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DESIGN BASED ENTREPRENEURSHIP

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ABSTRACT
Designers are often recognized as natural entrepreneurs, due to their creative skills and competences in the idea-generation and product development processes. A number of studies shows that creative professionals are more likely to become self-employed. In general though, there are not many studies on design entrepreneurs, and those who has been made, focus on design entrepreneurs' lack business competences in administration, marketing and operation, as well as their lack of skills and priority, when it comes to the development of their businesses.
This study will nuance this picture of the design entrepreneur by building upon a new direction within entrepreneurial research, which focuses on entrepreneurial expertise and logic. At a theoretical level, we will show that there are some overlap between the expert entrepreneurial logic (effectuation) and the 'designerly ways of knowing and doing'.
We review three cases with novice design entrepreneurs, where we have been able to identify examples of the novice design entrepreneurs using 'effectual logic'. The examples are described and analysed using Sarasvathys 5 principles, showing that 3 of 5 principles are found in the cases.

Keywords: design entrepreneur, effectuation, design process

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1 INTRODUCTION

The creative-skills and competences in identifying user need, idea-generation, conceptualization, and product development are often used as basis for identifying designers the natural entrepreneurs (Gunes, 2012). Especially in the area of graphic design, the notion of design entrepreneurship has been explored from a practical and case-based point of view (Vienne, 2002; Heller & Talarico, 2008), where Design entrepreneurship is about creating business and new opportunities by the help of design.
In entrepreneurial research the idea of designers as the natural entrepreneurs is supported by several studies showing that creative individuals are more likely to become self-employed (Robinson et al. 1991; Koh, 1996; Vesalainen & Pihkala, 1999).
However in the few studies made on design entrepreneurs with a background in industrial or product design, it is evident that many design entrepreneurs lack the needed business competences in relation to administration, marketing and operations (Tötterman, 2008). In a Finish study, Piira & Jävinen (2002) reports that many design entrepreneurs (in design agencies) feel the need to improve their business-related skills and process, and Tuovinen (2001) showed that design entrepreneurs in general act against business growth, because they want to remain small and flexible even if this is a central impediment for their business development.
The present research in design entrepreneurship is rather insufficient. The few studies on design entrepreneurs leaves a sketchy and to some extend stigmatized picture of the design entrepreneur: as a person with all the creative skills and potentials to become an entrepreneur, but with significant deficiencies when it comes to business skills and competences. This study is the first step in a longer and larger effort to build a more nuance the picture of the design entrepreneur. First of all by exploring some of the resent tendencies within entrepreneurial research.

1.1 Entrepreneurships research: Effectuation

Parallel with the emergence of research in design entrepreneurship, there has been introduced a new direction with in the field on entrepreneurial research called: Effectuation.
Previous research in entrepreneurship mainly focused on either: 1) The emergence and discovery of opportunities; 2) The organization of the venture, which includes the development of the system, strategies and structure that allows the opportunity to be transformed into a viable product and/or service; 3) The psychological characteristics of the entrepreneur and 4) The environmental factors such as culture, economics, markets, which enhances or inhibits the entrepreneur (Busenitz et al., 2003:297).
The effectual research direction differentiated itself from the previous directions, in that, it is not focused on the success of the entrepreneur or the success of the opportunity/venture, but rather on the expertise "expert" entrepreneurs has.
Sarasvathy is the main researchers in the field of entrepreneurial effectuation. Based on a series of think-aloud protocol studies, Sarasvathy (2008) was able to identify a "logic" or reasoning, which expert entrepreneurs uses as a basis for their decisions in the development of a venture idea. Basically, the use of the effectuation logic means that the expert entrepreneur starts his decision making with a given set of means, rather than a predetermined goal he starts from: *who he is, what he knows and who he knows*. Likewise his decisions are also guided by a principle of "affordable-loss" rather than expected return of investment. This means that his risk profile is not guided by predictions of what may come out of the investment, but on what he is willing to lose.
Effectuation can be described as the opposite of causal reasoning. Dew et al. (2005) reports that expert entrepreneurs prefer the use of the effectual reasoning to the causal reasoning, whereas novice entrepreneurs prefer the use of causal reasoning over effectual reasoning.
Sarasvathy (2008) describes effectuation by defining the effectual problem space and identifying 5 solution principles that characterizes entrepreneurial expertise.
When reviewing the description of the effectual problem space and the solution principles with a design background, it is evident that there is some overlap between effectual reasoning and the reasoning, which can found in descriptions of design expertise. As it will be reviewed, the overlap is not total. However, we find it important to identify where the similarities are and where they are not. Accordingly the aim in the next sections will be to unfold our initial understanding of this overlap.

The effectual problem space and wicked problems

According to Sarasvathy (2008) the effectual problem space is characterized by three things: 1) Knightian uncertainty 2) Goal ambiguity and 3) Isotropy.

Sarasvathy (2008) explains the Knightian uncertainty by describing the difference between, risks, uncertainty and Knightian uncertainty through the example of a game of balls: There is a certain number of red and green balls positioned in an urn, you get to draw one ball at the time from the urn, and you win a certain amount of money every time you get a red ball. In this setting risk is when you know how many red and how many green balls, there are within the urn, and you can calculate the probability if getting a red one, because you know the distribution. Uncertainty in this setting is when you do not know the distribution, and therefore have a hard time of calculating the probability of getting a red one. ”Knightian uncertainty” *consist of a future that [is] not only unknown, but unknowable in every principle* (Sarasvathy, 2008:26). In the game setting, it means that you may not know how many balls are in the urn, you do not know if there are any red balls in it at all, and you may not know whether you are allowed to draw.

The effectual way of dealing with the Knightian Uncertainty is for the entrepreneurs to *gather red balls in any way they can and put them in the urn; they also persuade people who own red balls to bring them to the urn and play the game as their partners* (Sarasvathy, 2008:29).

The second characteristic of the effectual problem space is Goal ambiguity. In the context of entrepreneurship it means that the entrepreneur may not always be certain of his own goal or his preferences in regards to the complex reality he is dealing with.

The third characteristic of the effectual problem space: Isotropy means that is it now always clear for the entrepreneur, which pieces of information from the ”surrounding environment” he needs to pay attention to and which pieces he can just ignore.

If we compare the effectual problem space with the way the problem space is seen within design, it is evident that there are some similarities. In design, the problem space is often described as wicked or ill-defined (Rittel, 1972; Cross, 2006), indicating uncertainty in relation to understanding the problem and ambiguity in respect to the goal. As Thomas & Carroll describes it: *Design is a type of problem solving in which the problem solver views the problem or acts as though there is some ill-definedness in the goals, initial conditions or allowable transformations* (1979:5)

In contrast to traditional analytical problem solving with a clear definition and one solution, the design problem space is filled with problems with no clear definition and therefore multiple possible solutions (Rittel, 1972).

Furthermore, designers have a special approach in relation to the problem framings. Rather than focusing on analyzing the problem in-depth and defining the goal precisely, they focus on creating possible solutions, which will help them clarify the problem and the goal, and help identify which insights are important and which are not (Cross, 2006). This means that the problem is continuously reframed and that the goal is continuously redefined.

If we compare this to the metaphor of the urn and the red balls, this indicates that the designer also ”disrupts” the game of Knightian uncertainty and to some extend tries to design the rules himself by focusing on the creation of a solution.

Having reviewed the correspondence between the effectual problem space and the way the problem space is viewed within design, focus will now shift to some of the effectual solution principles. Among expert entrepreneurs, Sarasvathy has identified 5 solution principles: 1) The bird in the hand principle, 2) The affordable loss principle, 3) The Crazy Quilt principle, 4) The Lemonade principle, 5) The Pilot-in-the-plane principle. At this point we have been able to identify similarities between three of the five effectual solution principles and solution principles within design. The three solution principles are the 1)”The bird in the hand”, 3) ”The Crazy Quilt” and 5)”The pilot in the plane” principle. The remaining solution principles (2 and 4) mainly focused the entrepreneurs’ interaction with stakeholders and management of investments. Thereby not said that these solution principles cannot be connected to design, just that this will need further research.

Solution principle 1: ”The bird in the hand” and designing

The first solution principle which Sarasvathy (2008) identified among expert entrepreneurs is the *bird in the hand principle*”, which means that the entrepreneur often will start with his present means and creates new ends. He will start building his venture from *who he is, what he knows and who he knows.*

To illustrate this Sarasvathy compares the way expert entrepreneurs identify their customers with the way the identification of the costumer is prescribed in a typically marketing textbooks.

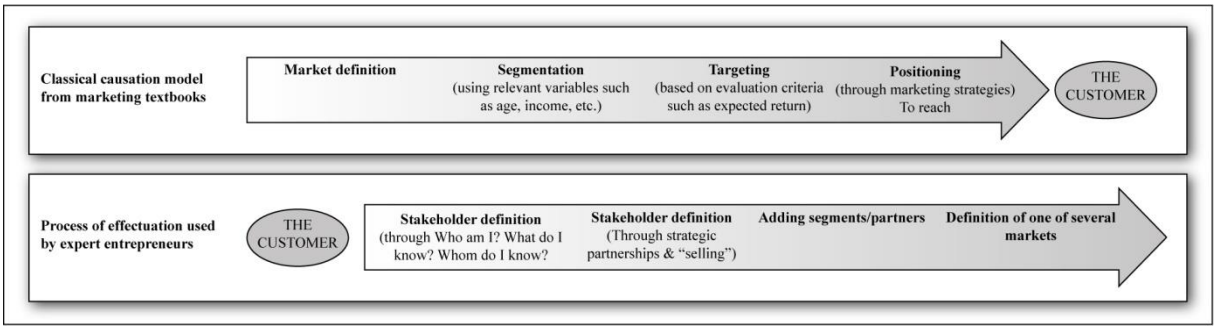

Figure 1. Contrasting the textbook (causal) model of marketing with effectuation (modified from Sarasvathy, 2008:39)

As the figure shows, the marketing textbook example prescribes one to start with a market definition, which leads to a segmentation, targeting and positioning. The expert entrepreneur on the other hand starts by identifying a first costumer through the means of *who he is, what he knows and who he knows*. Perhaps he even invites this first costumer into the venture as a stakeholder. Based on the identification of the first costumer, he creates a costumer definition, add segments/strategic partners and in the end defines/creates the market himself.

If we compare the ”bird in the hand principle” to solution principles in design, it is evident that designers also often start with the given means and create new ends in the process of conceptualization. Especially in the in the tradition of ”artistic design” we can find examples of how the designers use their own understandings, experiences and preferences directly in the conceptualization process (Heskett, 2003). Furthermore, studies of design agencies shows that designers often use knowledge and solution principles from previous projects as a starting-point for creating innovative solutions in a totally different industry (Hargadon & Sutton, 1997). In other words the designers also start with: *who they are and what they know*.

Solution principle 3: ”The crazy quilt” principle and users/stakeholders

The third solution principle, which Sarasvathy (2008) identified among expert design entrepreneurs, is *”The Crazy quilt principle”.* She found that the expert entrepreneurs use alliances and pre-commitment from stakeholders as a way of dealing with uncertainty and reducing i.e. entrance barriers. Instead of selecting stakeholders on the basis of predetermined goals, the expert entrepreneurs allow the stakeholders to take active part in the shaping and development of the venture.

Most designers are also quite experienced when it comes to interacting with both users and stakeholders and allowing the insights from these interactions to influence the design (Krippendorff, 2006). Especially in the tradition of participatory design the understanding of the user as a partner or active co-creator is explicit (Sanders, 2006).

Solution principle 5: ”The pilot in the plane” and design as brokering of language

The fifth solution principle, which Sarasvathy identified among expert design entrepreneurs is *”The pilot in the plane principle”*. It refers to the way entrepreneurs maintain control in relation to a non-predictive future. Whereas causation focuses on the predictable part of the future and the parole: *To the extend we can predict the future, we can control it* (Sarasvathy, 2008:91) Effectuation focuses the aspects in the future, which can be controlled by actively shaping it.

Expert entrepreneurs deal with Knightian uncertainty by refusing to trust predictions. Instead they work to ”confirm by experience” what seems reasonable – that is doable and to them worth doing. In other words they first devise actionable hypothesis and then actually reify or falsify them through action upon the world and through interactions with others (Sarasvathy, 2008:92)

The 5th solution principles also refers to the fabrication of the market in the 1st solution principle and can also be seen as underlying the other effectual solution principles.

In the review of the *Pilot in the plane principle,* Sarasvathy (2008) defines the effectual reasoning as *a science of the* artificial (Simon, 1969, 1996), and argue for a correspondence between effectuation and design, because designers like expert entrepreneurs does not start from the prediction of the future.

If we further unfold designs way of dealing with none-predictive futures, especially Verganti"s description of "design as brokering of *language" (Verganti, 2003)* seems to comply with the 5th solution principle. He describes how the designer through the use of language and meaning pushes and modifies the future scenario. *Not only do they [the designers] observe the socio-cultural models, but they also make proposals to affect the emerging dynamics in the socio-cultural models* (Verganti, 2003: 39).

Effectuation, abduction and designing

Looking deeper into the process the expert entrepreneur goes through, when he uses*" the bird in the hand" and the "pilot in the plane"* principles, it is clear, that he goes through the process of suggesting a solution and testing it out in practice and through interaction with other stakeholders. Sarasvathy et al. (2005) have identified this as an abductive process. Abduction was initially described by Pierce (1934, 1960:106) as *the process of forming an explanatory hypothesis* and *as the only logic operation which introduces any new ideas.* Abduction is primarily used when information is limited and uncertain (Mounarath *et al.,* 2011) as it is in the effectual problem space. It allows the entrepreneur to make a hypothesis and test this hypothesis through interaction and further development.

In design the approach to limited and uncertain information is also to create a possible solutions. As expert entrepreneurs, designers also rely heavily on the abductive process (Rozenberg & Eekels, 1995) both when it comes to problem framing and problem solving (Dorst, 2011). In fact, abduction is an intrinsic part of the designer"s reflective practice (Schön, 1983) and use of prototypes (Schrage, 2000).

2 METHOD

The research setup of this study was targeting novice entrepreneurs with a design background in order to investigate whether the theoretical overlap between the effectual reasoning and the "designerly ways of knowing and doing" as presented in the previous chapter could be found in practice. The reason for looking at novice design entrepreneurs is that novice entrepreneurs (in general) mainly rely on causal reasoning and not effectual reasoning (Dew et. al., 2005). The objective is to find out if, how and in which situations "novice design entrepreneurs" use effectual reasoning and thus deviate from the general picture of novice entrepreneurs. Accordingly we set up a number of interviews with "novice design entrepreneurs" to investigate whether they used effectual reasoning or not.

2.1 Interview

The empirical data was produced on the basis of taped interview with three different design entrepreneurs. The design entrepreneurs had all been part of the founding team behind the companies they represented and could all be characterized as "novice design entrepreneurs" in that it was their first venture experience. The companies the design entrepreneurs represented was: Libratone, Runius Design and Coco-form.

The three interviews with the designers are similar in length and partly similar in the interview guide, but differ on context. The Libratone interview was situated at the company, with the actual product and some of the development material on the table. The Runius Design interview was situated at Mälardalen University outside the company setting, but with the key initiating product present. The Cocoform interview was conducted at Cocoform allowing the interviewee to refer to the company setup and contextual setting during the interview.

2.2 Case 1: Libratone

Libratone is a high-end airplay sound systems company. Libratone was the response to the situation, where the market for docking station was rising. However, the sound quality and performance of these docking stations was in general poor. Accordingly, the idea was to create a wireless docking-station for iPads or iPhones, but with hi-fi sound quality. Not surprisingly, the idea came from two sound-technicians. The idea was technology driven and focused on creating one speaker-unit, which would send sound in all directions of the room and use the room"s reflection to create the 360 degree stereo sound experience (later patented: FullRoom® technology). After the first number of iterations on the technological development an investor accompanied the two sound technicians. Their shared aim became to develop a technological platform, which could be sold to different existing hi-fi brands.

Prototyping the technology to prove the concept

To exemplify the idea and business potential, the entrepreneurial team created a full-functioning prototype and asked a design consultancy to create an exemplary design. However since the idea was to sell the technological platform to all-ready excising brands, the user understanding and positioning in the market was limited. The team had had some initial ideas about focusing the design on females and iPhone users. Further, it was agreed that the design consultancy would make only one concept, due to time and financial limits. At the design-consultancy, the design brief was given to two experienced hi-fi designers with extensive insight into the consumer electronics market. Since both time and resources was limited, the design approach turned out to a combination of the designers" intuition, and capitalization of earlier experiences.

Positioning Libratone to compete on new parameters

In the concept development, the design briefs focus on design for females and pleasing the iPhone users, was reframed and new perspectives were added to it. First of all, the designers focused on developing a design that would differentiate from the majority of the market. The intention was to *"get away from piano black"* or out of the *"electronic/PC"* reference and into a *"home"* reference. Accordingly the sound system was designed as a piece of furniture with visual reference to some of the contemporary Scandinavian interior and furniture designs. Secondly, the initial idea about designing for females was reframed into designing a unisex sound system, which would balance between being discreet and at the same time being bold. This was based on one of the designers' personal experience of seeing his own expensive hi-fi system ending up in the basement, because it was not "allowed" into the living room by his girlfriend. And finally, the designers saw that they and people around them used music as a soundtrack to other activities i.e. cooking, working or relaxing, rather than using music as the main focus of attention. This pointed to a portable design including a handle that would make it easy to bring the speaker unit with you anywhere in the house and to be controlled by a phone or mobile device.

Market entering through Apple Universe

In the meantime, the Libratone team discovered that the potential in the FullRoom® technology was higher than first expected, and therefore they decided not only to develop a technological platform for existing brands, but to build and develop their own brand. Part of this strategic shift included an invitation to one of the designers from the consultancy to join the team at Libratone.

In the new constellation, the further development of the sound system and personal insight into the Apple community soon became directly influential on the company strategy. Based on his years as an "Apple-fan-boy" (as he described himself) he had gained extensive insight into how "Apple-support-products" easily entered the market through the Apple community, and he came up with the idea of making Libratone enter the market through the Apple community. The designer explains the reasoning behind this as follows: *"The Apple Universe it really smart. It is one sale. It is worldwide. (…) It is building your brand. And it is easy to reach with something new, because it as a global community with very few entrances."*

In practice this meant exchanging the existing wireless technology with airplay technology in the Libratone products and, as well as convincing Apple to select Libratone as one of the products/brands to use airplay. After numerous struggles and product delays Libratone"s quest succeeded, and as a result they were able to market their products through Apple Store and the Apple community resulting in a lot of free publicity.

2.3 Case 2: Runius Design

Runius Design is a design agency with several in-house products. The first product was developed in response to a problem that the owner of the company had, a cardholder that made it easy to "browse" through several cards without taking them out of the card holder.

Since it was his first product where he had to manage the production, he decided to have it produced "locally" in Sweden, in order to be able to visit the production site and limit any potential communication problems. Since the product was to be produce in Sweden funding was needed in order to create plactic molds. This funding acted also as a part of the design process.

Iterating the prototype and building network

One specific meeting with the bank turned out to be an important iteration of the prototype. One of the bank advisors pointed out some security aspects in relation to the cardholder, which came to be an important characteristic of the final product. In the meeting with the bank the owner of Runius Design engaged the bank advisor in the idea, allowing him to adopt the idea and thus be part of the development work. Parallel with the typical design process from idea to several iterations between prototype and verification further to communication and last selling, a lot of people were actively involved in the development work and influenced the final plastic cardholder.

With the ability to engage people to adopt the idea the owner actually use relations to learn more about his own ideas and develop them further with this knowledge. Based on his explanations it was clear that the owner was approaching the potential stakeholders with an emphatic mindset and a big interest in how a potential relationship could support both of them.

Market entering through promotional merchandise resellers

The product was introduced in the market through promotional merchandise resellers and became "promotion product of the year" in Sweden 2011. For a small design agency it can be hard to find the right channels to reach out with a new product on the market, however, using already existing networks and resellers proved to be a winning concept for the cardholder. The award has been used in marketing the product and the design agency, looking for new customers and opportunities to explore.

Harvesting the new knowledge received

The second in-house product (a butter knife) came out as a spin-off from new knowledge received from this development work. Here the owner of Runius Design actively scouted for products where his new achieved knowledge on plastic molds could be used effectively. During the time of this study Runius Design got a new award for "plastic innovation of the year" at a big fair in Sweden. That product has also been developed with knowledge and competence achieved from the cardholder project. This shows the importance of using newly found knowledge and focusing the development of products to areas where you can implement this knowledge.

2.4 Case 3: CoCoform

CoCoform is a set design agency that creates spatial design for showcase, events and scenes. The initial idea was to create props for these areas, however, they soon realized that this business model meant that they were dependent on the success of set manager, and therefore they quickly moved up the ladder to become a provider for the whole set. The company was not developed in response to a market demand but the personal passion and willingness to work with these things. The two founders of the company was both studying spatial design at Mälardalen University and found a mutual interest in developing and creating high quality crafted environments that tells a story, makes people think and creates an experience in spatial environments.

Prototyping the business model

When developing the company the owners designed everything connected to the company as an experience, from invoices to business cards. The idea was that even an invoice should provide an experience and show the attention to detail and quality which CoCoform strive for in all their work. In a way their communication became their showcase. They did all of this material by themselves following what they refer to as intuition and listening to their inner voice. As mentioned above they started out with the focus on manufacturing props for different applications and quickly moved up the ladder and became a provider of the whole set. This climb was a respond to a few of their first projects and an iterative building of the business model, when learning from the respond from the customers.

Building network and the CoCoform mindset

Early on the owners also started to develop a network of colleagues with the specification: "how can we help each other". Setting up large events demands a lot of hands at certain points in time, and since it is one-of productions, things might not always work out as planned. In these situations the network is vital. Their colleagues show up immediately and do their very best to help out – and CoCoform pay back the favor by helping out whenever they can, this has taken their network to a level where trust is central and empathy is their approach.

The "three wise men" supporting and challenging the owners

CoCoform also have three mentors. The "*three wise men*" (CoCoform own term), came to CoCoform during their first year and were three senior entrepreneurs connected to a mentor program at the business incubator "idélab" at Mälardalen University to help new companies in their start-up phase during six months. However, the "*three wise men*" are still mentors for the company and have played an important role for the business strategies and growth. These mentors have meant a great deal for the development of the company and pushed the borders for the two founders, the idea has always been to go beyond the borders of what the owners could think challenge them and supporting them with their wisdom.

3 ANALYSIS

If we look across the three cases presented above it is evident that the "novice design entrepreneurs" in different ways and to different extend uses the effectual solution principles and deals with the effectual solution space of knighterian uncertainty, goal ambiguity and isotropy.

In the Libratone case, the design entrepreneurs' starting point is *who he is, what he knows and who he knows* (Solution principle 1). This is both true, when creating the physical design of the speaker and when he created the marketing strategy. In the physical design he uses his personal experience of having his hi-fi stereo banished to the basement, his own observations on how people uses music and his professional experiences from the consumer electronics market to guide his decisions. In relation to the marketing strategy he uses his insights to the Apple Universe as a basis for creating a high value strategy based on very few resources. He does not try to predict, how many units Libratone can sell based on the budget they have. He takes action and creates another future (Solution principle 5). In fact the idea of having airplay integrated into the Libratone speaker is metaphorically speaking to convince Apple to bring one of their red balls into Libratone"s urn of knighterian uncertainty.

Likewise in the Runius Design case, the first in-house product (the cardholder) is developed on the basis of *who the design entrepreneur is, what he knows and who he knows* (Solution principle 1). His starting point is his personal wish to have a cardholder, where you can browse through several cards. During the development he engages both the bank advisor and some of the manufactures from the Swedish production company to influence, further develop and even change the product (Solution principle 3). When the cardholder was adopted by promotional merchandise re*sellers the control of the marketing and sales of the product was released from Runius Design. But, when the award became a reality they used this as a marketing opportunity and developing new strategies for the product (Solution principle 5).*

In the second in-house product (the butter knife) the design entrepreneur actively search for a product category, where he can use the production knowledge he used while developing the cardholder.

In the CoCoform case, it is also possible to find examples of how the design entrepreneurs used the effectual solution principles. The company was primarily created on the basis of *who the design entrepreneurs are and what they know* (solution principle 1) in terms of their personal aspirations and professional background in spatial design. This is also true for their focus on detail and high quality, which is not based on a market analysis, but on how they want to do their work.

During the initiation of the company, they redesigned their market by taking CoCoform one step up the ladder from doing props to doing the whole set. This can be seen as an active fabrication of the market and it relates to the effectual solution principle 5.

Finally, it is evident that CoCoform continually involve different collaborators and allowed them to influence and change the company.

4 CONCLUSION AND DISCUSSION

In overall conclusion this paper is the first step of a larger effort to nuance the picture of the design entrepreneur through three small cases that we believe supports the assumption that there is a theoretical and methodological overlap between effectual reasoning and design reasoning, exemplified by "designerly ways of knowing and doing" (Cross, 2007). However at the same time this study has shown the methodological deficiency of interview to elicit precise data about the methods and processes used by design entrepreneurs, and let us to contemplate alternative and supplementary approaches.

4.1 Theoretical and methodological overlap

The study has reviewed some on the theoretical overlap between the effectual reasoning which is used by expert entrepreneurs and the reasoning which is used in design; here described as ”designerly ways of knowing and doing”. We have been able to show examples of how novice design-entrepreneurs use elements of effectual reasoning in terms of the effectual solution principles. This might indicate that design entrepreneurs to some extend and in some ways rely on parts of the effectual reasoning, because it is so close to design reasoning, and that this is why designers often are described the natural entrepreneurs.

However we cannot say whether the use of effectual reasoning is more distinct among novice design entrepreneurs that among other novice entrepreneurs. We do not know whether the effectual reasoning can be identified among designers in general or if it is only identifiable among design entrepreneurs – because it is linked to their entrepreneurial expertise. Furthermore, we need to make a full theoretical comparison between effectual reasoning and designer reasoning in order to identify both similarities and differences. The aim here would be to identify: what ”entrepreneurial expertise” designers have when they enter the world of entrepreneurship, and what ”entrepreneurial expertise” they lack.

4.2 Constraints in research setup

Methodologically, this study has confirmed that we have to create a research design that goes beyond interview. Interviewing a designer about methods and processes in a meeting-like setup creates some difficulties in electing precise material, partly due to ambiguity in language and concepts. In the first case of Libratone, the designer had previous experience as part-time teacher in an Industrial Design program at the University. Thus he was more familiar with the focus and concepts of methods and processes in a more detailed form and understood the curiosity from the researchers. Even with this insight, it proved difficult to elicit very precise information about the actual steps, methods and tools used in the development process of both company and product. The interviews with Runius Design and Cocoform underpinned this experience of not being able to open up the development process to a level detailed enough to understand exactly how the designers utilized their expertise. The empirical data therefore mostly show an overall process and relatively generic descriptions of actions and methods related to design.

4.3 Possibilities in future research

Future research into this area therefore needs to include additional approaches to address the questions of exclusivity (designers versus non-designers), depth (demonstrating expertise versus verbalizing it) and going beyond the design paradigm (seeking more versions and perspective on the same story).

Hence future research could include control groups of non-design entrepreneurs into the following setups;

1. Facilitated storytelling of the entrepreneur and unfold the ”story” of forming the company combined with different viewpoints, such as interviewing different stakeholders and collaborators mentioned. This would provide the opportunity to go beyond the designers own wording, perception and experience and put it into perspective.
2. A protocol study as Sarasvathy did (2008) to go deeper than just descriptions and use small tasks to demonstrate the expertise and use thereof in more details. This would provide in-depth data of actions and thoughts of the entrepreneur to be compared with design methodology and thinking.
3. A long-term study of brand new design entrepreneurs, who have just started or are thinking about starting a venture. This would provide the opportunity to observe and collect data over time that can demonstrate the actions and expertise of the design entrepreneur and effects thereof in the real context.

Regardless the setup or setups chosen, the objective will be to gain more in-depth data on the expertise, methods and approach used by design entrepreneurs compared to non-design entrepreneurs.

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