p. 526). By comparing entrepreneurial actions to design, we can discuss the notion of opportunities outside of the entrepreneurial literature. Since opportunities are seen as new features of products, new ways of production, or the establishing of new markets, as seen in Schumpeterian view, they all include a phase of creation. As Venkataraman, Sarasvathy, Dew and Forster (2012) claimed: "when modeled at the nexus of actions and interactions, both markets and market opportunities can be artifacts" (p. 30). And so, that brings me further to looking at opportunities through design literature and the creation of the artificial, because "opportunities can be actively designed through creative design thinking" (Nielsen et al., 2012, Introduction section, para. 2).

3.2. Design thinking and opportunities

3.2.1. Defining design

It is believed that the discipline of design began with the Bauhaus movement in the 1920s, originating from the Industrial Revolution. "Bauhaus has its roots in the Industrial Revolution, that lasting cataclysm beginning in England in the middle of the eighteenth century and resulting in industrial manufacturing and industrial society." (Siebenbrodt & Schöbe, 2012, p. 8). There was a need for a new way of design, which would be aligned with the novel kind of production after machines were introduced into the process (Siebenbrodt & Schöbe, 2012). And so, designers were concentrating their effort in improving the standards of living after World War I using technology.

The pioneers of design research as a distinctive field were concerned with the creation of physical artifacts. As Alexander (1964) claimed: "The ultimate object of design is form" (p. 15). In addition to that, one of the most famous definition of design is: "Design is when designers design a design to produce a design." (Heskett, 2001, p. 18). It is a vivid expression defining the discipline in general, an action of making something, and a finished object. What this definition lacks is the notion of making intangible things as well. Thus, Buchanan (2001) described design as "the term commonly used today to describe the invention, planning, and realization of both tangible and intangible products" (p. 188), expanding the field of design into creation of software, information systems, and other digital items.

Design is continuously evolving into new applications and it does not have any "fixed subject matter" (Buchanan, 2001, p. 191), especially because "together with language, it is a defining characteristic of what it is to be human" (Heskett, 2005, p. 6), "allowing people to shape their surroundings in any ways desirable, as well as differentiating nature from civilization in general" (Gumbytė, 2016, p. 4). Therefore, as Simon (1996) wrote: "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones" (p. 5), creating new and better solutions to improve people's lives. It can be as simple as "designing by planning our time, arranging the desktops of our computers, arranging rooms for meetings" (Lawson, 2005, p. 5) and so on, because any course of action taken to address the change can be well claimed to be design.

3.2.2. What is design thinking?

From designerly thinking to design thinking

There are two ways of looking at the term design thinking. One of them is called 'designerly thinking', referring to the way designers think and act upon the problems being solved, while the other is about applying design tools and methods outside of the practice of professional designers, especially in the field of management (Johansson-Sköldberg, Woodilla, & Çetinkaya, 2013). "Designerly thinking links theory and practice from a design perspective" (Johansson-Sköldberg et al., 2013, p. 123), and so comes from the academic field of design. Design thinking, on the other hand, is "a way of describing a designer's methods that is integrated into an academic or practical management discourse" (Johansson-Sköldberg et al., 2013, p. 123), and can nowadays be seen as a 'superpower' of innovative companies.

Designerly thinking is discussed in the academic literature only to understand the concept for the wider academia or to communicate it to the students (Johansson-Sköldberg et al., 2013). This stream of research began back in the 1960s and sought to understand methods successful designers used for their designing activity (Kimbell, 2011). Rowe explored architecture design and creation of other urban artefacts in order to understand the logic behind the process of decision-making, and the theoretical dimensions affecting such undertakings (Rowe, 1987). He discovered that "there is no such thing as *the* design process in the restricted sense of an ideal step-by-step technique" (Rowe, 1987, p. 2, emphasis in original), but rather it is influenced by the problem itself, personality of the designer, and the context or social purpose of the building (Rowe, 1987). That is, the focus of such research was on design thinking as a cognitive style, or as Cross (2011) named it: 'design ability' – ways designers think and work. In addition, Lawson (2005) claimed that "design thinking is a skill" (p. 15), and this notion is at the core of discussing designerly thinking.

While the previous part of research is focused on designers' ways of thinking and doing, Buchanan shifted this theory further arguing that the concept of design thinking could be applied to anything (Kimbell, 2011). Design itself has no specific subject matter, just the one designer perceives, as Buchanan (1992) claimed: "The subject matter of design is potentially universal in scope, because design thinking may be applied to any area of human experience" (p. 16). That is why design problems

are believed to be wicked or ill-structured problems, which cannot be solved, only re-solved over and over again (Rittel & Webber, 1973). Also, since determinate problems require a linear model of design thinking, wicked problems approach assumes there is indeterminacy, meaning "that there are no definitive conditions or limits to design problems" (Buchanan, 1992, p. 16). The way problems are perceived in design process were also termed as design from moving-in and moving-out by Nielsen et al. (2012), with the former focusing on clearly defined problems and solving them in a linear way, and the latter – with the complex and fuzzy problems, solving them in a non-linear approach.

However, design activity cannot be concluded solely as a problem solving process, because that way other important design activities will be missed (Dorst, 2006). "There is no doubt that problem-solving is part of a design process, yet it is not the whole process" (Hatchuel, 2001, p. 271), therefore, design thinking is not only the actions designer take to solve particular problems, but also the ways they create value, and what overall role they take in our societies (Kimbell, 2011). Furthermore, Jahnke (2012) argued that design shall be seen through the lens of hermeneutics, as the process aims at understanding and is the outcome of seeking and evolving meaning as opposed to purely problem solving.

Through shifting from design thinking as a cognitive style and the purpose of problem solving, there is a notion of design thinking as an organizational resource for innovation (Kimbell, 2011). There is a belief that if organizations applied such thinking in their practices, they could deal with complex issues more efficiently and create more innovative solutions, leading to differentiation in their target markets. One of the many attributes of design thinking is the process of design reasoning and framing, which, as argued by Dorst (2011), can be very useful in the organizational context. Dorst described frames as:

> very complex sets of statements that include the specific perception of a problem situation, the (implicit) adoption of certain concepts to describe the situation, a 'working principle' that underpins a solution and the key thesis: IF we look at the problem situation from this viewpoint, and adopt the working principle associated with that position, THEN we will create the value we are striving for. (2011, p. 525, emphasis in original).

Designers' mindset allows the thinking within various discourses in order to create frameworks, in which possible solutions for paradoxical situations are present, and that paradox problem situation is both a trigger to creativity and a context of design evaluation (Dorst, 2006). These frames allow us

to analyze design thinking in terms of material practices that might not only be unique to designers but can be applied to a wider spectrum, including business and management fields.

Design thinking as a business tool

It was as early as 1984 when design was recognized as a great tool to be applied to business, however, too often it was not considered as a value enhancing strategic approach (Kotler & Rath, 1984). Before IDEO – world leader of innovation consultancy – started to use this term in their way of creating innovations, design thinking was merely considered as a cognitive ability of designers as discussed above. But in this part of the paper I will explore the 'new' design thinking and its practices in the business world.

Tim Brown, the CEO and president of IDEO, introduced term design thinking in company's context and as a way of creating innovation, which goes beyond the aesthetics, is a creative, practical, iterative, and human-centered approach (Brown, 2008). He elaborated more on design thinking in his book *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. There he explores the ways in which anyone can apply design thinking to their routines, as it is truly about thinking like a designer; it "relies on our ability to be intuitive, to recognize patterns, to construct ideas that have emotional meaning as well as functionality, to express ourselves in media other than words or symbols" (Brown, 2009, p. 4). But in IDEO design thinking is not just some set of principles for awareness to the outside world, it is a human-centered methodology, used for uncovering insights and possibilities to novel solutions (Brown, 2008, 2009; Kelley & Kelley, 2013).

Even though IDEO initially focused on product development, during the years the consultancy expanded its offerings to strategy design, service design, and social systems design; reflecting the evolution of design thinking itself (Liedtka, 2015). As Tom Kelley recalled: "over time, we learned to apply our "design thinking" approach from product-innovation programs to the world of services, experiences, and even cultures" (Kelley & Littman, 2006, p. 71). The core principal of design thinking – being human centered – is referred by Leon Segal to as "Innovation begins with an eye" (as quoted in Kelley & Littman, 2001, p. 28), because once you begin careful observations, all kinds of insights, inspirations, and opportunities can emerge (Kelley & Littman, 2001). This method was already described in 1997 by Leonard & Rayport as emphatic design, with observation as a core principle, which helps collect tremendously important insights to identifying "opportunities not only for

innovation and product redesign but also for entering entirely new markets." (Leonard & Rayport, 1997, p. 105).

Around the same time that T. Brown started to talk about design thinking as a tool to boost innovation and creativity, Roger Martin, a former Dean of the Rotman School of Management, was also exploring the field, only through a slightly different perspective. While Brown focuses on professional designers, Martin emphasizes the management and what successful managers use for achieving the competitive advantage (Kimbell, 2011). Design thinking is also called the "third form of thinking" (Martin, 2009, p. 24), and is seen as designer's essential tool to business problems – the abductive reasoning - because neither deduction nor induction is a complete way (Martin, 2009).

Furthermore, as defined by Brown (2008), design thinking is "a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity". However, purely abductive reasoning can fail to deliver technologically feasible products, or innovations that make business sense, therefore, a balance between deduction, induction and abduction shall be of interest for any organization or individual that wishes to prosper from design thinking (Martin, 2009; Dorst, 2011). Even though, as research by Carr, Halliday, King, Liedtka and Lockwood (2010) showed, many executives still associate design only to aesthetics of finished product, design thinking shall be applied in organizational context to problem solving, especially because this methodology "can be uncoupled from the design function, it can be scaled throughout an organization" (Carr et al., 2010, p. 62).

Design management

There was also some attention brought to design as management, or managing as designing, before the phenomenon of IDEO's way of design thinking emerged in the widespread business media. In 2004 Boland Jr. & Collopy discussed the importance of adopting design attitude in business as opposed to the decision attitude. The dominant way of solving problems in management is that impacted by decision attitude, the one where alternatives are known and ready at hand, one just have to make a choice among them using such tools as simulation, time value of money, risk assessment, or others (Boland Jr. & Collopy, 2004). That course of action assumes "it is easy to come up with alternatives to consider, but difficult to choose among them" (Boland Jr. & Collopy, 2004, p. 4). So,

in clearly defined situations under stable conditions with all relevant options already known, it might be the most effective way to solve problems with decision attitude.

However, nowadays it is quite unrealistic to assume that all alternative solutions to problems at hand are known, and so, design attitude might be a better approach. It "is concerned with finding the best answer possible, given the skills, time, and resources of the team, and takes for granted that it will require the invention of new alternatives" (Boland Jr. & Collopy, 2004, p. 6), but once a truly great one is developed, the selection process becomes a minor obligation. The authors suggest that recent management failures are directly linked to a shortage of good ideas, therefore, incorporating design in one's management style can not only lead to novel solutions but also to better serving of customer needs. "A design attitude fosters an acceptance of and a comfort with a problem-solving process that remains liquid and open, celebrating new alternatives as it strives to develop a best design solution" (Boland Jr. & Collopy, 2004, p. 10), which correlates with the previously mentioned notion on design as a course of action taken to change current conditions to more preferred ones (Simon, 1996).

But one shall not confuse managing as designing and design thinking. As Lockwood (2009) claims, design thinking is "a great method with which to discover unmet needs and create new products and service offerings" (p. 3), hence primarily concerned with dealing with complexity, innovation and "imagining the future" (Kolko, 2015, p. 71). Whereas, design management is "focused at the ongoing management and leadership of design processes, organizations, operations, and design outputs" (Lockwood, 2009, p. 3), because design thinking is not the best "set of tools for optimizing, streamlining, or otherwise operating a stable business" (Kolko, 2015, p. 71) . Not the same but well working together.

3.2.3. Design thinking process

IDEO is not the only organization in the world using design thinking in its practice. Thus, this part of the paper is built around the principles of design thinking as presented by many design consultants or educators. Liedtka has grouped all of the practices used during the process into three distinct stages, emphasizing "iterative cycles of exploration using deep user research to develop insights and design criteria, followed by the generation of multiple ideas and concepts and then prototyping and

experimentation to select the best ones" (Liedtka, 2015, p. 927). Thus, the stages of design thinking are as follow (as adapted from Liedtka, 2015):

> Stage 1. **Data gathering** about user needs. This stage includes various ethnographic research methods used to develop a deeper understanding of the end-users. Methods in this stage include observation, journey mapping, interviewing, and job-to-be-done analysis.
>
> Stage 2. **Idea generation** is a phase of sense-making and developing concepts. Tools used are mind mapping, brainstorming.
>
> Stage 3. **Testing** is when experimentation begins, using prototyping tools, such as storyboards, user scenarios, experience journeys, business concept illustrations, and metaphors.

In addition, a table below represents main models for design thinking processes, as seen in practice. All of the phases from different models are categorized according to the main stages of: data gathering, idea generation, and testing, as presented above. In addition, visualizations of these methods can be seen in Appendix 3 for further representation.

Table 2. Design thinking process, adapted from Liedtka (2015) and Heerema (2015)

	Data gathering	**Idea generation**	**Testing**
Design – driven innovation at IDEO[I]	Inspiration	Synthesis Ideation and experimentation	Implementation
Tim Brow - *Three Spaces of Innovation*[II]	Inspiration	Ideation	Implementation

[I] Kelley & Kelley, 2013

[II] Brown, 2008, 2009

Design thinking for educators toolkit[III]	Discovery Interpretation	Ideation	Experimentation Evolution
Human-Centered Design at IDEO.org[IV]	Inspiration	Ideation	Implementation
Hasso Platner Institute of Design at Stanford[V]	Empathize Define	Ideate	Prototype Test
Rotman School of Management – *Business Design*[VI]	Empathy & need finding	Prototyping & experimentation Business strategy	
HPI School of Design Thinking[VII]	Understand Observe	Define point of view Ideate	Prototype Test
Darden Business School[VIII]	What is?	What if?	What works? What wows?
University of St. Gallen[IX]	Design Space Exploration	Critical Function Prototype Dark Horse Prototype Funky Prototype Functional Prototype X-is finished Prototype Final Prototype	

[III] http://www.designthinkingforeducators.com/toolkit/ (accessed March 22, 2016)

[IV] http://www.designkit.org/resources/1 (accessed March 22, 2016)

[V] http://dschool.stanford.edu/wp-content/uploads/2013/10/METHODCARDS-v3-slim.pdf (accessed March 22, 2016)

[VI] http://www.rotman.utoronto.ca/FacultyAndResearch/EducationCentres/DesignWorks/About-BD (accessed March 22, 2016)

[VII] http://hpi.de/en/school-of-design-thinking/design-thinking/mindset.html (accessed March 22, 2016)

[VIII] http://www.designatdarden.org/presentations/ (accessed March 22, 2016)

[IX] http://dthsg.com/phases/ (accessed April 23, 2016)

All of the methods presented in the table above share general principles of: getting to know the user, creating as many ideas as possible until a feasible solution is developed, and testing that solution in the target market. Design thinking is iterative, and nonlinear; it is an "exploratory process; done right, it will invariably make unexpected discoveries along the way, and it would be foolish not to find out where they lead." (Brown, 2009, p. 16).

Furthermore, the focus of the process is always people. At IDEO observations are powerful sources of inspiration, the aim there is to "understand why people do what they currently do, with the goal of understanding what they might do in the future." (Kelley & Kelley, 2013, p. 21). Such understanding is reached through empathy – "the effort to see the world through the eyes of others, understand the world through their experiences, and feel the world through their emotions" (Brown, 2009, p. 50). It is not only enough to observe and interview the users, for a truly great and feasible solution to emerge "you need to have personal experience in the design space yourself." (Hasso Platner Institute of Design at Stanford, 2013, p. 1).

Another common feature of all design thinking methods is the visual way of working. Design thinkers use models or as Kolko (2015) called them: "*design artifacts*" (p. 68, emphasis in original) in order to communicate and tackle nonlinear problems. When design thinkers go out to explore the design space and end-users, they take pictures, write notes, draw sketches, etc., all in order to gather insights. "Visualization makes ideas tangible and concrete" (Liedtka & Ogilvie, 2011, p. 49), making the exploration and sharing of ideas easier. In addition, post-it notes are widely used during the whole process to share and collaborate on each other's insights. Visual thinking, as Brown (2009) calls it, is crucial for expressing ideas, and it is not about how good one is at drawing, it is simply a tool to easier exchange of ideas.

Furthermore, once ideas are selected, prototyping and testing takes place. Prototype is an embodiment of idea one wants to implement, and the purpose of prototyping is to experiment and to explore the possible solutions (Kelley & Kelley, 2013; Brown, 2009; Kolko, 2015), as well as to "learn about the strengths and weaknesses of the idea and to identify new directions that further prototypes might take" (Brown, 2008). As words are not always efficient in expressing the ideas, prototyping provides "a concrete and tangible artifact that allows decision-makers to create more vivid manifestations of the future." (Liedtka, 2015, p. 934). Prototyping is also important for learning fast and failing early (Brown, 2009; Ries, 2011; Kelley & Kelley, 2013) – a notion also used in lean

startup approach, where it is called a minimum viable product used to learn as quickly as possible (Ries, 2011). As the design process is iterative, it is almost never a case to have the right solution after the first attempt, therefore, failure is seen as learning and "part of the cost of innovation" (Kolko, 2015, p. 69). All of this highlights the importance of experimentation in design thinking, which can produce "conversations with real customers, a better source of information than PowerPoint presentations" (Liedtka, 2014, p. 44), and reduces the probability of failure after the final idea is implemented.

3.2.4. Is design thinking creating opportunities?

> *We envision new companies and brands, and we design the products, services, spaces, and interactive experiences that bring them to life. We help organizations build creative culture and the internal systems required to sustain innovation and launch new ventures.*
>
> *(IDEO, 2016)*

As the focus of the thesis is on opportunities, it is important to also explore whether design thinking is a method to create them, too. I have already discussed how opportunities can also be seen as creating the artificial together with the notion that entrepreneurship is "essentially a design problem" (Sarasvathy, 2004, p. 523). The creation of new ventures or market structures are the acts of entrepreneurial design, which if presented as an entrepreneurial method, can help in designing new opportunities (Venkataraman et al., 2012). "Opportunities can be further advanced by understanding and applying design thinking to the development of the product or service, as well as market possibilities and business models." (Matthews, 2010, p. 3), opening new prospects to study opportunities.

As described above, design thinking process is human centered, iterative, experimentation-driven, built exclusively around empathy. As Brown (2009) claims: "Spending time to understand a culture can open up new innovation opportunities." (p. 57), which always are originating from empathy. With empathy businesses can create products that not only are functional, but appeals to the users on the emotional level, as well (Brown, 2009), which can be seen as an opportunity to serve a larger market – hence, more profit opportunities. Another feature of design thinking is complexity, which "is the most reliable source of creative opportunities" (Brown, 2009, p. 86). Design thinking can

replace management as a way of dealing with complex reality (Johansson-Sköldberg et al., 2013), especially since companies are generally slow in responding to change or grasping the opportunities (Gruber, de Leon, George, & Thompson, 2015). Furthermore, design thinking, when applied to the internal organization's systems and processes, can attract and retain top talent, and enhance productivity (Gruber et al., 2015), which in return can result in a better market position and profitable opportunities.

Companies are constantly facing change and a need to refresh their approaches to idea generation, and to engage with customers in order to ensure continuous value creation (Matthews, 2010). Being a human-centered approach, which encourages diverse ideas and examination, design thinking seems a reasonable method to be applied for such purposes. Furthermore, as Liedtka (2015) discussed, design thinking tools, such as journey maps, or ethnographic interviews – allow companies to "stay involved with the problem long enough to reframe the opportunity" (Liedtka, 2014, p. 43), and as a result – to deliver more feasible and effective solutions. Brown (2009) argues that design thinking process converts problems into opportunities, and seen from the design as a problem solving discipline (with wicked problem approach), it can be assumed that design thinking is a method to create opportunities.

3.3. Design thinking versus entrepreneurial opportunity creation

As it was discussed above, design thinking can be seen as a method to create opportunities. But how is it similar or different to opportunity creation notion in the entrepreneurial literature? It has been made clear with the effectuation theory that entrepreneurs engage in creative endeavors, using their means at hand and imagination when creating economic artifacts, and much of the process can be seen as similar to design. Since "effectuation, starting with what is given and creating new possibilities in a market or creating a market, is common to both entrepreneurship and design." (Matthews, 2010, p. 18), this similarity brings about the notion of both disciplines as creating opportunities. And thus, not only can opportunities be discovered or created by entrepreneurs, but also – designed by designers. In addition, table below is presented to compare the nature of opportunity creation using effectual logic and design thinking as ways to develop opportunities.

Table 3. Comparison of design thinking and entrepreneurial opportunity creation

	Design thinking	**Opportunity creation (effectuation)**
What is it?	Method, discipline.	A thinking framework.
Actors involved	Multidisciplinary, diverse project teams.	Entrepreneur and his/her partnerships, networks.
Process	Iterative, non-linear, co-creation, user-driven, visual, collaborative, experimentation.	Non-linear, continuous, interactions, co-creation, partnerships, decision making under uncertainty, experiments.
Outcome of the process	Innovations as solutions to wicked real life problems.	Economic artifacts – new firms, markets, economies, ventures.
Environment	Playful, open, diverse.	Rapid, ever changing.
Characteristics of actors and actions	T-shaped people. Empathy, interpretation of end-users' perceptions, creativity, diverse set of skills, open-minded, focus on means, optimism.	Imagination, inspiration, open to surprises, limiting risks, focus on activities within their control, creativity, daring, committed, focus on means.
Knowledge	Tacit knowledge.	Tacit knowledge, exploiting contingencies.
Creativity and tools	Ethnography, visualization, user-involvement tools, prototyping, brainstorming, empathy maps, 5-Whys, stakeholder maps, observation, storytelling.	Goal construction, affordable loss, "what-if" scenarios
Attitude toward future	Deal with uncertainty as a driver for creative behavior. Future as a desirable outcome.	Control of unpredictable future. Future is seen as made. Flexible planning.

Orientation	How to create innovative and technologically feasible solutions to serve human needs? Human-centered.	How to create sellable products/services to start a successful business? Market oriented.

The table above presents some common and distinct features of design thinking approach and effectuation in opportunity creation. The most evident similarities are the ones concerning the attitude towards uncertainty and surprise. Both design thinking and effectuation suggest that being open to contingencies can help generating more novel ideas leading to better opportunities. Furthermore, future is not something to be afraid of, but one rather needs to be comfortable with uncertainty and embrace change in both design thinking and opportunity creation notions. In addition, collaboration is seen as a great way to enhance creative thinking, and novel outcomes. One of the core principles of design thinking is multidisciplinary and diverse project teams, which result in more potential ideas to real life problems. Teams and collective creativity is also seen in the core of opportunity creation theory, especially in effectuation, where partnerships and co-creation is strongly promoted. Tacit knowledge is also a key feature of both disciplines, boosting creativity, because "Knowledge and experience serve as inputs to imagination, but do not fully constrain and determine it." (Berglund, 2007, p. 249).

These two approaches are also seen as highly creative and resulting in novelties. However, design thinking is built around the users and their needs, whereas, entrepreneurial opportunities created are more concerned with markets and what would become sellable and profitable items. Design thinking is more engaged with visual aids as well, as compared to opportunity creation. There are plenty of tools to be used in order to know the users better and make correct interpretations of their perceptions, so that the innovations created would truly meet their needs. In contrast, opportunity creation is more concerned with the entrepreneur and his or her aspiration for successful business. This approach is market oriented. Another interesting difference is of planning and organizing. Design thinking is "limited to the fields of 'organizing' and 'operating'." (Von Kortzfleisch, Zerwas, & Mokanis, 2013, p. 2083), whereas opportunity creation is seen as "emergent and flexible strategy-making" (Hang, Garnsey, & Ruan, 2013, p. 9). Design thinking is also concerned with real life problems and creating innovative solutions to solve them, while entrepreneurial opportunity creation is focused on the creation of economic artifacts.

Therefore, since both approaches are seen as creative and flexible under uncertainty, it could be stated that by using design thinking tools in their routines, entrepreneurs would have a wider range of opportunities to enact on. Or in other words, opportunities can be designed as well as created or discovered, and the research conducted aims to present empirical evidence to that.

4. Case study research

As I assessed the literature on opportunities and their creation, I found some grounds for claiming that opportunities can also emerge from the creative endeavor of design and its principles. Therefore, I conducted a research aiming to explore real life examples of design in business settings, and how it contributes to creating market opportunities for companies. Thus, in this part of the paper I present three different cases about design and its impact to the case companies, which are: *ACME Europe, Absurdo Idėjos (Absurd Ideas), and Biržų Duona (a bakery Biržai Bread)*. I called them respectively case companies A, B, and C. Semi-structured interviews and secondary data analysis were used in order to gather empirical data. Interviews were held with the designers responsible, and in *Biržų Duona's* case – with commercial director and marketing manager, as well - in order to gather in-depth insights about the creative design processes in the companies.

Then, secondary data was collected from companies and media in order to evaluate the whole scenery of the design process and its impact on the business. I also took field notes and commentaries so that an overlap of data analysis and collection could be reached (Eisenhardt, 1989). Some of them are presented in

Appendix 12. So, whenever I conducted an interview or visited the places where the items studied are sold, I took notes and pictures, which later on served as a basis for analyzing case data. In addition, overlapping data collection and analysis allows the researchers a flexible data collection, and the freedom to adjust whenever one sees it feasible (Eisenhardt, 1989). So, it was a relief to have such a flexible research design, because there were times when circumstances changed and so, my research needed to be altered as well. This chapter presents narratives for each individual case, distinguishing unique patterns of design and describing the opportunities created due to it.

4.1. Case company A: ACME Europe

The first case company is *ACME Europe* – a producer of electronic, computer accessories, and lightning products, as well as distributing many others worldwide electronic brands. The company was established in 1998 and is now a member of *ACME Grupe* holding. The company produces two

lines of production: *Right Now* and *Urban Harmony*. The former is targeting the ones who are looking for fast and affordable solutions to their needs, while the latter aims at serving the sophisticated city habitants. It is not only providing functionality but also has a solid and attractive design, which has received many awards, including the prestigious *iF Design Award*. I will explore the product line in more details below.

4.1.1. Urban Harmony

The whole catalogue of *Urban Design* product line can be found under the link provided in company's website. Products vary from headphones and speakers to screen cleaners and bags. As the company's designer claimed, the whole product line was created for busy young professionals, living a fast-paced life, looking for high quality and functional, but also aesthetically appealing products (J. Bučelis, personal communication, April 11, 2016). Therefore, the products were produced using a higher quality materials, as compared to the *Right Now* product line, and creating a minimalistic, yet chic, design. The efforts were recognized and rewarded nationally and internationally. All the products that received design awards are presented below.

1. **ACME JUNGLE earphones** received an award at *Good Design 2013* – a national competition for Lithuanian designs. These earphones have a great additional cord organizer, which solves the problem of ever messy and tangled cords. The design is lightweight and simple, created using elastic materials.

Figure 2. ACME JUNGLE earphones (stuf.lt & aurafoto.lt, 2013)

2. **ACME PEAK Messenger bag-backpack** was awarded at *iF DESIGN AWARD 2014*. This product stood out as a convenient and stylish item for people living in vibrant cities. The

main feature is that people can adjust the handles as they wish and turn the backpack into the bag and vice versa whenever needed. So, it becomes irreplaceable for the ones riding bikes to work and then switching to a more formal messenger bag look once they get there.

Figure 3. ACME PEAK Messenger bag-backpack (stuf.lt & aurafoto.lt, 2013; Juste Boreikaite Photography, 2013)

3. **ACME MOON headphones** had received *iF DESIGN AWARD 2014* as well. The main feature is lightweight and minimalistic construction, which allows mobility and makes headphones pleasant to wear. The metal headband can be adjusted to personal needs. The quality of sound and the compatibility with various devices makes these headphones an attractive choice for urban youth.

Figure 4. ACME MOON Light headphones + mic and remote control (stuf.lt & aurafoto.lt, 2013; Juste Barauskaite Photography, 2014)

4. **ACME DROP Screen cleaner 2 in 1** received *iF DESIGN AWARD 2015* and the Lithuanian award *Good Design 2015*. This product is different than other screen cleaners in many ways: it is small, compatible, and its packaging is created using microfiber cloth, which is used to clean the screen. Also, despite its small size, this cleaner can clean up to 80 mobile phone screens. It is the right choice for people valuing functionality as well as design. The cleaner is also alcohol-free, so there is no harmful effect while using it.

Figure 5. ACME DROP Screen cleaner 2 in 1 (ACME, 2015)

5. **ACME PEANUT Wireless rechargeable mouse** was the most successful product of *ACME Europe*. It received five awards in total, including *iF DESIGN AWARD 2013*, two *Plus X Award* prizes in *Design* and *Ease of Use* categories in 2012, and the Lithuanian *Good Design 2012* and *Innovative Product 2012* award. This wireless mouse was inspired by a shape of a peanut, and thus the design is distinctive and attractive. Moreover, the shape allows it to be comfortably used by both left-handed and right-handed people. It also has an integrated lithium polymer battery, which is operational for a month after each charging. Thus, this product has excelled in both - technological feasibility and design. Also, this item is the only one not included in the *Urban Harmony* product line, but in *ACME UNIQUE*, which is no longer in production. But I found it important for company's image, as it was the first product to receive such awards, and pioneered the company into the international design arena.

Figure 6. ACME PEANUT Wireless rechargeable mouse (ACME, 2012)

All the aforementioned products strongly increased the overall awareness about the company and helped gain international recognition in design field, as well. Moreover, the whole *Urban Harmony* product line was rewarded at *Innovative Product* category in the Lithuanian *Innovation Award 2013*

(Lithuanian Innovation Centre, 2015). For those reasons, I found it tempting to meet with the designer responsible for such a promising product category in order to hear the reasons behind such solutions, and other insights on design inside the company. A semi-structured interview was conducted to gather insights about the design process. However, the *Peanut mouse* is no longer in production, and the designer created it no longer works at *ACME Europe*, therefore, the interview went only about the *Urban Design* product line. In addition, I analyzed articles in the popular media to assess the impact of design to the brand image. The following part of the paper will describe the findings and provide an analysis on design and its impact on opportunities for *ACME Europe*.

4.1.2. What's design got to do with it?

Before the *Peanut mouse* and the *Urban Harmony* collection, all *ACME Europe* media exposure was based on strategic company's changes or business development. The company was known as cheap electronics producer, and nothing more. I myself was pleasantly surprised to learn about the aforementioned design and innovation-driven solutions. Thus, the main focus until 2012 in the company used to be on the functional yet boring products with zero design. Therefore, *ACME Europe* was only discussed in the media as an important exporter for Lithuania and one of the biggest companies in sales numbers in the country. Having that said, one might wonder, why pay attention to design when sales are already as good as they are? But the company came to this decision gradually, as Mr. Bučelis mentioned, and wanted to improve the brand image internationally (personal communication, April 11, 2016). There was a notion that *ACME Europe* is a boring orange brand, and so, the company decided to enter a whole new world of design and started creating the Peanut mouse (J. Bučelis, personal communication, April 11, 2016).

After *ACME Europe* received its first *iF Design Award* for its PEANUT mouse, the interest in the company increased in no time. There are many articles in the famous Lithuanian news and business websites, discussing the awards and new company's strategy including more design into the production. As found in one of the articles, I. Rumbutis – the Head of Product Department – claimed, that the company needed to react to ever changing electronics market, thus, the only way was to change together with it or to disappear (Verslo Žinios, 2013). With the PEANUT mouse, the company was able to enter the "stylish & affordable" product segment in the world (Guobys, 2012), which gave a start to the creation of functional but aesthetically appealing products to citizens living

a fast paced life. The need for portable and multifunctional products, which would also satisfy the need to look stylish was identified, and so, *ACME Europe* decided to introduce *Urban Harmony* (Verslo Žinios, 2013).

Thus, at least after looking into the media exposure, it becomes clear that design has opened new markets for *ACME Europe* and increased the brand awareness. There are numerous entries about the innovative design solutions at the company, and many of them – about the prestigious awards in the main portals of Lithuania, such as www.delfi.lt, www.lrytas.lt, www.vz.lt, and www.15min.lt. Thus, the brand image shifted from functional and affordable electronics provider to an innovative design company producing convenient goods to urban dwellers. As stated in one interview in the media, the role of design, as seen by the designers of *ACME Europe*, is to create the pleasure of using the products, and to reflect some of the values of the users; not to only perform the function (Norkus, 2012). That is strongly reflected in the designs of the *Urban Harmony* product line.

In addition, as it was stated during the interview conducted, the change in attitude from company's clients, after introducing the *Urban Harmony* line, was recognized as well. As Mr. Bučelis claimed, once the innovative designs are presented to the prospective clients, they seem to show more excitement and interest into cooperation with *ACME Europe* (personal communication, April 11, 2016). Often, when potential clients see that the company is well-known in electronics design field, they seem to value the functionality of the offerings, too. That leads to increased interest in the *Right Now* product line (J. Bučelis, personal communication, April 11, 2016), and so these pretty designs usually break the ice into creating new partnerships. Thus, the design definitely has an impact on increased media exposure, improved brand image, and on opportunities to enter new markets.

Furthermore, the company took advantage and patented the rewarded products, such as: the PEAK Messenger bag-backpack, the JUNGLE earphones, the PEANUT mouse, and the DROP screen cleaner 2 in 1 (15min.lt, 2015; Sergijenko, 2015). According to Mr. Rumbutis, patents allowed company to cover the cost of investment of producing those innovative solutions (Juškienė, 2015). In addition, the company, which bought the patents is obliged to share 50 percent of sales profit, acquired using the designs, with *ACME Europe* (Juškienė, 2015; Sergijenko, 2015), thus, the designs provided an additional profit opportunity for the company. It is especially useful since there was no additional investment put in rebranding, only allowing the design to speak for itself (Sergijenko, 2015),

and so the company chose to take the advantage of patenting, and the *Industrial Property Rights Protection and Promotion Aid (IPR support)* which funded 95 percent of the patenting expenses (15min.lt, 2015; Juškienė, 2015).

4.1.3. How designs emerge in ACME Europe

In order to gather more in-depth insights about the development of *Urban Harmony* product line, I met with the designer who was working on the concept and created the award winning designs. It was interesting to know how these solutions came to light and what impact on further business growth they had. So, I met Mr. J. Bučelis at the main *ACME Europe* office and we engaged in a conversation about design, business, creativity, and motivation behind the *Urban Harmony* product line. All insights are summarized in the following paragraphs.

Constraints as creativity boosters

As Mr. Bučelis told, *ACME Europe* is a fast-paced company that changes a lot since the market it operates in does not allow to slow down (personal communication, April 11, 2016). Therefore, when company decides to introduce new products into the market, the creatives only have two weeks to come up with the ideas suitable to solve the targeted problems. This time frame, price and the product to be created are the main constraints presented to the designers, and then they have to find the problem to be solved and to come up with the best solution within these frames (J. Bučelis, personal communication, April 11, 2016). According to Mr. Bučelis, the time frame is both an advantage and a disadvantage, because it helps boost the creativity and plan the work, but on the other hand, it also constrains the work in teams and the probability to come up with better ideas (J. Bučelis, personal communication, April 11, 2016). Due to this time constraint, designer works individually, and only after he comes up with the ideas, then he shares them with others in the organization.

The method Mr. Bučelis uses in such cases is the writing down of anything that comes to mind – absurd, crazy, blue sky ideas, the ones that might not even be possible to implement, and then he comes up with something within the budget (personal communication, April 11, 2016). On the other hand, Moses Kang, who is also a designer at *ACME Europe*, described his creative process slightly differently. As one article states, he prefers teamwork, because design is a social endeavor, and also,

he emphasized the importance of experimentation, because one cannot hope to avoid mistakes and create something amazing at their first try (Verslo Žinios, 2012). These two views on design process confirm that there is no universal truth about which technique is better for coming up with breakthrough ideas. But as Mr. Bučelis said, constraints are good for boosting creativity and helps in knowing when to stop, and when to move forward in the process (personal communication, April 11, 2016).

Another important part of the creative process in *ACME Europe* is the "getting out there" and learning from unexpected and even unrelated products and markets. As for example, the DROP screen cleaner 2 in 1 was inspired by a packaging of ketchup. While creating this particular item, Mr. Bučelis identified the problem of screen cleaners being too big to carry with oneself, and so he wanted to make a small, convenient product from flexible materials (personal communication, April 11, 2016). He went to a grocery store and saw the packaging as shown in the Figure 7 below, and only bought it to play while creating a package suitable for a screen cleaner. But as it turned out, that option became the solution for an award winning stylish item, which is now patented. So, even though there are some constraints to their work, designers are still using the unexpected techniques in order to come up with ideas.

Figure 7. The package, which inspired DROP screen cleaner 2 in 1 (CJSC Chumak, 2016)

Iteration and feedback loops

Once the idea for product design is created, the process of prototyping, talking to the manufacturers and testing begins (J. Bučelis, personal communication, April 11, 2016). That is when iterations and technical adjustments are made in case the manufacturers are not capable of producing the exact same product as designers imagined. At *ACME Europe* designers have no say in when selecting the manufacturers, therefore, they do not know precisely whether their designs can be implemented by the selected factories (J. Bučelis, personal communication, April 11, 2016). It might be possible at others, but after the choice of manufacturer has been made, there is no way back. That is when product's technological features can be adjusted. So, prototyping is an important part of design process, which helps purify the concept into the optimal one.

Furthermore, Mr. Bučelis claimed that design is a never ending process, and even after produced no product is ever final (personal communication, April 11, 2016). There are some factors impacting the iterations, such as: feedback from the buyers through shop assistants, number of returns, and observations, which designers sometimes do in order to assess the consumer behavior. Thus, the product is never finished, and the company is engaged in design long after the items are introduced into the market, as well. Furthermore, as Mr. Bučelis revealed, the company makes scheduled product iterations every six months, because the market is just too dynamic to stay still (personal communication, April 11, 2016). There can be no technical errors in electronics market, so a quick reaction is a must.

In short, at the core of design there is always a problem to be solved; it is not about a material form, but the solution to the problem through that form (J. Bučelis, personal communication, April 11, 2016). And that is what creates opportunities to be recognized in more markets and to be chosen by the users who not only care about the technological features, but about the looks of the products, too. The design process at *ACME Europe* is visualized below.

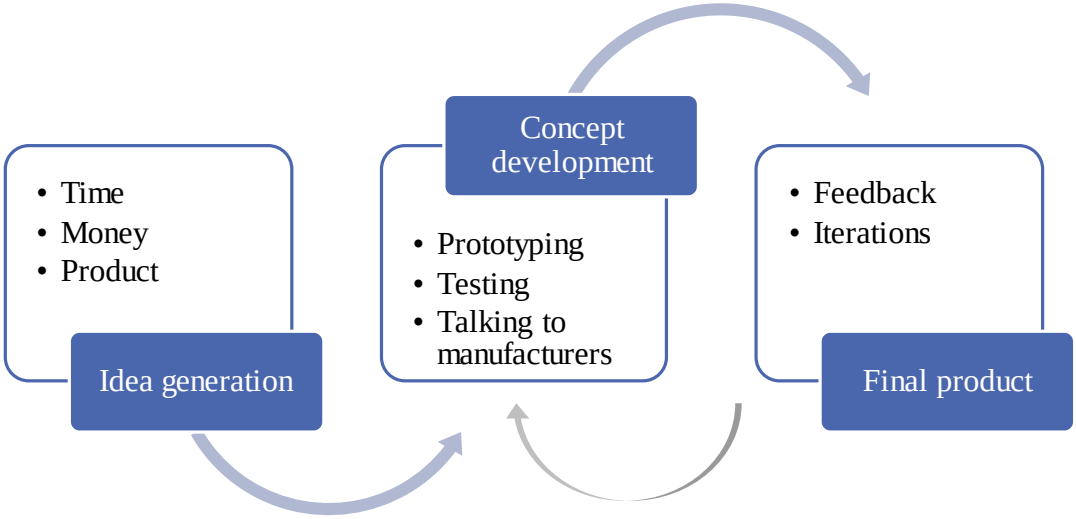

Figure 8. Design process at ACME Europe

4.2. Case company B: Absurdo Idėjos

The second case I was studying whilst exploring opportunity design was a trash design studio *Absurdo Idėjos*. This case was particularly interesting to me because not only it was contributing to design field, but to environmental sustainability as well. I have analyzed articles in the widespread media about this design studio and its founder Jurgita Jakubauskaitė, drove to a conference about industrial waste as an opportunity for design where she was giving a speech, and took and interview via Skype. In addition, I met with J. Jakubauskaitė and the designer of the Finnish Trash Design studio during the Lithuanian Design Week, which was held on the 2nd – 8th of May. All the insights I gathered are summarized in the following paragraphs starting with the concept of trash design and then moving on to what opportunities *Absurdo Idėjos* studio creates.

4.2.1. The story of trash design

Trash design is a relatively young concept. In Lithuania J. Jakubauskaitė was the first to ever engage in such a thing, and it happened when she opened her studio in 2009 (Drigotas & www.grynas.lt, 2012a). Maybe it is a coincidence, but a trash design studio was opened in Helsinki around at the same time, as well. Its founders have created a nice frame for the concept definition, which is as

follows: trash design is to: "see things with new eyes, think in new ways, act differently, Re-use things which are already produced, Re-make old stuff, Re-cycle among friends" (trashdesign.fi, 2013). It mainly is created around things that are seen as waste or are no longer functional, and so, trash designers combine all of them using their creative abilities to make new things and bring them to life. It is extremely relevant nowadays, because enormous quantities of waste are being burned or landfilled, creating irreversible damage to our planet and our health. "If we re-manufacture, reuse and recycle, and if one industry's waste becomes another's raw material, we can move to a more circular economy where waste is eliminated and resources are used in an efficient and sustainable way." (European Commission, 2016), hence, trash design is one of the possibilities to deal with waste in ways that are engaging, creative and increasing awareness on the issue.

4.2.2. The story of Absurdo Idėjos

From expensive lifestyle to trash design

Jurgita Jakubauskaitė is an architect who was once living a very glamorous lifestyle. As she told me during our interview, she used to be a shopaholic, workaholic and a luxury-driven person, living in a huge apartment in the capital of Lithuania (J. Jakubauskaitė, personal communication, April 17, 2016). However, that kind of lifestyle became unsatisfying and she reached a point in her career where nothing seemed to motivate her, because there was nothing new to learn or to accomplish. So, she quit her job and took a break for almost 2 years doing nothing but soul-searching (J. Jakubauskaitė, personal communication, April 17, 2016). She explored new topics and tried new things, and one day she decided to open her own design studio. She found a partner, a nice studio place in the Old Town of Vilnius and signed a lease. However, her partner bailed out at the worst time possible – when her father died, and she had spent all of her savings on the funeral – and so, she was left alone with a long term lease and an empty studio (J. Jakubauskaitė, personal communication, April 17, 2016).

J. Jakubauskaitė claimed that the economic situation in the country and her financial state were the main drivers changing her personal values and the motivation to do something, just in order to survive (Drigotas & www.grynas.lt, 2012a). Therefore, she started to look for some materials, which she could use in order to make anything, be it jewelry, furniture or something else. That is when she realized – having no money for resources, why not try using waste and create something out of what

can be easily acquired – trash (J. Jakubauskaitė, personal communication, April 17, 2016). That is how her first ever trash design collection of handbags was created. As she claimed herself - she created a business out of nothing, which can be reflected in the bricolage theory (Baker & Nelson, 2005) discussed above.

Furthermore, *Absurdo Idėjos* even won a nomination for that as the best business idea in a national competition "Veto krizei!" (Velykienė & "bznstart", 2012) – meaning "veto crisis". She used linen scrap and wire cables to make her first collection of bags, and was surprised to see that there was quite a big interest in them – she sold everything, and so, could buy some hooks for the earrings to be made afterwards from and old computer keyboard (J. Jakubauskaitė, personal communication, April 17, 2016). It is amazing how using her creative abilities and design mindset she was able to establish a successful business with almost no resources, with only the design creating opportunities for profit. Having such a success, she decided to just create designs out of trash, and now she can create anything out of anything, starting with illuminators and finishing with furniture; thanks to her widespread experience.

Furthermore, one of her design principles is functionality. No matter what she creates, she always seeks to first solve some kind of problem through the function of the item, and only then she will move on to the aesthetics. Quality is important not only because of the materials J. Jakubauskaitė is using, but also because design is not about things being pretty, as she claimed during the interview, but about creating something valuable to be used for a very long time (personal communication, April 17, 2016). She cares about long lasting value of products leading to decreasing society's consumption levels and the amount of waste going to dumps as the outcome of cheap production (Rutkauskaitė, 2012). As Jakubauskaitė claimed in one interview found in the media, she wants to show people that there is a variety of resources to create from in Lithuania, and that ecology and design shall go hand-in-hand with one another (Drigotas & www.grynas.lt, 2012a).

Social responsibility

Thus, once J. Jakubauskaitė started creating things from waste, her awareness was increased towards the environment, as well. Not only is she the head of design studio *Absurdo Idėjos* but is also participating in many social events and volunteering (Velykienė & "bznstart", 2012; Mrazauskaitė, 2012; Ekodiena.lt, 2012). There is quite a big media coverage on creative workshops where she was

either the organizer or the guest, teaching participants the techniques of trash design and the importance of re-using. One of such initiatives was made in a high-school, with a goal to renew the classroom only using waste (Drigotas & www.grynas.lt, 2012b). So, the kids took an old cabinet and made it into a sliding game table, as seen in the picture below. Another social initiative was made together with a cosmetic's chain *Douglas*, when all customers were encouraged to bring empty bottles from perfume or any other cosmetic's item, which later on were turned into angels during the creative workshop (lrytas.lt, 2015). With all these social activities, J. Jakubauskaitė wants to share her experience and teach people about sustainable consumption, and a new attitude towards broken things or trash, which usually are dumped instantly.

Figure 9. Sliding game table (Drigotas & www.grynas.lt, 2012b)

Figure 10. Angels created during Douglas workshop (Bauras, 2015)

Furthermore, J. Jakubauskaitė volunteers in *Lithuanian Children and Youth Centers* located in Vilnius and Alytus (personal communication, April 17, 2016). She uses the profit from the design studio to help these centers provide the children with cultural entertainment. As one example found in the media describes, she used her time and resources to renew the outdoor space owned by *Lithuanian Children and Youth Center* in Vilnius, so that children could spend their time in a cozy environment (veidas.lt, 2012). She believes that it is necessary to help young people at social risk group before it is too late (Alfa.lt, 2013), that is why she spends a big portion of her earnings on helping them.

Opportunities for the disadvantaged

As mentioned above, J. Jakubauskaitė spends a lot of time volunteering at *Lithuanian Children and Youth Centers*. Not only she does amazing changes to the environment the children spend their time in, but also – teaches them the techniques of trash design. Her goal is to let them earn some profit,

which could later be spent on going to museums, theatres, concerts, and other cultural entertainment places that these kids have no access to (J. Jakubauskaitė, personal communication, April 17, 2016). So, she teaches them the basic principles of trash design, provides the tools and creates small workshop studios where they can emerge in their creative experiments, some of which lead to items being sold (J. Jakubauskaitė, personal communication, April 17, 2016). That way, the Centers earn additional money and children can get more in terms of leisure activities. In addition, these children are also taught some kind of handicraft and creative thinking, empowering them to be in charge of their free time and maybe later on, leading them onto their own workshop studios, where they can work and earn money.

4.2.3. Trash design in action

It was very interesting to know how trash becomes design. In order to clarify the main design principles at *Absurdo Idėjos* studio, I asked J. Jakubauskaitė how trash design differs from a traditional one. She stated two major differences: materials used and the process of creation (personal communication, April 17, 2016). First, since waste is used - the materials design is made from are almost always free of charge. As claimed in the media, many broken things or trash are brought to the studio by J. Jakubauskaitė's friends or just anyone who knows about *Absurdo Idėjos* (Mrazauskaitė, 2012; Drigotas & www.grynas.lt, 2012a; Alfa.lt, 2013; www.delfi.lt, 2015). She herself treats all trash as possible materials, and is full of ideas of how to re-use broken things. If the item or material cannot be used now, she is confident she will find the way to use it in the future (Drigotas & www.grynas.lt, 2012a). So, as compared to a traditional design studio, trash design studio has a great cost advantage regarding the materials.

As for the creative process, a traditional design studio produces drafts and then gives them to the production facilities. In a way, design is being created "on paper" there. While in *Absurdo Idėjos* studio everything is made by hands from the beginning, and the whole idea of how the product will look like changes continuously until the item is finished. As J. Jakubauskaitė claims, that kind of work provides the designers with complete freedom of how to go about the creative process and the materials at hand because there are no cost constraints (www.delfi.lt, 2015). On the other hand, the designer has to adapt to the shape and texture of the materials, which might be difficult and take more time, but it also boosts creativity, resulting in unexpected remarkable designs (www.delfi.lt,

2015). There is always an element of surprise in such designs, maybe because J. Jakubauskaitė does not think of the materials as either suitable for the designs or not (Užupis Art Incubator, 2013). Some of the designs by *Absurdo Idėjos* are presented below.

Figure 11. Illuminators (J. Jakubauskautė's photo)

Figure 12. Collection of ties (J. Jakubauskautė's photo)

Figure 13. Handbags (J. Jakubauskautė's photo)

In addition, all of the designs made from trash are the outcome of interacting with the materials, experimenting and learning from mistakes. Design is an ongoing iterative process and it always go through three major phases as shown below, always starting with function, and is influenced by the materials the designer is going to work with (J. Jakubauskaitė, personal communication, April 17, 2016):

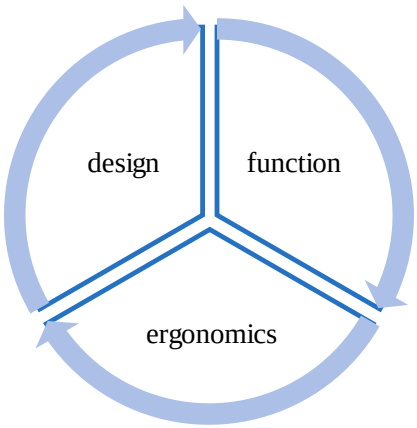

Figure 14. Design process at Absurdo Idėjos

Furthermore, design in *Absurdo Idėjos* studio is seen as the creator of our lifestyle, while introducing novel opportunities for technological and social progress through user-friendly features (J. Jakubauskaitė, personal communication, April 17, 2016). Trash design is a great way of drawing attention to global problems, leading to new ways of dealing with consumption and collaboration between business and designers. As J. Jakubauskaitė said, if the industry paid attention to design as a problem solving technique, they could solve the issue of industrial waste by using it to create additional value. As an example for design and industry collaboration, during the conference I went to, she used curtain factories and how the textile scrap could be used further into making shopping bags, which could then be supplied to supermarkets instead of plastic bags (Jakubauskaitė, 2016). That way we could lower plastic consumption and textile waste going into the dumps.

Therefore, trash design creates opportunities to: increase awareness on sustainability, collaboration between industry and design, introduce creative ways of dealing with trash, encourage to re-use, and even to earn some profit out of doing so. For example the starting prices at *Absurdo Idėjos* are 20 EUR for a tie, 30 EUR for a bag, and 100 EUR for an illuminator, which vary according to the time spent

and creative work put into the products (J. Jakubauskaitė, personal communication, April 17, 2016). So, as I mentioned above, using trash design can help people at social risk groups, or for example young inexperienced designers who want to experiment at low cost. Hence, trash design enables anyone to create wonderful things and earn profit, using cheap or even free materials, while also doing a good deed for the environment and increasing society's wellbeing.

4.3. Case company C: Biržų Duona

The third case company I explored was *Biržų Duona* – a Lithuanian, family owned bakery from a small town Biržai. Articles in the media were analyzed in order to gather insights about the company, as well as a focus group interview was conducted to hear the stories from people creating designs and new concepts. Thus, I met the commercial director and the marketing manager of *Biržų Duona*, and the designer who created the packaging for several products in one of the company's offices. They all agreed to pose for a team picture, which can be found in Appendix 5. In the following sections I explore company's history and the design process, which has led to many design awards and a new brand image.

4.3.1. Introduction to the company

Biržų Duona was founded in 1953 and in 2000 it became a fully-owned Kurganovas' family business (Grižibauskienė, 2014). It is famous for its traditional old-fashioned way of baking using bread leaven, which is stored-in for decades and even hundreds of years (coming from great-grandmothers), while the rivals only use yeast, aiming for fast, quantity-oriented production (Grižibauskienė, 2014). The bakery is also "Ekoagros" certified, allowing the company to bake ecological products, including the traditional rye bread (Lithuanian Food Exporters Association, 2016). Even though 'traditions' is one of the main business values, the company is always striving for something new, be it a new product, a new local café, or an energy-saving production technology (Biržų Duona, 2015; AINA Naujienos, 2015). Even when the financial crisis had hit the market in 2008-2009, *Biržų Duona* was earning profit, because, as company's director claimed, they kept on investing in development and technology, increasing the market share (Čaplikas, 2009).

Innovative mindset was a player in making a decision to hire a designer to create new packaging for *Biržų Duona* products, as well. It all happened naturally when a younger generation of Kurganovas' family entered the business and was getting more and more responsibilities. Andrius Kurganovas – son of the owner of the bakery - used to work in the family business since he was a teenager, and in 2003 he was already working there full-time, which gradually led to him being put in charge of commerce and marketing (Laurinavičienė, 2016). This is how the company started working with Edvardas Kavarskas – a freelance designer – in around 2012, after Mr. Andrius was introduced to him by a friend (A. Kurganovas, personal communication, April 22, 2016). E. Kavarskas is a famous, award-winning packaging and brand designer (Vilnius Academy of Arts, 2014), responsible for creating new package designs for *Biržų Duona*, which led to increased sales and brand awareness.

E. Kavarskas has introduced several lines of successful packaging for the company, as well as rebranding and new brand identity. The packaging was created for such product lines: *Grissini* breadsticks, *SUCRÉ* macarons, *VMG* (*Kitchen Myth Busters*) bread, and *Miltė (Miss Flour)* product line. In the following paragraphs I will explore *Grissini* and *SUCRÉ* designs, and the kind of impact they had on company's turnover and the whole organizational culture. The other designs are not included in the discussion because of the company's choice to elaborate more on *Grissini* and *SUCRÉ* product lines.

4.3.2. Design in Biržų Duona

Grissini

Grissini breadsticks was the first project that E. Kavarskas and *Biržų Duona* worked on together. The product was included in the offerings a long time before the company started working with the designer. However, the packaging was pale, old-fashioned and unattractive (ref. Figure 15). Only when breadsticks became a popular snack in Lithuania, the company felt the need to react and change the way the product was presented, and to offer a new concept of grissini breadsticks (Kavarskas, 2013; The Dieline, 2012). The aim of the new packaging was to attract the youthful buyers, looking for healthy new tastes in snacks (Kavarskas, 2013; The Dieline, 2012; lrytas.lt, 2013). In addition, new tastes were introduced increasing the product line into 4 tastes: with olive oil, with rosemary, with sesame seeds and fried onion.

The main concept was built around typography and storytelling about the products, using bright appealing colors (Kavarskas, 2013; lrytas.lt, 2013; The Dieline, 2012). Also, the designer decided to include a see-through 'window' displaying the product, because Lithuanians are suspicious towards buying the food they cannot see clearly (E. Kavarskas, personal communication, April 22, 2016). This new packaging was awarded at the famous *A'Design Award and Competition* in *Packaging Design* category for 2012-2013 (lrytas.lt, 2013; Kavarskas, 2013; A' Design Award and Competition, 2012). It is believed that this award stands for outstanding quality, and receiving such an acknowledgement is an important achievement for both the designer and the business (DMN inf., 2013). Moreover, the new design also shifted the whole brand image of *Biržų Duona* in the snack category. As the designer claimed, it provided self-confidence and the clients began to value one's quality and competency of work more (lrytas.lt, 2013). The new awarded package and the old one are presented below.

Figure 15. Old Grissini package (Kurganovas & Kavarskas, 2015)

Figure 16. New package of Grissini (Kurganovas & Kavarskas, 2015)

In addition to the improved brand image and awareness, the new packaging design has led to a huge boost in sales. As A. Kurganovas told during the interview, the sales of *Grissini* breadsticks increased more than 3 times (personal communication, April 22, 2016). The graph of change in sales can be seen in Appendix 6. Furthermore, using design in business is seen as a huge advantage for the company, and as the Marketing Manager of *Biržų Duona* claimed, they see a huge value added by design, leading to uniqueness and exclusivity in the points of sales (Balčiūnienė, 2015b). On the other hand, it cannot be purely stated that the turnover increased only because of the new design, but it sure had a huge impact on new brand image and company's position in the market (A. Kurganovas,

personal communication, April 22, 2016). There is a perceived risk of investing in design, but E. Kavarskas believes this risk can be lowered, if the designer is treated as a partner and is included in all the phases of introducing the new design, not only treated as a creator, drawing the sketches (UAB "MVP SPRENDIMAI", 2015).

Furthermore, the design is a process, as E. Kavarskas elaborated during the interview, and there is always a lesson to be learned, that is why after a few years the packaging of *Grissini* breadsticks was altered a little more (personal communication, April 22, 2016). It was learned from the clients selling the products that the breadsticks keep on breaking due to careless distribution and storage, and then customers can see the broken pieces and perceive the product as unattractive (A. Kurganovas, personal communication, April 22, 2016). Therefore the size of the 'window' displaying the product was reduced. The new package now also has brighter colors and additional language descriptions due to increased export options. The shift to the newest form of *Grissini* package can be seen in the figures below. One picture was taken during the interview and the other one – in the supermarket, where it is clearly seen that the breadsticks are really broken, making the product less attractive.

Figure 17. Altered package of Grissini

Figure 18. Grissini's display in the supermarket

SUCRÉ

SUCRÉ macarons is another successful design created by E. Kavarskas for *Biržų Duona*. It is a line of sweet delights aimed at cosmopolitan women; *SUCRÉ* is more than just a brand – it is a personal and sincere way of living the tasty life (Kavarskas, 2015; Lin, 2015). There are three lines of macarons' tastes: classic flavors, fruit tastes, and floral tastes. All of them are subdivided into more categories of, for example: champagne & brown sugar in the classic flavor line, passion fruit in the fruit taste line, and cool mint in the floral taste line, among the others. The product was targeted to be either a gift shared among friends or a small delicious treatment after a long hard day, with the slogan "taste-a-porter" – the art of living tasty – which motivated to create the packaging of macarons into an open and attractive box (Kavarskas, 2015).

The design of the packaging was inspired by Suprematist and Constructivist artists, whose influence is seen in the subsequent abstract art, especially in modern minimalism and contemporary fashion styles (Adrenalinas, 2015; Kavarskas, 2015; Sample., 2015). *Biržų Duona* wanted a package, which would reflect the effort ant time they took while creating these beautiful sweets, as well as a personal experience while enjoying them (Sample., 2015). That is why the double-layered package was created, allowing to easily take the product out of the package in a 'drawer-like' box and place in on the table. As the designer elaborated on this: "It was important to bring a sense of adventure into the process of unpacking the food. Moreover, it had to be easy to place the macarons on the table, and the opened package had to remain attractive as well." (Sample., 2015, p. 34). The design can be seen in the figures below.

Figure 19. *SUCRÉ* macarons package design (Kurganovas & Kavarskas, 2015)

Figure 20. SUCRÉ macarons package design (Pauliukonis, 2015)

Furthermore, the packaging for *SUCRÉ* has won several design awards and was even featured on the cover of *Sample* magazine on the issue dedicated to packaging design (ref. Appendix 7). These were significant wins for the company and the designer, because the project had a limited budget and since they wanted a minimal packaging, there was a challenge of "achieving a pleasant touch and a visibly attractive, uniform surface" (Sample., 2015). That is why the cooperation with the printing house played a huge role, leading to the package design that satisfied all the client's needs (Sample., 2015).

As a result, the product line *SUCRÉ* was awarded the first place at the *National Packaging Design Award (NAPA)* 2015 in *Food and Beverages Packaging Category* (15min.lt, 2015; Balčiūnienė, 2015a). The jury of this award assessed innovativeness, functionality, sustainability, technological solutions, and aesthetics of the packaging (Kliukaitė, 2015). In addition, it also received a Lithuanian design award *Good Design 2015* diploma (Association "Dizaino forumas", 2015). What is more, this package also received a bronze award in the Lithuanian Advertising Festival *Adrenalinas* 2015 for the innovative package design solutions (LGDA, 2015; Adrenalinas, 2015). All these awards not only recognized the designer and his work, but also – increased company's brand awareness and public image. It is a great example of a partnership between business and a designer, and as E. Kavarskas claimed, these awards create additional value for the product and distinguishes it from many analogical ones (Litexpo, 2015).

4.3.3. Design process as an ongoing partnership

The main principle of working with a freelance designer and achieving great results, according to E. Kavarskas, is for the business to treat him as a partner not as a solver of a given design issue (Jankaitytė, 2015). Only when business and designer establish a collaborative relationship can they expect to achieve the desired results. In this case it is particularly interesting because E. Kavarskas is a freelancer, but he has been involved in many internal decisions since the beginning of the co-operation; he even had a voice in hiring the current Marketing Manager (A. Kurganovas & E. Kavarskas, personal communication, April 22, 2016). As the Commercial Director claimed, he trusted E. Kavarskas judgement and thought it was important to hire someone, that the designer could work well (A. Kurganovas, personal communication, April 22, 2016). So, the core principle of design in *Biržų Duona* is the ongoing multidisciplinary collaboration.

Design process

However, it is also up for the designer to initiate the relationship and try to get involved in all of the phases of the new package development (Kurganovas & Kavarskas, 2015). So, in this case, E. Kavarskas has developed 23 questions for the client before they start to work (see Appendix 8). The answers to these questions form a design brief, which is treated as a framework for the desired result, and helps to clarify brand values and the target group (Jankaitytė, 2015), and is the way forward for the designer and others involved. As the Marketing Manager of *Biržų Duona* claimed, these questions are helpful for the organization as well, because they prompt to pay attention to details, which otherwise would not be thought of (R. Kirpliukaitė, personal communication, April 22, 2016). The aim of the brief is to make sure to gather as much relevant technical information, as well. The designer has to know about the distribution channels, logistics and even export plans, because all this information is relevant in creating the package, which would fully satisfy client's needs (Jankaitytė, 2015).

Thus, these 23 questions and the brief is seen as stage 1 in the design process. In addition to that, E. Kavarskas advice on begin the collaboration with the printing house as soon as possible, because many technical issues can be solved and altered during the design process, avoiding the possibility of spoilage (E. Kavarskas, personal communication, April 22, 2016). After the brief has been developed,

the designer needs to see the production process of the product, in order to understand the peculiarities of it, which later on influences the packaging (Jankaitytė, 2015). As he elaborated during the interview, the designer has to be involved in all of the phases in the development, because the package is going to be the image of that product, and the more information can be gathered, the better the package is going to be created, leading to the desired value added (E. Kavarskas, personal communication, April 2, 2016).

Another important phase of the pre-design is to "go out there" and see where the product is going to be displayed. A common mistake the designers make is when they present the design on the white background, and the fault in this is that the product is not going to be sold in a clean white environment, there is going to be a massive amount of competition, meaning: tons of colors, forms and words (E. Kavarskas, personal communication, April 22, 2016). That is why the designer himself visits all the future points-of-sale, measures the height and width of the shelfs, and takes pictures of the competitors' products, all in order to have a better understanding of the market and how the future product could be distinguished (E. Kavarskas, personal communication, April 22, 2016).

Thus, after the pre-design stages are over, and all the relevant information is gathered, the sketching and developing of the design takes place (Jankaitytė, 2015). This phase requires a complete concentration and a fresh mind, which is why the designer takes approximately two weeks off after researching the market, so that he could start working rested and with all the information in place (E. Kavarskas, personal communication, April 22, 2016). He usually creates several possible designs and works closely with the client in order to achieve the optimal result. Teamwork was mentioned several times during the interview, leaving no doubt about the benefits it provides while creating the design. As E. Kavarskas said, everyone in the process may have different goals, but once they are clarified, everybody can concentrate on doing what they know best and create a thoroughly satisfying design (personal communication, April 22, 2016).

After the sketching part is over, the last phase of collaborative design process in *Biržų Duona* is to hand-in the design conception to the printing house together, so that the colors and other important aspects could really meet the expectations of the client (E. Kavarskas, personal communication, April 22, 2016). It is not enough to agree on the color Pantone code and just hope to receive that exact one on the package. There are many things that can go wrong, and only by participating in all the stages can the client and the designer be prepared to come up with the solutions to the possible issues

on the way. This constant inclusion in all of the phases of developing new products has led to creating outstanding, award-winning designs, increasing sales, and improving the brand image for *Biržų Duona*. The visualization of the design process is presented below.

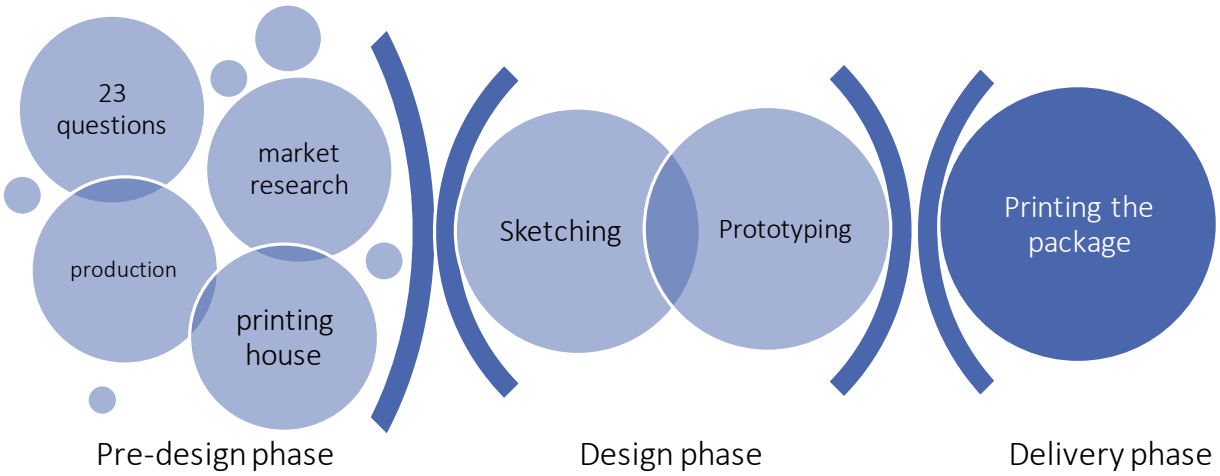

Figure 21. Design process at Biržų Duona

Design as a marketing tool

As it was mentioned above, *Biržų Duona* is a family business, acquired by Mr. V. Kurganovas in 2000 with all the debt, old and/or broken technology and basically no organizational order (Grižibauskienė, 2014). There were many things to be improved before even starting to think about design or novel products. However, after the company started to work with E. Kavarskas, they learned that positive publicity can play a huge role in sales and brand image. What was interesting to learn during the interview, is that there was no Marketing department up until 2013 (A. Kurganovas, personal communication, April 22, 2016), and design was playing the role of promotion instead.

For example, the first project with the designer – *Grissini* breadsticks – was launched into the market in 2012, and has led the company to huge boost in sales and amount of publicity. All of the main news portals in Lithuania mentioned the design award this project has won. Even more, it also received gold medal in the *Lithuanian Product of the Year* award in 2012 (Gintautaitė, 2012). All that without any marketing strategy. Furthermore, company's design solutions have been published in many professional websites, such as www.packagingoftheworld.com, www.thedieline.com ,

www.packagedesignmag.com , www.worlddesignconsortium.com, www.fordesignmagazine.com, www.designtodo.com, to mention a few. And since the new design for *Grissini* has increased the product sales by 340 percent as it can be seen in Appendix 6, it can be stated that opportunities for profit can be designed, as well as create additional brand value.

Furthermore, as the group elaborated during the interview, advertising sometimes is not as effective as design. If the budget for publicity is limited, investing in a good photoshoot of the product and its packaging design can create a better public relations effect (A. Kurganovas & E. Kavarskas, personal communication, April 22, 2016). As compared to an A4 advertisement space in a magazine, which can cost ~ 2000 EUR, investing in a photoshoot and in participation in a design competition in *Biržų Duona's* case has turned out to be more worthwhile (E. Kavarskas, personal communication, April 22, 2016). So, a great design speaks for itself, and attracts the attention for its novel and creative solutions, leading to word of mouth and value added to the company. Furthermore, as A. Kurganovas claimed, all of the design solutions attract a lot of attention from the competitors, as well, who follow every step the company makes (personal communication, April 22, 2016). So, even though *Biržų Duona* is a small bakery compared to the market leaders, its design and innovative solutions are a few steps ahead.

5. Cross-case analysis

The previous chapter presented three different case companies that were studied under the context of design and opportunities emerging from it. All different case narratives provides clear and organized data about each case as stand-alone entities (Eisenhardt, 1989). The main focus was on particular design solutions, which already had gained public recognition, so that the research could study the impact design had on organizations and their turnover. In addition, after the study was made it became apparent that all of the cases vary in their design processes, so this part of the thesis will define and analyze the differences and more importantly – the similarities between them grasped in this research. The individual case narratives presented in Chapter 4 allowed unique patterns to emerge (Eisenhardt, 1989), which later on are generalized into a framework of opportunity design. The cross-case patterns are presented below, followed by an emerging theory and implications for further research.

5.1. Cross-case patterns

It is believed that generating findings from cases is still not well defined, and analyzing case study evidence can be especially difficult (Yin, 2003; Eisenhardt, 1989). People are believed to be "poor processors of data" (Eisenhardt, 1989, p. 540), who might be influenced by characteristics of respondents or ignore statistical findings. Therefore, categories or dimensions have to be selected before looking for similarities among cases (Eisenhardt, 1989), and in this research the categories for patterns are developed from the theoretical background of design and opportunities. As I discussed in the literature review part, design and design thinking create opportunities through their iterative, diverse team processes, focusing on empathy towards the end users.

Therefore, I distinguished such categories for looking for cross-case patterns in terms of opportunity design: *attitude towards uncertainty and surprise, attitude towards future, collaboration, collective creativity and teams, tacit knowledge, multidisciplinary and diverse teams, user-centered, problem solving, visual tools, empathy, iterative process, constraints, experimentation, prototyping, brainstorming, observation, attitude towards complex reality, market research*. It might seem like a lot for a comparison of the cases, but since design has proven to create value for businesses while adopting the principles of design thinking, as it was

discussed in the literature review, it is important to analyze whether the cases studied also apply these principles, and what their attitude towards the categories listed is.

In order to present all the findings based on these categories, tables below are summarizing case evidence. It is claimed that:

> A separate table that summarizes the evidence for each theoretical construct is a particularly effective way to present the case evidence. These "construct tables" summarize the case evidence and indicate how the focal construct is "measured," thus increasing the "testability" of the theory and creating a particularly strong bridge from the qualitative evidence to theory-testing research. (Eisenhardt & Graebner, 2007, p. 29)

Therefore, not only patterns for design thinking in the companies are analyzed, but also, what opportunities the design helped to seize. I distinguished these categories of opportunities as designed for: *profit, new markets, increased brand awareness, improved public image, awards, international recognition, improved clients' attitude towards the company, attention grabbing, additional sources of income (patents), complex problem solving*. Both tables with findings are presented below. An *X* is entered in the fields where a particular category is met within a case company, and a blank is left where it is not. In addition, commentaries are provided under the categories that need a more compelling evidence than just a positive answer expressed with an *X*. Then, explanations are presented for each of the tables, allowing to "enhance the probability that the investigators will capture the novel findings which may exist in the data" (Eisenhardt, 1989, p. 541), and to draw generalized cross-case conclusions from the findings (Yin, 2003).

Table 4. Cross-case patterns for design process

	ACME Europe	**Absurdo Idėjos**	**Biržų Duona**
Attitude towards uncertainty and surprise	Deal with it.	Each design is a surprise.	Manageable.
Attitude towards future	Adapting to future.	Change it.	Altering towards the future.
Attitude towards complex reality	Change with it.	Adapt to it.	Deal with it.
Collaboration	*X*		*X*

Collective creativity	*X*		*X*
Multidisciplinary and diverse teams			*X*
Tacit knowledge		*X*	Grows with experience.
User-centered	*X*	*X*	
Empathy	*X*		
Problem solving	*X*	*X*	*X*
Constraints	Time, money, product.	Materials.	Production, printing, markets.
Visual tools	*X*	Working with hands.	*X*
Iterations	Every 6 months.		*X*
Experiments	*X*	*X*	*X*
Prototyping	*X*	For special orders.	*X*
Brainstorming	*X*		*X*
Observation	*X*		*X*
Market research	Done by management.		*X*

The table above presents the categories in terms of design process, which were used to establish a common framework of opportunity design from the case companies studied. The individual design processes were already presented as figures in Chapter 4, and so, the goal of this analysis is to establish a common design process for creating opportunities.

Thus, the categories, which each case company meets are as follow: problem solving, constraints, experiments, and prototyping. In addition, each case company acknowledges the uncertainty and complex reality of their working environments, which is a strong argument for design principles to be enacted in all organizations. Welcoming uncertainty instead of running from it is in the core of

design thinking as it was presented in Chapter 3, as well as experimenting, prototyping, and using frames to boost creativity. Therefore all the case companies can be claimed to use these principles of design thinking in opportunity design.

Furthermore, *Absurdo Idėjos* can be seen as an outsider in this study, because it is more of a sustainability and social responsibility driven project, rather than a business. Yes, trash design is a good source for profit opportunities, but as a case company it can be seen as too simple in terms of operations and management processes. This is also evident in the table presented above, in terms of categories that are present in the other two companies, such as: collaboration, collective creativity, iterations, brainstorming, observations, and market research. It is interesting to experience such differences, because it only confirms the notion that design cannot be generalized and understood in linear patterns.

In addition to generalizing patterns from design processes, I also analyzed the types of opportunities designed in companies studied. I feel that the notion of opportunities for entrepreneurial profit is insufficient in terms of the additional value design creates as the research has shown. Thus, the table below presents the findings on what types of opportunities were created through design in the case companies. The common ones are opportunities for: profit, new markets, increased brand awareness, awards, international recognition, and grabbing attention. Therefore, it could be stated that opportunities as designed are not only a source for profit, but also for adding value to the brand, grabbing attention and opening new markets. All of which in long-term are new opportunities for profit.

Table 5. Opportunities emerged from design

	ACME Europe	**Absurdo Idėjos**	**Biržų Duona**
Profit	*X*	*X*	*X*
New markets	*X*	*X*	*X*
Increased brand awareness	*X*	*X*	*X*
Improved public image	*X*		*X*
Awards	*X*	*X*	*X*

International recognition	*X*	*X*	*X*
Improved clients' attitude towards the company	*X*		*X*
Attention grabbing	*X*	*X*	*X*
Additional sources of income (patents)	*X*		
Social problem solving		*X*	

This part of the thesis presents general categories that were confirmed by each case company, so, in the next part I will establish a common opportunity design framework and will compare it to the one already created by Nielsen et al. (2012).

5.2. Generalization of findings

De Vaus (2001) claims that "Theoretical generalization involves generalizing from a study to a *theory*." (p. 237, emphasis in original). And so, this part of the paper aims at establishing a common framework for opportunity design. As it was presented above, there were categories of design thinking that all of the cases studied corresponds to: *problem solving, constraints, experiments*, and *prototyping*. In addition, there were several categories that two of the cases confirmed in the study, such as: *collaboration, collective creativity, iterations, brainstorming, observations,* and *market research*. Only empathy and multidisciplinary teams were evident only across one of the case companies. In addition, since market research in *ACME Europe* is made by marketing team, I also cross this out of the common categories list, because as the study showed, the designer cannot influence anything before the design phase starts.

Furthermore, since *Absurdo Idėjos* are more of a project engaging in socially responsible initiatives than an established business, I treat the categories evident only across *ACME Europe* and *Biržų Duona* as more compelling ones. And so, I take into consideration all of the categories that were evident in all three companies, as well as the ones evident in *ACME Europe* and *Biržų Duona* but not evident in *Absurdo Idėjos*. So, the list of common categories are as follow: *problem solving, constraints, experiments, prototyping, collaboration, collective creativity, iterations, visual tools, brainstorming,* and *observation*. As it was

already claimed, this research will be affected by my personal interpretations, but I see these categories as the most sensemaking in terms of what I experienced during the research. Thus, I categorized all of the selected phases according to the sequence of design process, and that leads me to a process model as presented below.

Figure 22. Opportunity design process

Therefore, opportunity design is a way of solving problems and designing an opportunity as a solution to the problem area. This finding contributes to the idea of design as turning problems into opportunities (Brown, 2009), as I presented in Chapter 3. Thus, the process begins with a problem the design has to solve and some constraints formed by the forces outside of designer's influence. These can be, as seen in the research, ways of production, time or budget. So, the designer engages in an active observation of the problem area, and gathers insights for possible solutions. In addition, it was observed in all the cases that function is an important part of the design, and so, the first stage of opportunity design is to get to know the problem and learn about the function expected from design. Then, the process enters the opportunity area, the one leading to ideas for design solutions, experimenting and prototyping. In addition, this phase is highly collaborative, and teams are seen as an advantage in terms of the quality and amount of ideas to be created. Visual aids are important in this step, so that teams could communicate the ideas more easily and efficient. Opportunity area is also the phase where design is created and then the process moves onto the solution area – the development of the finished design, which in this phase can be altered due to the feedback received from clients, users, or producers.

As the research conducted showed, design can be the reason for opportunities in terms of new markets, increased brand awareness, awards, international recognition, and grabbing attention. Which goes ways beyond the definition of entrepreneurial opportunities as valuable only after they generate profit (Kirzner, 1997; Gartner, et al. 2008; Shane & Venkataraman, 2000). As seen from the case

companies, design was the reason they received such a huge attention from the media and design competitions. Design was the reason behind entering new markets and improved brand image, design can even replace marketing as seen in *Biržų Duona* case. And, design was the main factor for additional value-added to the companies. However, it is a questionable atempt to claim that design was the only factor for achieving such results, but it for sure led to increasing brand awareness, which in return leads to higher sales figures, therefore, more profit.

5.3. Discussion and further research

In this part of the paper I compare research findings to the ones presented by Nielsen et al. (2012). It is claimed that "tying the emergent theory to existing literature enhances the internal validity, generalizability, and theoretical level of theory building from case study research." (Eisenhardt, 1989, p. 545). Therefore, when comparing the findings with an already existant attempt to develop a theory of opportunity design, I can analyze to what extent this thesis contributed to the field and whether the findings are consistent. However, there is a lack of empirical studies on the topic, so whatever the comparison results will be, it will not generate a solid new theory, since the sample of research is relatively small in both this research, and the one conducted by Nielsen et al. (2012). Thus, this discussion is an attempt to bring both studies together and see whether a unified process for opportunity design can emerge.

Therefore, as Nielsen et al. (2012) described opportunity design, it consisted of three phases: "1) Opening up the opportunity design; 2) Ideation and conceptualization of opportunities; 3) Opportunity selection and exploitation." (Discussion: A Framework of Opportunity Design section, para. 1). Their findings were based on a single case study, and the whole process begins with the step of moving-in, followed by circulation between the moving-in and moving-out, and ending with the opportunity selection and exploitation. As the researchers claimed: "opportunity design is an iterative process of simultaneously moving-out, reframing, stretching, and expanding alternative understandings of problems/solutions and moving-in this space by narrowing down the alternatives to make the design comprehensible for potential opportunity users." (Nielsen et al., 2012, Discussion: A Framework of Opportunity Design section, para. 4). Furthermore, the process is presented as

highly iterative and promoting collaboration, so that the best opportunities to fit the market context could be designed.

As for this thesis, the results presented complement the research described above. The process of opportunity design also includes problem solving, and it could be stated that the problem area is the part of moving-in, where a linear process can be applied into dealing with constraints and gathering insights thorough observation. In addition, opportunity area then can be claimed to reflect the moving-out stage of ideation and conceptualization of opportunities. Both stages focus on collaborative creativity and building up on the team and individual knowledge. And the last stage of solution area presented is also similar to the previous research because this is the phase of opportunity exploitation. Therefore, it could be claimed that the research conducted follows the framework of Nielsen et al. (2012).

On the other hand, the process presented in this thesis differs from the previous research in a way that it focuses more on the precise methods and tools used in order to design new opportunities. Ambuiguities are reduced in terms of what exactly did designers do while creating award-winning solutions, and so the evidence from this particular study leads to more compelling results. Furthermore, this research focused on more than just profit opportunities and explored the ways in which value was created for the case companies, and what was the role of design. It could be claimed that design provides means of achieving recognition and improving brand image, as well as earning profit. Thus, opportunity design is a way of solving particular problems in a business setting through design and establishing solutions leading to enhanced brand value and increasing sales. It also should be stated the cases studied in this research led to a conclusion that artful creation (as *Absurdo Idėjos* case showed) can design profit opportunities, but the model established complies better with business organizations.

Furthermore, the research field is still a novice, which leaves the discussion about opportunity design open. Scholars from entrepreneurship and design fields have a fine basis of evidence of *opportunities as designed* provided in this research. However, additional studies might improve the findings and shift the framework even further. As there were categories of design thinking this particular research could not confirm, such as empathy or multidisciplinary teams, it is still an open area to be further investigated. It is also important to distinguish the types of opportunities to be designed, as well as

the particular settings this framework works in well, and where it does not. As for this particular research conducted, design is seen as an important asset and value creator, leading to profit opportunities, but the scope of the research invites the field to be investigated more and provide new evidence towards opportunity design.

6. Conclusion

This thesis was aimed at exploring designers and their actions which have led to successful solutions in businesses. The goal was to explore whether opportunities for profit – as defined in entrepreneurial literature – can also be designed, complementing the already existing notions of the nature of opportunities as either discovered or created. Thus, empirical study was conducted within a case study research design, which was modeled as multiple and holistic, allowing to explore three different case companies under the frame of the same context, so that the answer to a research question would be more compelling and valid. By studying such diverse companies as electronics provider, bakery and trash design studio, I gathered a variety of compelling evidence, leading to more reliable research findings.

In addition, before entering the empirical study field, I conducted theoretical analysis, which helped clarify the definitions of opportunity and the discipline of design. This was important in terms of framing the questions to the case companies and to the extent of what exactly shall be studied in the field. A comparison of opportunity creation and design thinking closed the literature review, allowing me to distinguish some common grounds between them and to establish categories for cross-case analysis, which was conducted after all of the cases studied were presented as single units in Chapter 4. The empirical data was collected through semi-structured and focus group interviews, as well as analyzing secondary data from media articles and specialized design websites. The study showed that design can create opportunities not only for profit, but for entering new markets, increasing brand awareness, receiving awards, and grabbing attention, as well.

Therefore, a model for opportunity design was established as the outcome of the study conducted. It shows that designing opportunities is a process of problem solving, which through design can emerge to new opportunities for business. Three stages were presented, such as: problem area, opportunity area, and solution area, all consisting of more precise steps and focusing on distinct activities as ways to move further. In addition, iterations and collective creativity are presented as important parts of the process, which can improve the quality of ideas and new possibilities to be exploited as opportunities. In addition, a comparison between the presented model and the one already made by previous scholars was included in the discussion, in order to assess the validity of

the findings. And so, it could be stated that the research contributed to the model already presented for opportunity design, only from a different perspective.

Furthermore, implications for further research were presented as means to contribute to the study field even more. There were categories of design and design thinking as expressed in the literature that this study did not confirm, and so, the findings cannot be seen as finite. Also, since I adapted interpretive pragmatism in my thesis, I see reality as constructed continuously, so whatever the findings of this research, they are only complete until a new inquiry are made upon them (Cochran, 2002). Especially because the context is playing a significant role in the way research is going to be done.

It can be claimed that the research question about whether designers can design opportunities and how they go about doing so was answered with valid and reliable data. And so, opportunities can be *designed* as well as created or discovered, and the framework presented provides the outline of such process. In addition, it can be applied to any context of problem solving and contribute not only to the notion of entrepreneurs as designers presented by Sarasvathy (2004), but also – to the one claiming that designers are in a way entrepreneurs as well, *designing* opportunities for profit, brand awareness, entering new markets, and public recognition under the conditions of surprise and uncertainty, as this study has shown.

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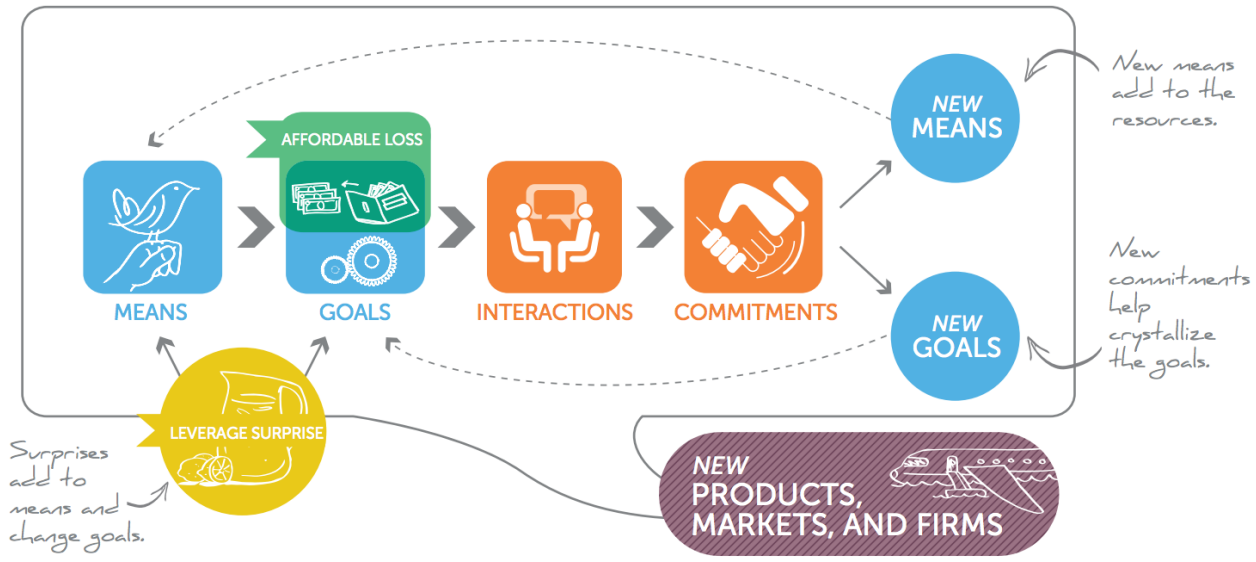
8. Appendixes

Appendix 1. Theory building from case study research process

Step	Activity	Reason
Getting Started	Definition of research question	Focuses efforts
	Possibly a priori constructs	Provides better grounding of construct measures
	Neither theory nor hypotheses	Retains theoretical flexibility
Selecting Cases	Specified population	Constrains extraneous variation and sharpens external validity
	Theoretical, not random, sampling	Focuses efforts on theoretically useful cases—i.e., those that replicate or extend theory by filling conceptual categories
Crafting Instruments and Protocols	Multiple data collection methods	Strengthens grounding of theory by triangulation of evidence
	Qualitative and quantitative data combined	Synergistic view of evidence
	Multiple investigators	Fosters divergent perspectives and strengthens grounding
Entering the Field	Overlap data collection and analysis, including field notes	Speeds analyses and reveals helpful adjustments to data collection
	Flexible and opportunistic data collection methods	Allows investigators to take advantage of emergent themes and unique case features
Analyzing Data	Within-case analysis	Gains familiarity with data and preliminary theory generation
	Cross-case pattern search using divergent techniques	Forces investigators to look beyond initial impressions and see evidence thru multiple lenses
Shaping Hypotheses	Iterative tabulation of evidence for each construct	Sharpens construct definition, validity, and measurability
	Replication, not sampling, logic across cases	Confirms, extends, and sharpens theory
	Search evidence for "why" behind relationships	Builds internal validity
Enfolding Literature	Comparison with conflicting literature	Builds internal validity, raises theoretical level, and sharpens construct definitions
	Comparison with similar literature	Sharpens generalizability, improves construct definition, and raises theoretical level
Reaching Closure	Theoretical saturation when possible	Ends process when marginal improvement becomes small

Adopted from Eisenhardt (1989, p. 533)

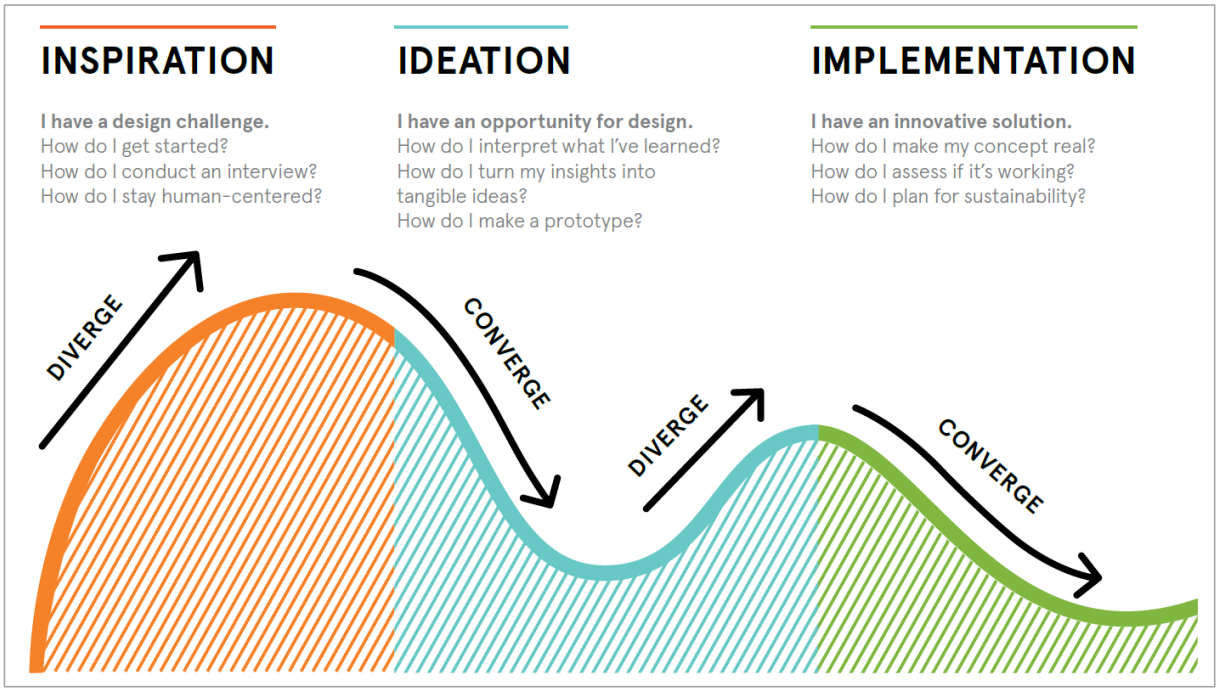
Appendix 2. The effectual cycle



Adopted from http://www.effectuation.org/sites/default/files/documents/effectuation-3-pager.pdf (accessed April 30, 2016)

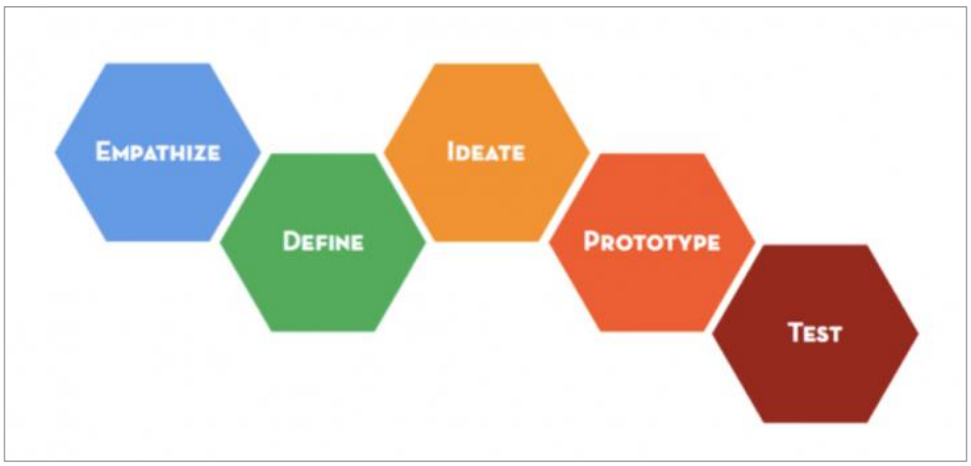
Appendix 3. Design thinking process visualized

a. Human Centered Design by IDEO.org



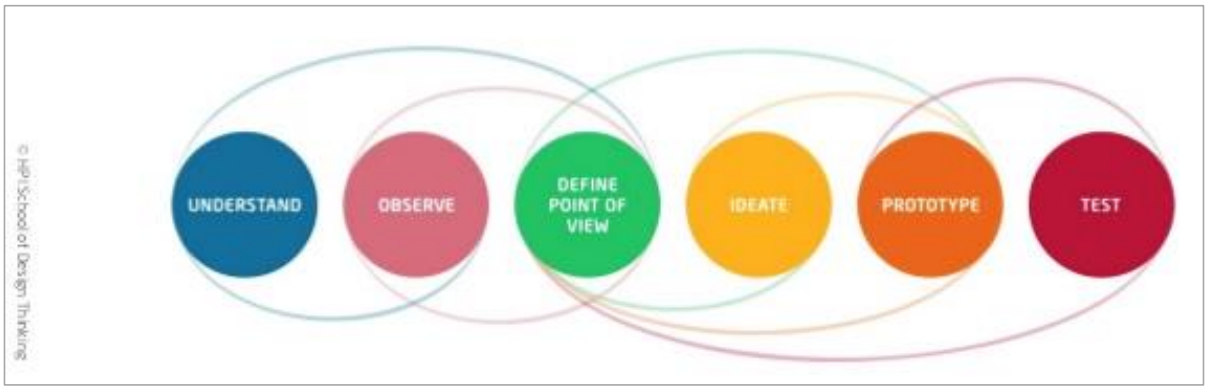
Adopted from The Field Guide to Human-Centered Design by IDEO.org, and Acumen online course *Design Kit: The Course for Human-Centered Design* Class 1 Readings; available at http://www.designkit.org/resources/1 (accessed April 30, 2016

b. Human-centered design at Stanford d.school



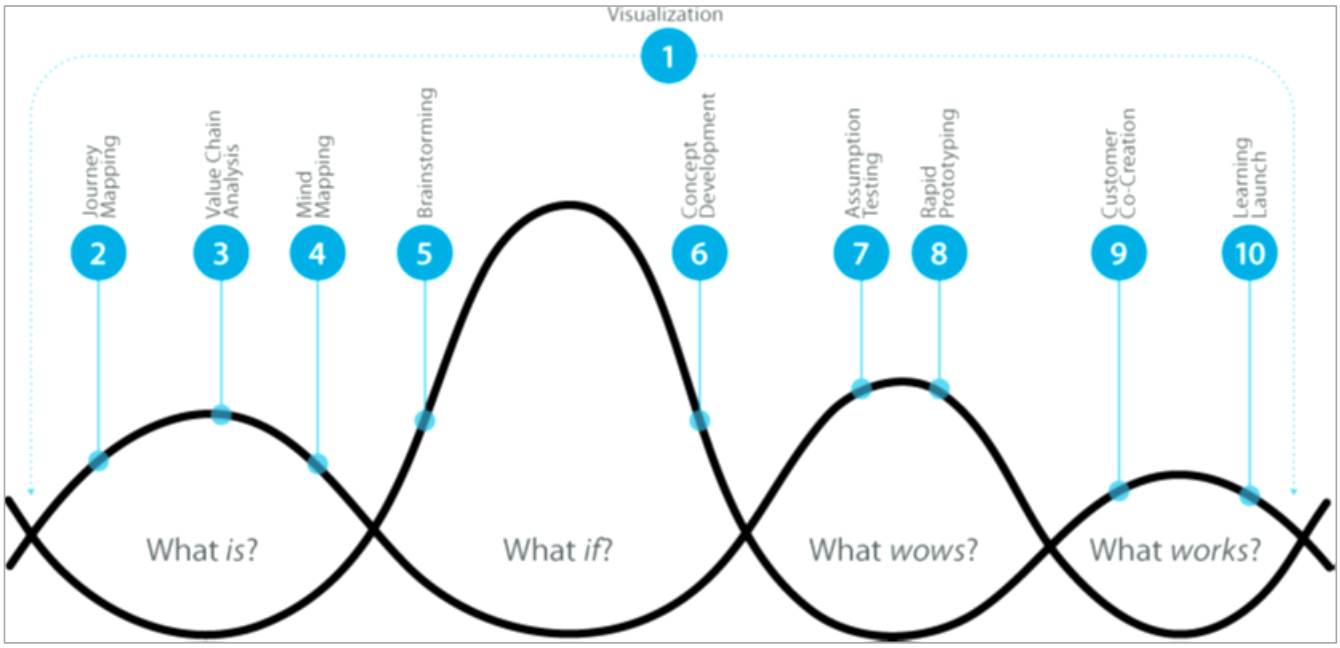
Adopted from http://dschool.stanford.edu/wp-content/uploads/2013/10/METHODCARDS-v3-slim.pdf (accessed April 30, 2016)

c. HPI School's Design Thinking mindset



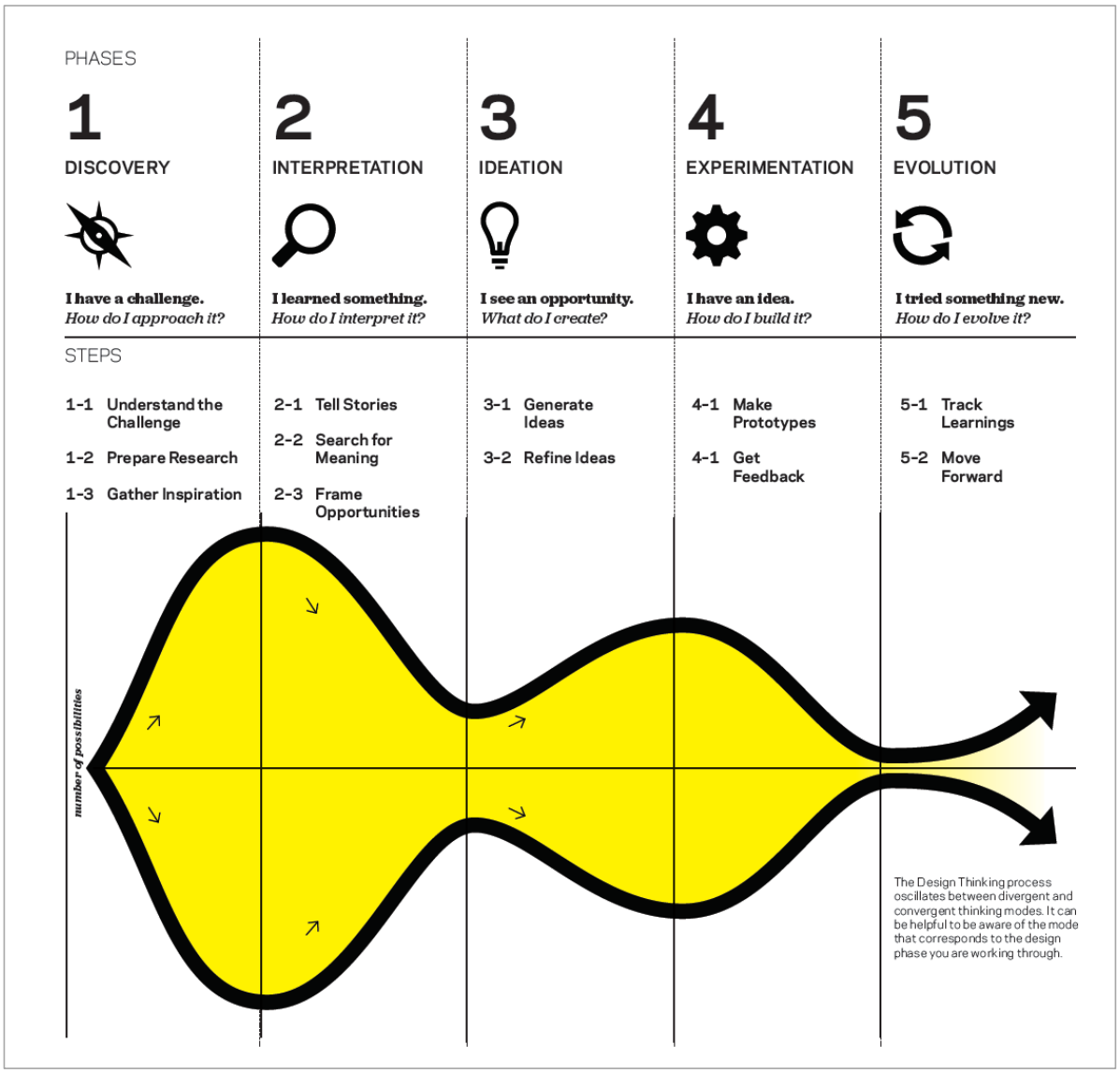
Adopted from http://www.slideshare.net/HPI_School_of_Design_Thinking/introducing-the-hpi-dschool (accessed April 30, 2016)

d. Darden Business School Design toolkit



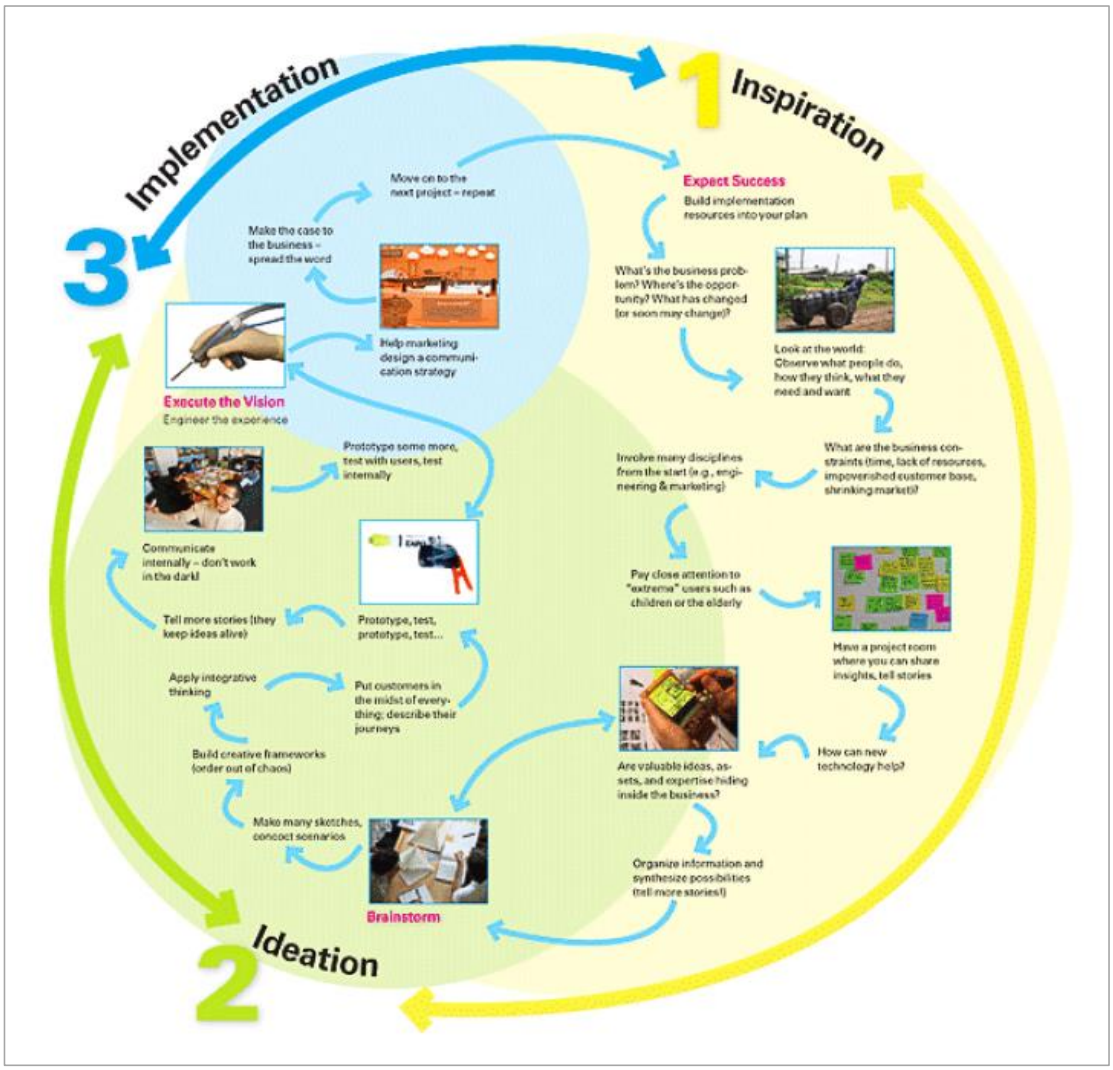
Adopted from Design@Darden http://www.designatdarden.org/presentations/ (accessed April 30, 2016)

e. Design thinking for educators toolkit



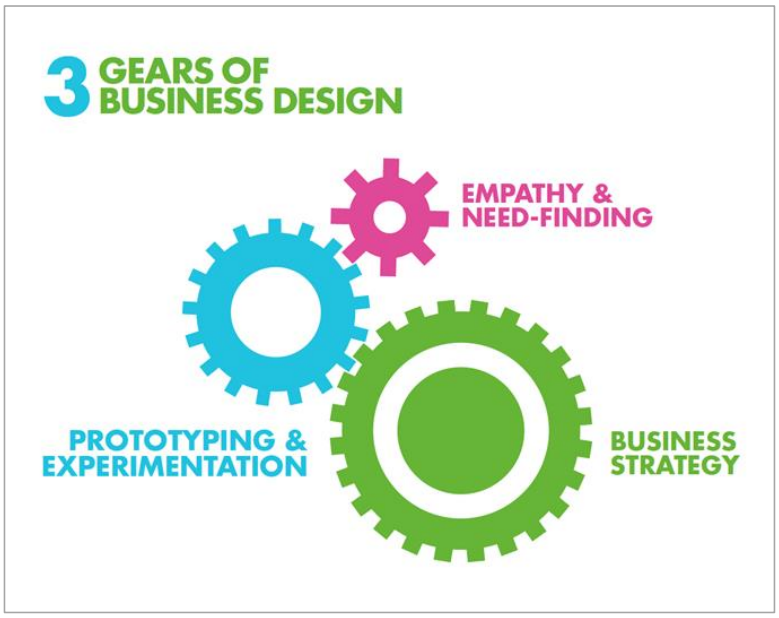
Adopted from Design Thinking for Educators toolkit, available at http://www.designthinkingforeducators.com/toolkit/ (accessed April 30, 2016)

f. Three spaces of innovation



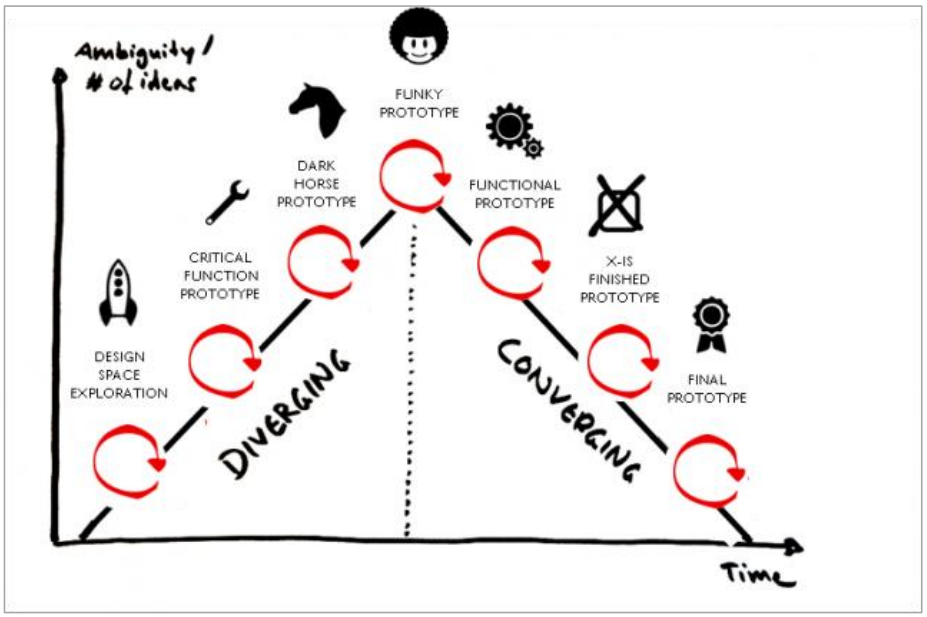
Adopted from Brown (2008, 2009)

g. Three Gears of Business Design at Rotman School of Management



Adopted from http://www.rotman.utoronto.ca/FacultyAndResearch/EducationCentres/DesignWorks/About-BD (accessed April 30, 2016)

h. Design Thinking Model of the University of St. Gallen



Adopted from http://dthsg.com/phases/ (accessed April 30, 2016)

Appendix 4. Questionnaires for the case companies.

Questionnaire for ACME Europe

1.	Please describe the creative process at ACME Europe.
2.	What kind of tools or methods are used?
3.	How did the idea for JUNGLE earphones, and other Urban Harmony products, emerge?
4.	Who is responsible for researching the market and new demand for products? Do you yourself initiate new products?
5.	Is design treated as an individual process or a teamwork?
6.	Do you see design as a finished artefact or a continuous process?
7.	Do think that design has any impact on sales?
8.	Does design have impact on anything else, besides sales?
9.	In ACME Europe, do you treat design as an iterative process or a linear one?
10.	Do you think that design can create opportunities?
11.	What, in your opinion, could business learn from design?
12.	Design is…?

Questionnaire for Absurdo Idėjos

1.	Please describe your career before trash design.
2.	Why did you start creating from trash, especially, during the financial crisis?
3.	Could you please compare your life pre- and post-trash design?
4.	What can people learn from trash design?
5.	In one interview held in 2012 you claimed that people assume your designs have to be cheap only because they are made from trash. Has this notion changed?
6.	Please compare Absurdo Idėjos to a traditional design studio.
7.	What are the advantages or unique value propositions that Absurdo Idėjos offer?
8.	What are the opportunities that trash design creates, including profit?
9.	What can business learn from design?
10.	Design is…?

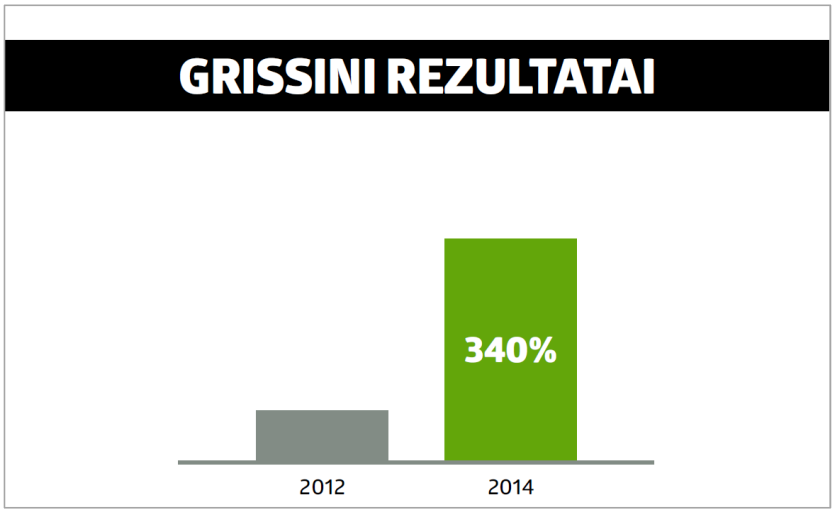
Questionnaire for Biržų Duona

1.	According to the project, was it a new product development, or an alteration of the ones already in the market?
2.	Why did you decide to change the packaging, and company's image?
3.	What was the motivation to work with a professional freelance designer?
4.	What was the packaging before and after?
5.	What was the design process? What difficulties were faced and how did you cope with them?
6.	How were the current packaging designs created?
7.	What was the change in sales and profit after the new designs?
8.	How did the attitude towards the company change?
9.	Did you include the customers into the design process (Co-creation, co-design)?

10.	Would you assume that design was the key factor leading to new markets and increase in sales?
11.	What can/did the business learn from design?
12.	Did you feel any changes in company's micro-climate and organizational culture after the new designs?
13.	How did the awards impact company's internal climate?
14.	What are the benefits of design in the company?
15.	Design is…?

Appendix 5. Focus group for Biržų Duona interview

Appendix 6. Grissini sales results



Adapted from E. Kavarskas & A. Kurganovas (2015)

Appendix 7. Sample magazine cover

Adopted from http://www.samplemagazine.com.au/issue-002/ (accessed April 30, 2016)

Appendix 8. 23 Questions for design brief (as adapted from E. Kavarskas)

QUESTIONNAIRE FOR PACKAGE CREATION	
What is the exact product name? (please identify all the capital letters, accents or other symbols) Please send a logotype (if there is one) under your chosen format (it can be: ai, eps, cdr, pdf)	
Is there a need to create a full-fledged logotype, which would be used as a trade mark? (this would influence the estimate)	
Is there a graphic style to be followed when creating the package; or would you prefer a new packaging concept?	
How many and what kind of products do you plan to release? Please indicate precise names and other characteristics (such as: extensions of the same product, different features, etc.)	
What are the target markets/countries?	
What are the ways of distribution and places of display planned?	
What position will the product take in the market: leader, follower or niche filler?	
In what ways is your product different from the competition? Please list the rivals.	
Describe the customer. Demographics: sex, age, place of residence, marital status. Social class: education, occupation, income. Psychographic type: values, personality traits. Lifestyle: hobbies, interests, likes, fears, places they visit.	

Are your customers trend setters or brand followers? Are they loyal? What are the consuming habits and purchasing behavior?	
What are the 5 keywords describing your brand?	
Do you have exclusive preferences for the package design?	
Does the package need to be produced out of ecologic materials? Is ecology's topic to be presented on the package?	
Do you plan a slogan, which shall be presented on the package?	
Have you thought of the construction of the package and the materials to be used?	
Please send the layouts of the package, if they are already created. (please use one of these formats: ai, eps, cdr, pdf)	
Have you thought of the packaging's printing method? If so, what is it?	
What are the measurements of the package?	
Does the package need to have special markings? If so, please send them using one of these formats: ai, eps, cdr, pdf.	
What languages are to be provided in the description of the product?	
Will you need a presentation of the product for the supermarkets, partners, and such? (additionally paid service, provided in pdf)	
Please send some examples of the packaging designs you like.	
Please send some examples of the packaging designs you don't like.	
What else would you like to tell that was not asked?	

Appendix 9. Interview with case company A (provided in electronic format, see USB)

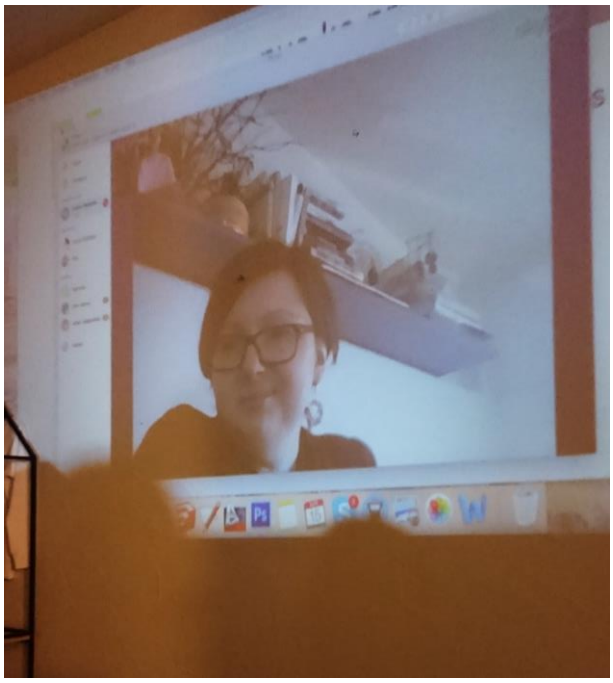
Appendix 10. Interview with case company B (provided in electronic format, see USB)

Appendix 11. Interview with case company C (provided in electronic format, see USB)

Appendix 12. Field notes and pictures

During the research I have filled in a whole notebook with my insights and ideas, as well as notes from the interviews. It was like my diary during these four and a half months. In addition, I also took pictures of whatever things I saw as relevant to my research. Thus, in this appendix I want to share the pictures taken and places visited, as a small piece of the way I was working while writing this thesis.

Notebook for field notes



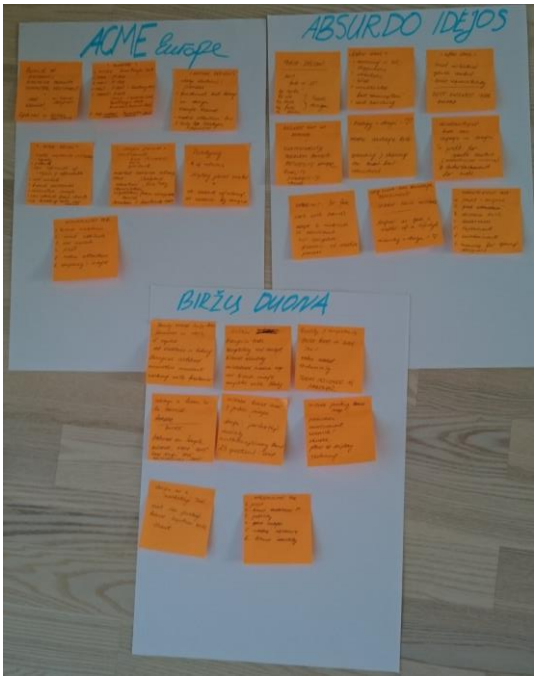
Picture from a conference I visited, where J. Jakubauskaitė from *Absurdo Idėjos* talked about trash design and its usability in the industry (took place in Šiauliai, Lithuania, April 15, 2016)

Absurdo Idėjos at Design Week Kaunas exibition. (took place in Kaunas, Lithuania, May 2-8, 2016)

E. Kavarskas at interview with Biržų Duona (April 22, 2016)

Altered package of Grissini

Grissini and is competition in the store



Notes on case findings.

Finnish trash design in Design Week Kaunas (took place in Kaunas, Lithuania, May 2-8, 2016)