Sustainability as a Driver for Innovation

Master's Thesis

by

Jesper Anker Christensen

Simon Kjær Jørgensen

MSc of Social Sciences
in Organizational Innovation and Entrepreneurship

May 15th 2017

Supervisor: Valeria Giacomin

Number of characters / pages: 262,692 / 111

(…) a commitment to sustainability
will only reap maximum benefit
when it is fully incorporated
in a company's core business models, strategies and processes.
And, even today, the number of companies
that have got this far remains precariously small.

– *John Elkington*

Table of Contents

Abstract

Growing attention is given to sustainability in the context of business and in academia. It is becoming increasingly apparent that firms that invest resources in transitioning into sustainable practices reap benefits and enhance their competitive advantage in comparison to firms persisting with the business as usual approach. Taking these considerations into account, this thesis will investigate innovation labs geographically located in Copenhagen, Denmark, and ask *how the labs perceive sustainability and how they embed sustainability into their innovation processes*. Theoretically founded in literature that advance the benefits for firms to consider a holistic sustainability perspective, the purpose of the thesis is also to discuss how innovation labs can move towards more sustainable practices, as well as discussing how they might embed sustainability into their innovation processes.

The empirical data of the thesis is qualitative, collected from 15 semi-structured interviews distributed among the 14 different innovation labs of our research sample. Based on these interviews, this thesis will provide an analysis of how the labs perceive sustainability and how they embed sustainability into their innovation processes. The theoretical framework employed includes theory of the *triple bottom line*, *the sustainability sweet spot*, *sustainability-oriented innovation* and a *five stages of change model* firms arguably go through when becoming sustainable.

The overall findings of this thesis are that there exists no shared language or perception of sustainability among the labs. Though, some labs have established a shared language of sustainability internally. Some labs have embedded sustainability into their processes, though, it appears either narrowly focused on parts of the sustainability agenda or it appears to be practiced rather implicitly. Furthermore, this thesis discusses that having established a shared language of sustainability might advance the move toward sustainable practices. Consequently, a matrix is created to visualize the positioning of the labs in relation to the theories employed, which also serves as a means for the discussion on how innovation labs might embed sustainability into the predominant approach of design thinking employed by the innovation labs.

List of Figures

List of Abbreviations

3Ps – People, Planet, Profit

AI – Appreciative Inquiry

BOS – Blue Ocean Strategy

B-Corp – B-Corporation

CHI – Copenhagen Health Innovation

Climate Unit - Climate Unit under the City Development and Strategy Department

CS – Corporate Sustainability

CSR - Corporate Social Responsibility

IIAB – Is It a Bird

PB – Planetary Boundaries

SDG's – Sustainable Development Goals

SOI – Sustainability-Oriented Innovation

TBL – Triple Bottom Line

1. Introduction

Given the growing attention paid to sustainability in relation to business and society (UN, 2016a; Whelan & Fink, 2016; Whitfield & McNett, 2014), this thesis will investigate how innovation labs in Copenhagen, Denmark, perceive sustainability, and how sustainability is embedded into their innovation processes.

By creating an overview of how sustainability is perceived in innovation labs in Copenhagen, we set out to establish whether there exist similar perceptions, discourses and practices of sustainability among and within the labs. In other words, we wish to explore whether there exists a shared language in relation to sustainability within and among the innovation labs. The analytical part of the thesis takes its outset in the theories and concepts of Nidumolu et al. (2009), Adams et al. (2012), Elkington (1999) and Savitz (2007) on sustainability. We want to apply the mentioned theories and concepts, in order to provide an understanding of where the labs might be positioned in relation to their practices in relevance to sustainability. Following the analysis, we will provide a discussion of the analyzed findings and how innovation labs might move towards more sustainable practices, and how they might embed sustainability into their innovation processes.

There is no clear, agreed upon definition of sustainability in academia that is readily available. However, for the purpose of this thesis, we define sustainability in accordance with Savitz' notion of the sustainability sweet spot: "the place where the pursuit of profit blends seamlessly with the pursuit of the common good." (Savitz cited in Whitfield & McNett, 2014, p. 133). More explicitly, Savitz (2007) explains that: "The sweet spot embodies the literal meaning of "sustainability," making your company *viable for the long term* by managing according to principles that will strengthen rather than undermine the company's roots in the environment, the social fabric, and the economy" (Savitz, 2007, p. 20). In other words, sustainability is the pursuit of doing good (environmentally and socially) as well as economically.

Innovation is defined by Schumpeter (1947) as: "(…) the doing of new things or the doing of things that are already being done in a new way" (Schumpeter, 1947, p. 151). For the purpose of this thesis, we are interested in the processes of innovation. Referring to Schumpeter's (1947) definition of innovation, it is *'the doing'* which will be the focus of this thesis. In order to investigate how sustainability is embedded into the *'the doings'* of Copenhagen-based innovation

labs, we found that *design thinking*[1] – or some variety thereof – similar to the approach of international design and consultancy firm IDEO (IDEO, 2015) is the most prevalent method for addressing, guiding and developing innovation processes (see appendix 1 for overview). Consequently, we will investigate how sustainability is embedded into the approach of design thinking when applied to the challenges and tasks given by clients to the innovation labs.

The qualitative research method of semi-structured interviews is employed in the thesis, as we wish to obtain practitioners' perceptions of what sustainability is and how they operate, which requires lengthy answers.

1.1 Sustainability as a Driver

The attention paid to sustainability can be exemplified by the establishment of the Network for Sustainable Business established in 2005[2] and the World Business Council for Sustainable Development (hereafter WBCSD) in 1995[3]. WBCSD is concerned with how businesses impact the societies they are a part of, and the environmental impact businesses impose (WBCSD, 2017). The concern of WBCSD is very much aligned with some of the more recent UN Sustainable Development Goals (hereafter SDGs) (UN, 2016a), which are agreed upon by the global community (UN, 2016b). Additionally, several scholars have proposed sustainability as a driver for economic growth (Clark, Feiner, & Viehs, 2015; Porter & Kramer, 2011; Porter & Van der Linde, 1995; Savitz, 2007; Whelan & Fink, 2016), though, it is still apparent that many companies have not embraced the concept of embedding sustainability into the core of their business practices (Adams et al., 2012). Reasons as to why companies might be reluctant to move towards or incorporate sustainability, have commonly been the belief that investment in sustainability creates a unfavourable 'trade-off' with economic growth (Porter & Kramer, 2011; Porter & Van der Linde, 1995). Because of numerous businesses still not having turned towards more sustainable practices it is imperative to investigate how businesses can transition their practices into sustainable practices. As proposed by several scholars, sustainability can be the driving force behind innovation – especially when firms embed sustainability measures at the core of their business (Adams et al.,

[1] "Design thinking incorporates constituent or consumer insights in depth and rapid prototyping, all aimed at getting beyond the assumptions that block effective solutions. Design thinking – inherently optimistic, constructive and experiential-addresses the needs of people who will consume a product or service and the infrastructure that enables it" (Brown & Wyatt, 2010, p. 2).
[2] Network for Sustainable Business is a network of academics and business leaders (NBS, 2016).
[3] WBCSD is an organization composed by 200+ leading companies around the world (WBCSD, 2017).

2012; Hansen & Grosse-Dunker, 2013; Jay & Gerard, 2015; Nidumolu, Prahalad, & Rangaswami, 2009). In other words, sustainability embedded innovation can be seen as a means or necessary steps towards transitioning a firm's practices into sustainable practices.

Igniting our interest in the subject matter of sustainability as an integral part at the core of any businesses' effort to improve performance on other parameters than merely economic ones, we considered who might be able to initiate or advance the concern of sustainability for businesses. While some businesses still seem reluctant to act by themselves or simply do not possess the adequate knowledge on how to become sustainable and that innovation appears to play a pivotal role in improving the sustainability of firms (Bonini & Görner, 2011), our interest in *innovation labs* arose. Innovation labs are interesting in this regard, as many firms turn to these labs with tasks related to product, services and processes, which place the labs in a rather unique position to influence the practices of their clients.

Innovation labs – as we will define in more detail later in the thesis – can in the City of Copenhagen, according to our segmentation (appendix 1), be seen in the form as (1)[4] privately owned external consultancy companies, (2) publicly owned consultancies or (3) innovation hubs existing independently of, but because of a parent company.

1.2 Focus on Innovation Labs

At the foundation of this thesis is the characterisation of what innovation labs *do*, as we will conduct research into their innovation practices. Through their consultancy role, these innovation labs might have some degree of influence over their clients. May these clients be the parent companies of the innovation lab; customers of innovation labs, which resembles the clients of other consultancy agencies; or may the clients be the public in general – e.g. various administrations, institutions and citizens. As a result of this underlying assumption of innovation labs' influence over clients, it becomes interesting for our research whether these labs work with and embed sustainability into their innovation processes. This is interesting because of innovation labs, which embed sustainability into their innovation process, quite possibly are able to produce more sustainable outcomes, which arguably results in the labs playing a role in making their clients more sustainable. At the very least, we assume that the innovation labs can positively influence the tasks

[4] Numerating the three characterisations of innovation labs is only for making the distinction between them clearer.

they are to perform for clients by incorporating sustainability parameters into the processes of innovation.

By examining 14 innovation labs identified in Copenhagen (see appendix 1), it becomes apparent from researching the companies' websites that, for instance, Innovationlab, Hatch & Bloom and Spark CPH, host public events, presentations and workshops on topics often directly or indirectly related to sustainability (Hatch & Bloom, 2017; Innovationlab, 2017; Spark CPH, 2017). Bespoke CPH, another innovation lab, takes on the role as an academy besides their consultancy role (Bespoke CPH, 2017). Besides providing non-clients with these initiatives, the innovation labs also impact the societies they are part of, and arguably to an even higher degree in an indirect fashion. Researching the innovation labs' websites, we found that all of the (1) privately owned innovation labs have worked with major corporations, which in some way or another impact citizens of Copenhagen on a daily basis. Examples of such clients are the largest energy provider in Copenhagen, DONG Energy, or DSB (the Danish State Railway Company) who owns and operates all S-trains in Greater Copenhagen area. Furthermore, it appears that most of the same labs and the public innovation labs have undertaken projects either for or in collaboration with various municipalities or even ministries. These projects will, it is assumed, impact citizens and employees of public institutions in direct manners (see appendix 1 for examples of cases and projects).

Besides the societal role of innovation labs mentioned above, their role is also fundamentally noteworthy and impactful, because the labs engage in tasks that potentially could change clients' outlook or way of thinking in relation to sustainability. That is, if the labs themselves embed sustainability into the core of their business and into their innovation practices. If they do not, it will certainly come across as challenging to influence others into thinking in terms of environmental and social sustainability as well as economic sustainability.

1.3 Copenhagen as Geographical Focus

According to Forbes Magazine, Denmark was in 2014 and in 2015 announced as *the World's best country for business*, due to the country being #10 in relation to innovation; #1 in terms of monetary freedom; and #12 on the tax burden rank (Forbes, 2015). The ranking is also considering that Denmark's business environment is very transparent, and the labour market is categorized as flexible in comparison to many other labour markets in Europe, which is partly attributed to the 'flexicurity' model offering flexibility in hiring and firing practices (Evensen, 2015; Schultz, 2016).

Specifically, Copenhagen is of interest for our research, as it appears that several foreign companies are investing in the city. For instance, IBM has at the time of writing announced that it will establish an innovation centre in Copenhagen, which is scheduled to open on January 1st 2017 (Wenande, 2016). Henrik Bodskov, CEO of IBM Denmark, states that: "Denmark is the ideal innovation lab for this, offering access to IT talent with business acumen (…)" (Copenhagen Capacity, 2016). The Danish Ministry of Foreign Affairs promotes the country via a department called *Invest in Denmark*, which promotes Copenhagen and Denmark as the perfect place to innovate and test new ideas, as Danes are described as early adopters, and keen on new technologies. Design methods such as *user-centred design* is even highlighted by Invest in Denmark, as one of the key competencies in Danish design as a method to innovate (Pedersen, 2016). Furthermore, choosing to focus on a city in Scandinavia is grounded in the long history of cooperative design practised by firms and governmental institutions in the Scandinavian countries (Szczepanska, 2017). User-centred design or *human-centred design* is key in the concept of design thinking. Similarly, the idea of cooperating with multiple stakeholders is key within the design thinking approach as well as it is in moving towards sustainable practices (Adams et al., 2012).

Choosing Copenhagen as our geographical focus, and for instance not Aarhus or another Danish city, is not only based on the presence of major corporations such as IBM wanting to establish innovation centres in the capital, it is also based on the city itself offering help and advice if companies wish to engage in innovation activities (Copenhagen Municipality, 2016b). Moreover, the city was announced *the European Green Capital* in 2014, and the city is renowned for its efforts to become more environmental friendly, as, e.g., OECD has classified Copenhagen a world leader in green growth (Giolla-Møller, 2016). These sustainability efforts are also seen in terms of, e.g., the city turning its harbours into swimmable pools, promoting bicycling as the primary means of transportation, and aiming at becoming carbon-neutral by 2025 (Ramboll & City of Copenhagen, 2014). And more boldly, the Lord Mayor of Copenhagen, Frank Jensen, has publicly announced that his vision for the city in regards to sustainability measures is: "A zero waste city" (Ramboll & City of Copenhagen, 2014, p. 5). The City is also referred to as one of the most safe, innovative and green cities in the world, and it sets out to be the first climate neutral city in the world (Copenhagen Municipality, 2017). These characteristics of the City of Copenhagen set an interesting scene for the innovation labs located in the city. The scene is seemingly loaded with aspirations to advance the sustainability agenda, which arguably seem to make the sustainability transition for innovation labs achievable.

Willard (2002) argues that for businesses to be able to incorporate sustainability at the core of their strategies, they need a framework that is positive towards such changes (Willard, 2002). In other words, governments whose laws set the framework for these companies must ensure that the companies indeed can embed sustainability into their processes in the easiest manner possible. Surely, it will be an investment for the innovation labs to transition their practices, though, Willard (2002) exhibits seven benefits attainable for a firm investing in sustainability, so to embed those efforts in its strategy and core business practices (Willard, 2002). The City of Copenhagen is arguably a suitable place for a company to engage in such a transition. The City has among other things initiated various efforts to ease companies' transition in becoming more environmentally friendly. One of these initiatives is the Copenhagen Solutions Lab, which is an incubator for 'smart city initiatives'. Here the municipality works in collaboration with various administrative departments of the city and national and international companies to innovate new sustainable solutions (Copenhagen Solutions Lab, 2016). Likewise, taking into account the mentioned plans put forward by the Lord Mayor concerning the city's sustainability goals, it appears that businesses play a crucial role in the transformation of Copenhagen in becoming more environmental friendly. Companies are encouraged by the municipality to invent and produce green technologies and present new ideas for the sustainability transformation (Ramboll & City of Copenhagen, 2014). Specifically for existing companies that wish to implement more environmentally friendly practices, the City of Copenhagen has made *Grønne Erhverv*[5]*,* which is a forum where companies can exchange experiences and best practices, but also receive counselling from the municipality on how to embed environmentally sustainable practices into their businesses (Copenhagen Municipality, 2016a). As a result of the bold plans of making Copenhagen a zero CO^2-emission city, the C40 Cities Climate Leadership Group has recently announced that it will locate its centre for global Business, Economy and Innovation Programme in Copenhagen (C40, 2017). The United Nations (UN) and the WE MEAN BUSINESS coalition of business groups even argue that business needs bold policies, as it provides long-term certainty for businesses that policies on environmental issues are aligned with businesses environmental improvement plans (We Mean Business, 2015). The long-term sustainability plans of Copenhagen might then bolster the certainties of a sustainability agenda – at least on a political level. However, it is commonly known that politics is changeable, as seen when the previous 'Venstre'-government of Denmark downplayed Denmark's sustainability agenda in relation to the environment in 2015 (Gormsen, 2015).

[5] Translates to 'Green Businesses'

2. Research Questions

It is becoming increasingly accepted by businesses (Polman, 2015; Zedlmayer, 2015) and in academia that embedding sustainability into business practices can result in competitive advantages (Adams et al., 2012; Ameer & Othman, 2012; Chris Laszlo & Cooperrider, 2010; Porter & Kramer, 2011; Whelan & Fink, 2016; Willard, 2002). For instance, Hewlett Packard (HP) and Unilever have managed to embed sustainability into their business strategies. HP has helped shape several environmental regulations in Europe, as the corporation has made an environmental compliance standard for all its operations based on the most stringent legislation the corporation has come across in one of the markets it operates (Nidumolu et al., 2009). Unilever has assessed its value chain in order to minimize environmental impact, which, among other things, has resulted in Unilever working with local farmers to make their operations more sustainable, combined with the development of new technologies that enable the advancement of sustainability in the firm's value chain (Nidumolu et al., 2009).

The common ground in the literature and the examples of HP and Unilever raises the question of why numerous companies have not employed similar initiatives, which seemingly have created a competitive advantage for the companies exemplified, though, this thesis focuses on innovation labs, as they are perceived to possess some degree of influence, both in relation to their clients, but also in society through their direct and indirect societal roles. Besides, the labs work on a daily basis with innovation, and as e.g. Nidumolu et al. (2009) propose; sustainability can be the main driver for innovation, which supports the legitimacy of our choosing of innovation labs, as they can be perceived as a major source of innovation for several companies and public institutions (considering the many cases and clients exemplified in appendix 1).

The possible differences in perception of what sustainability is and what it should entail in the context of business and innovation is at the basis of the first research question in the thesis. Mapping out the innovation labs' similitudes or dissimilarities in relation to perception of sustainability and their practices, based on qualitative data gathered from semi-structured interviews, will provide our further analysis and discussion with valuable information. In addition to uncover the labs' perceptions of sustainability, qualitative research is made into how the labs embed sustainability into their innovation processes. On the basis of these findings and the literature, we are able to propose how the labs might embed sustainability into their innovation processes, if the labs have yet to do this. Enabling ourselves to propose how the labs might move towards more sustainable practices, but also embed sustainability into their processes, we need to

establish whether there exists a shared language of sustainability within the labs, in order to propose specific initiatives for the labs to undertake, which otherwise might be useless if not understood according to the intention of the proposals. Different perceptions and language of sustainability might also result in a variety of ways of how to measure sustainability and the progress thereof, which in turn, might create disadvantages for clients, the communities and the societies the labs affect. For instance, it might be difficult for clients to identify which innovation labs in fact embed a holistic sustainability perspective into their innovation processes, and which innovation labs merely utilize sustainability for e.g. marketing purposes. Consequently, the following research questions are proposed for this thesis:

How do innovation labs in Copenhagen perceive sustainability?
How is sustainability embedded into their innovation processes?

In the following chapter, we set out to discuss literature in relation to the research questions above, which touches on sustainability, innovation, the interrelations between the two concepts, and how sustainability sometimes is confused with Corporate Social Responsibility.

3. Literature Review

In the forthcoming literature review, we will discuss the literature on innovation, specifically; we want to present an excerpt of the various ways of innovating. Next, we set out to discuss the literature on sustainability, and then sustainability in relation to innovation, as to provide us with the merits to create the theoretical framework of the thesis. Finalizing the literature review, we want to discuss the relationship between sustainability and Corporate Social Responsibility (hereafter CSR), since the two concepts in some ways have been understood as overlapping, and in some cases almost similar, in the context of business practices. In connection, we also explore the 'misuse' or the exploitation of the word and concept of sustainability for pure marketing purposes also dubbed "greenwashing".

3.1 Conceptualising Innovation

From a theoretical perspective, innovation has historically been somewhat difficult to define (Baregheh, Rowley, & Sambrook, 2009). Schumpeter (1947) defined innovation as: "(…) the doings of new things or the doing of things that are already being done in a new way" (Schumpeter, 1947, p. 151). Schilling (2013) defines innovation as: "The practical implementation of an idea into a new device or process" (Schilling, 2013, p. 18). Quite similar, Thompson defines innovation as "(…) the generation, acceptance and implementation of new ideas, processes products or services" (Thompson cited in Baregheh et al., 2009, p. 1325). Additionally, Kimberly defines innovation by determining three different stages of innovation: "(…) innovation as a process, innovation as a discrete item including, products, programs or services; and innovation as an attribute of organizations" (Kimberly cited in Baregheh et al., 2009, p. 1325). The Schumpeterian perspective on innovation may be perceived as quite broad, though, the broadness of his definition can also be seen as a quality. Contrarily, Schumpeter's (1947) definition might only consider innovation as the process of innovating, whereas Kimberly and Thompson also consider the outcomes of such processes as innovation. Having previously stated that the research of the thesis will focus on the *doings* of innovation labs, we see it suitable to adopt the definition of Schumpeter, why we will account for a variety of *ways* of innovating in the following section.

3.2 A Plethora of Ways to Innovate

Innovation in a practical sense, i.e., *how to innovate*, can occur in many forms. The act of innovating can either be performed openly in a public sphere as seen with IDEO's initiative OpenIDEO where any person with an internet connection can participate in innovation processes – specifically using *design thinking* as the innovation method – to tackle some of the global issues humanity faces (OpenIDEO, 2016). Innovation can in contrast be closed i.e. being performed in-house with much secrecy, as future patent-pending products might be developed, which by some is referred to as a more traditional way of innovating (Chesbrough, 2003; Hippel, 2005). Though, closed innovation does not necessarily imply that external engagement or consultancy is unappreciated, however, innovation processes will be performed within a small closed elite circle of collaborators (Pisano & Verganti, 2008). Innovation can also come about by engaging and collaborating with *lead-users,* who are at the leading edge of market trends. The lead-users innovate as they anticipate high benefits from finding solutions to their needs (Hippel, 2005). Innovation can also emerge from, e.g., crowdsourcing, which is comparable to the aforementioned OpenIDEO. Crowdsourcing can also refer to innovation processes performed by a greater public crowd for the purpose of economic gain for the company that outsourced the innovation task to this crowd (Afuah & Tucci, 2012). Crowdsourcing approaches to innovation can be quite consuming in terms of time and resources, as certain systems and metrics have to be put into place as to manage the potentially vast amount of information a crowd can produce (Pisano & Verganti, 2008). Innovation can also be characterised as being closed when a firm picks out a group of participants from its network; such partners might be found in a firm's supply chain (Pisano & Verganti, 2008). Pisano and Verganti (2008) have made a 2x2 matrix to exhibit four ways of collaborating in innovation efforts (see fig. 1), visualising how different collaborative innovation practices might occur.

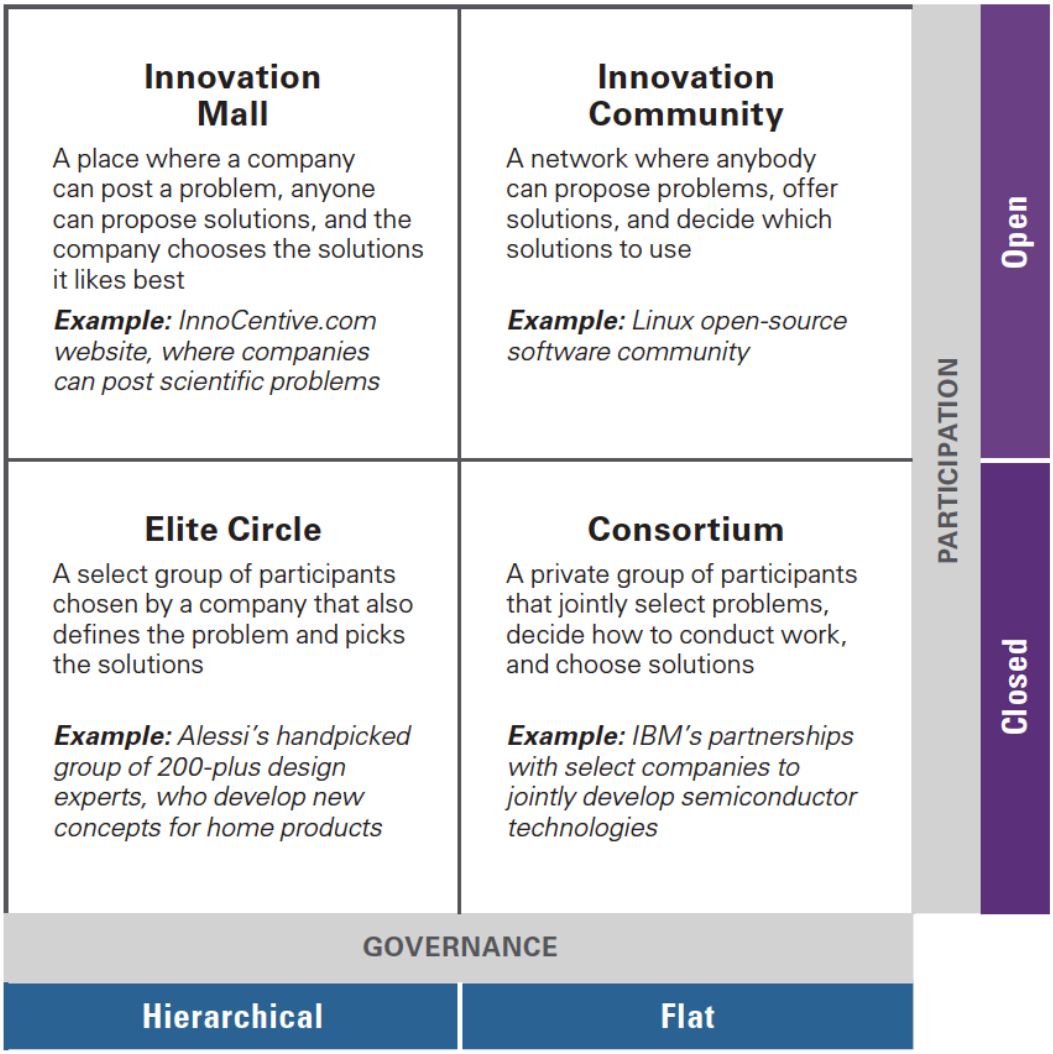


Fig. 1 - Four ways of collaborating (Source: Pisano & Verganti, 2008, p. 82)

Companies can in fact employ both open and closed innovation practices simultaneously (Huston & Sakkab, 2006), which might be beneficial for some companies, as scholars argue that finding a suitable mix of innovation practices or collaboration modes for innovating will be crucial in gaining a competitive advantage (Pisano & Verganti, 2008). Schilling (2013) argues that the most powerful innovations emerge within a network of innovators, i.e. a network of resource and idea contributors such as individuals, firms, universities, governments, non-profits etc. (Schilling, 2013).

By briefly having introduced an excerpt of the literature on how to innovate, we hope to have established that no single way of innovating is better than another. Determining which method is the better one – or mixes of methods – should be made by taking into account several factors,

such as context, timing, budget etc. (Pisano & Verganti, 2008). However, Pisano and Verganti (2008) claim that: "(…) it's now conventional wisdom that virtually no company should innovate on its own" (Pisano & Verganti, 2008, p. 78).

3.3 Sustainability in Business

Dating back to 1916, J. Maurice Clark questioned the nature of businesses in society in The Journal of Political Economy. Referring to the responsibility of firms in the liberal economics, Clark (1916) argued that: "(…) while it does not deny social responsibilities it does to a large extent ignore them" (Clark, 1916, p. 218). He also criticised the academic and practical perception of business at the time when he stated: "(…) theory and practice combine to further an irresponsible attitude among leaders of industry and laborers alike" (Clark, 1916, p. 219). Despite the critical claims, Friedman (1970) and others were frontrunners of a neo-liberal perception of firms during the 1970s that steadfastly sustained into the 1980s. For instance, Friedman (1970) famously stated that: "The social responsibility of business is to increase its profits" (Friedman, 1970, p. 17). Though, in 1987 when the so-called 'Brundtland Report' was published, perceptions of the role of the firm began to change, as e.g. Elkington (1999) states that: "The "Brundtland Report" put sustainable development (…) firmly onto the international political agenda" (Elkington, 1999, p. 55), which relates in more detail to how firms conduct their business by addressing themes of e.g. using less material in production, energy control and "merging ecological and economic considerations in decision making" (Elkington, 1999, p. 55). Elkington (1999) bases much of his considerations in relation to sustainability on the findings and suggestions made by the Commission in charge of the aforementioned report (Elkington, 1999), and much of the more recent literature on sustainability refers to the notion of the *triple bottom line* (see e.g. Adams et al., 2012; Savitz, 2007; Whitfield & McNett, 2014; Willard, 2002; Worley & Lawler, 2010) as described by Elkington (1999) in his quest to bring sustainability into the language of business. The triple bottom line (hereafter TBL) involves measuring environmental, social and economic performance in the form of three equally important bottom lines. Reporting on the TBL is argued to be important, especially to incorporate debatably non-tangible activities into the language of the capitalistic firm (Elkington, 1999).

Pondering over firms' requirement to measure sustainability – in trying to encapsulate the full potential of performances – Elkington (1999) claims that measuring progress against the TBL is indeed possible, though the metrics of doing so should evolve in the years to come, if they are to be integrated into firms' audits. Ultimately, companies who desire to grasp the potential of the

opportunities emerging from sustainability challenges need to carry out audits on sustainability (Elkington, 1999). Measuring sustainability has been under much scrutiny, as some argue that sustainability should not be measured (see e.g. Cooper, 1992; Lehman, 1996), because accounting on e.g. the environment could potentially turn out to be destructive, as natural capital should be perceived as priceless and irrevocable (Cooper, 1992; Lehman, 1996). Norman and McDonald (2004) directly criticize Elkington and the TBL, as they argue that in order to objectively measure on e.g. the social bottom line, the questions asked have to be very vague, since quantifying social activities appear troublesome, as social activities often relates to subjectively perceived factors (Norman & MacDonald, 2004). Others argue that sustainability must be measured, as to be taken seriously in a capitalistic system, which measures performance on indicators and numbers in accordance with regular accounting practices (see e.g. Adams et al., 2012; Bebbington & Gray, 1993). Several methods of measuring sustainability within firms exist (see examples of such methods in Morhardt, Baird, & Freeman, 2002); however, the value and usage of the various methods are debated in relation to each other, as the methods are found to be inexpedient to all companies, since the measuring systems do not consider inter alia context or size of operations (Morhardt et al., 2002).

Besides the TBL, Elkington (1999) theorizes over seven linked revolutions, which he argues will be defining for the business environment in the 21st century. Hence, businesses are proposed to follow suit, as to sustain into the future (Elkington, 1999). In overview, Elkington (1999) exhibits each of the seven revolutions with a unique focus; how this topic in focus was perceived in an 'old paradigm' and how it should be perceived in a 'new paradigm' (see fig. 2).

Revolution	Focus	Old paradigm		New paradigm
1	Markets	Compliance	>	Competition
2	Values	Hard	>	Soft
3	Transparency	Closed	>	Open
4	Life-cycle technology	Product	>	Function
5	Partnerships	Subversion	>	Symbiosis
6	Time	Wider	>	Longer
7	Corporate governance	Exclusive	>	Inclusive

Fig. 2 – Seven revolutions (adapted from Elkington, 1999, fig. 1.1, p. 3)

Whereas Elkington's (1999) seven revolutions are conceived within the capitalist economy (as is Savitz' (2007) notion of the sustainability sweet spot), Hawken (2010)[6] argues that the survival of the planet demands a complete rethinking of the economic system. The economy, according to Hawken (2010), should be restorative, as it should combine ecology and commerce into "one sustainable act of production and distribution that mimics and enhances natural processes" (Hawken, 2010, p. 3). By integrating biomimicry into commerce, Hawken (2010) claims that we will enable ourselves to create the sustainable economy that is needed in order to restore the planet. Quite similar, Elkington (2012) questions, in his later book 'The Zeronauts: Breaking the Sustainability Barrier', whether the Western world has created a global Ponzi scheme[7], where the continuation and sustainability of our pensions and incomes are bound on running down ecological assets, which should have been sustained for the sake of all future generations (Elkington, 2012). Elkington (2012) makes a distinction between weak and strong sustainability, where the former refers to what most CEOs consider in relation to sustainability, such as philanthropy. Strong sustainability in contrast, refers to employing understandings of biosphere dynamics, environmental impact, cradle-to-cradle design and entire life cycles (Elkington, 2012). The second revolution in fig. 2 relates to change in corporate culture. Changing the perception of profit being a goal in itself, into creating social and ethical values will be challenging Elkington (1999) argues. However, it will benefit the TBL of a firm, hence, positive change on the social bottom line will influence the economic bottom line over time (Elkington, 1999). Societies adjacent to companies will increasingly demand companies' ethical compass to be aligned with their own (Elkington, 1999). In line with Hawken's (2010) strong confidence in businesses needing to change their entire way of functioning, Nidumolu et al. (2009) argue that firms moving towards sustainable practices will – at the final stages of becoming sustainable – see it as necessary to create *next-practice platforms*, which questions old paradigms and the status quo of practices in entire industries (Nidumolu et al., 2009).

The fifth revolution in fig. 2 relates to the growing need for firms to partner up with dissimilar organisations in order to comply with regulations, but also in order to excel the TBL agenda. Paradoxically, trends have shown that companies sometimes exploit partnerships in marketing and branding initiatives, which commonly are referred to as 'green washing'. According to Elkington (1999) there is no doubt that positive but strange alliances will emerge (with e.g.

[6] First published in 1993.

[7] Refers to a scheme where returns are paid to separate investors from their own money or from subsequent investors, rather than from actual profits earned (Elkington, 2012).

competitors, NGOs, governments etc.), which will result in competitive advantage in an increasingly competitive world (Elkington, 1999). In relation to what Elkington (1999) frames 'Stakeholder Capitalism', he emphasizes that taking on a stakeholder approach rather than exclusively focusing on catering for shareholders, demands a distinct skillset of balancing the interests of different groups. He states that:

> The real issue is not whether stakeholders should be involved; they are, many whether they like it or not. Instead, the issue, and the emerging challenge, is how to balance the interests of different groups in pursuit of triple bottom line performance (Elkington, 1999, p. 298).

The definition of a shareholder as opposed to a stakeholder is that a shareholder is a person who owns at least one share of a company's stocks, which sometimes gives the right vote at e.g. general assemblies. A stakeholder in contrast, is defined by Freeman as: " (…) any group or individual who can affect, or is affected by, the achievement of the organization's objectives" (Freeman cited in McCarthy & Muthuri, 2016, p. 2). Stakeholders may vary from company to company and from industry to industry, but the common denominator is that these stakeholders do hold some form of power over the companies, of which they are affected. Cornelissen (2011) emphasizes the importance of stakeholders in corporate communication when he refers to Freeman in proposing a framework to segment different stakeholder types (see fig. 3) (Cornelissen, 2011).

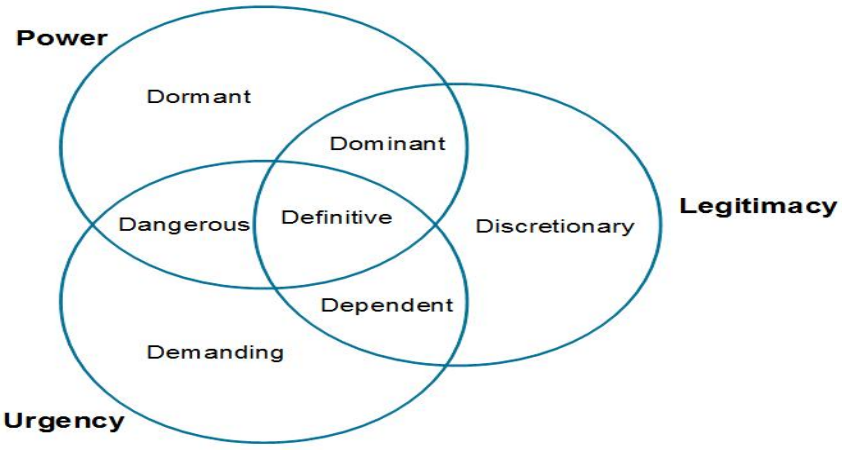


Fig. 3 – Different stakeholder types (Source: Cornelissen, 2011, p. 46)

The stakeholder framework can be utilised by a firm to provide essential insights concerning which stakeholders possess either power, legitimacy or urgency (Cornelissen, 2011). This specific framework somewhat discards the idea that all stakeholders are equally important to a given firm. Savitz (2007), as another promoter of focusing on stakeholders, instead of merely settling on providing dividends to shareholders, finds the 'stakeholder approach' crucial in his notion of 'the sustainable sweet spot', since a sustainable firm cannot operate without considering the interests of its stakeholders. Certainly, shareholders are not excluded from the characterization of stakeholders, yet a broader sense of which groups are affected by a company's doings is important when discussing sustainability (Savitz, 2007). The sustainability sweet spot relates to the common ground where "(…) the pursuit of profit blends seamlessly with the pursuit of the common good" (Savitz, 2007, p. 17). Savitz' (2007) notion of sustainability fits somewhat without difficulty with Elkington's (1999) idea of how the TBL should be understood, since a firm should be able to increase its social bottom line without decreasing its economic bottom line for instance (Elkington, 1999).

Another important aspect of the sustainability concept is the question of 'trade-offs', which relates to the somewhat common belief that investing in or initiating sustainability efforts by a firm will result in higher prices and reduced competitiveness (Orsato, 2009; Porter & Van der Linde, 1995). This belief has been discussed and consequently been discarded in the sustainability literature, as it stems from a short-term perspective on firm strategy, combined with a somewhat narrow focus on shareholders instead of focusing on stakeholders (Orsato, 2009; Porter & Van der Linde, 1995). Elkington (1999) argues that most of today's societal practices appear to be short-termed: competing media outlets battling to be first, governments thinking no more than four years ahead, and CEOs thinking performance in terms of quarters (Elkington, 1999). Consequently, the sixth revolution in fig. 2 – the revolution of time – will show that the sustainability agenda will drive the perception of time into a perspective of long-term efforts. There is no short-term-fixed business that can survive in the sustainability transition, because the issues and challenges facing the world need long-term solutions (Elkington, 1999). Referring to Collins and Porras' 1994 book 'Built to Last', Elkington (1999) summarises that: "(…) the best companies turn out to pursue a cluster of objectives and are guided by a core ideology – including core values and a sense of purpose beyond the financial bottom line"[8] (Elkington, 1999, p. 257).

[8] Original in italic

Adams et al. (2012) argue that firms need to integrate sustainability at the core of their business; otherwise they will not be able to advance into becoming what they label 'system builders'. System builders have managed to design their operations in a systemic sense, as to consider a broad set of consequences of operating. Furthermore, systems builders operate with a socio-technical mind-set, rather than a narrow technical one (Adams et al., 2012). Much in parallel to the notion of systems building, Elkington (1999) argues, when explaining his seventh and final revolution, that sustainability is ultimately an issue of corporate governance, which is driven by the other six revolutions (see fig. 2). The better systems of corporate governance the better possibility there will be for building a "genuinely sustainable capitalism" (Elkington, 1999, p. 12). Corporate governance will have to focus on inclusion rather than exclusion, and the sustainability agenda will ultimately be the responsibility of the corporate board, whatever the drivers of the transition. The success of a company is often related to how well-run its board is, why the sustainability agenda, and embedding this into the core of the firm, is and must be of the responsibility of the corporate board (Elkington, 1999). Elkington (1999) states that:

> (…) it is increasingly clear that a growing proportion of corporate sustainability issues revolve not just around process and product design but also around the design of companies, of "business ecosystems" and, ultimately, of markets. *The best way to ensure that a given company fully addresses the triple bottom line is to build the relevant requirements into its corporate DNA from the very outset and into the parameters of the markets it seeks to serve* (Elkington, 1999, p. 277).

What Elkington (1999) argues is partly that the need, for designing sustainable systems and structures, is vital in order to address corporate sustainability issues.

Contemplating on the sustainability literature presented above, it appears that some scholars point towards the difficulties of measuring sustainability efforts efficiently, since some of the initiatives appear hard to quantify – and even define, due to the difficulty in defining the sustainability concept itself. Moreover, the literature presents the issue of whether firms should invest in sustainable efforts solely as a means to be profitable as e.g. Reinhardt (1999) argues that firms should embed sustainability at the core of its DNA, simply to sustain its existence, thus, to be able to cope with ever changing external forces impacting the firm.

3.4 Sustainability and Innovation

Worley and Lawler (2010) argue that organizations have to be designed to become sustainable (Worley & Lawler, 2010). Corresponding to the notion of systems building in the previous section of this thesis, business models must be designed as to advance the sustainability agenda. Rethinking – or redesigning – business models as well as innovating as a means to become sustainable is considered by several scholars as an essential activity of firms in relation to current and future sustainability challenges (Adams et al., 2012; Bhattacharya & Polman, 2017; Chris Laszlo & Cooperrider, 2010; Nidumolu et al., 2009; Seebode, Jeanrenaud, & Bessant, 2012; Worley & Lawler, 2010). Contrarily, some scholars argue that sustainability can or should be the main driver for innovation; Hawken (2010), for instance, has stated that: "Sustainability is the most certain path for innovation in firms that seek a competitive advantage" (Hawken, 2010, p. xx). The question whether innovation should drive sustainability or sustainability should drive innovation becomes somewhat irrelevant for the discussion of whether sustainability is important for the success, survival, competitive advantage or complete failure of firms, as the literature covering the interrelations of the concepts tends to agree upon the importance of both innovation and sustainability (Adams et al., 2012; Ameer & Othman, 2012; Bhattacharya & Polman, 2017; Bonini & Görner, 2011; Elkington, 1999; Hansen & Grosse-Dunker, 2013; Hawken, 2010; Jay & Gerard, 2015; Chris Laszlo & Cooperrider, 2010; Christopher Laszlo & Zhexembayeva, 2011; Nidumolu et al., 2009; Orsato, 2009; Porter & Van der Linde, 1995; Savitz, 2007; Seebode et al., 2012; Worley & Lawler, 2010; Zedlmayer, 2015). For instance, Orsato (2009) argues that firms can surpass competition by employing *Blue Ocean Strategies* (BOS). The approach abolishes the notion of the aforementioned 'trade-off' by focusing on customer needs instead of what competitors do in the marketplace to compete. By focusing on customer needs, firms can tap into new markets, and consequently offer new value propositions. Orsato (2009) argues that, offering new value propositions will result in overcoming the perceived 'trade-off', which relates to: increasing prices at the expense of increasing the firm's competitive advantage. This is argued to be due to new value propositions create new market spaces, which are fairly unknown territory in terms of e.g. pricing (Orsato, 2009). The BOS is highly related to what Orsato (2009) labels 'sustainable value innovation strategy' (Orsato, 2009), which appears to be similar to the 'sustainability sweet spot' proposed by Savitz (2007). Both concepts (see fig. 2.2 in Orsato, 2009, p. 38; and figure 7 in this thesis) convey the idea of identifying where the interest of a business and its stakeholders overlap,

which is where the firm has the possibility to reap the benefits of becoming sustainable in its innovation efforts.

Much emphasis is given to the importance of collaboration in the literature on sustainability in relation to innovation, as collaboration is broadly perceived as a means to advance the sustainability of a firm's business and innovation processes (Adams et al., 2012; Elkington, 1999; Nidumolu et al., 2009; Savitz, 2007). As we have accounted for previously in the thesis, we have chosen to focus on design thinking, partly because it is the predominant method of innovating among the innovation labs in our research sample, and partly, because it encourages collaboration among different professions, inputs from users, iterative processes and fast prototyping (IDEO, 2015), which, all taken together, arguably create a framework for innovation to happen in partnership, inexpensively and in a rather rapid pace. Because of these qualities, and the method being *human-centred*, design thinking might work as an optimal way of bridging sustainability and innovation.

One way of easing the transition into a corporate mind-set of sustainability when innovating could simply be a matter of framing, why strategies of Appreciative Inquiry (hereafter AI) could be adopted (Fuller, Griffin, & Ludema, 2000; Chris Laszlo & Cooperrider, 2010; Thatchenkery, Avital, & Cooperrider, 2010). Laszlo and Cooperrider (2010) propose that firms go through seven steps to become sustainable. These steps are based on AI, which relates to "collaborative discovery and by building on system-level strengths rather than on an analysis of weaknesses of the component parts" (Chris Laszlo & Cooperrider, 2010, p. 21). AI relates to a high degree to a change in mind-set, as it bases its merits on positive dialogue rather than manager-level directives, envisioning and co-creating the future (Fuller et al., 2000). AI might not be a specific innovation method or a theory of sustainability, but a means to embrace change in organizations, why we have included the concept in the literature review, as it might be useful to consider in relation to how some innovation labs might move towards sustainable practices.

3.5 CSR versus Sustainability

CSR has been debated based on various beliefs and definitions. Ranging from philanthropic endeavours to compliance reporting and sustainable development initiatives. CSR has also been debased as being a tool for marketing efforts, or part of corporate branding, but also promoted as

the new way of conducting business and complying with rules and regulations. According to Hopkins (2007), addressing CSR as philanthropy is wrong:

> Some people equate philanthropy with CSR. For instance, Michael Porter wrote: Corporate philanthropy – or corporate social responsibility is becoming an ever more important field for business. Today's companies ought to invest in corporate social responsibility as part of their business strategy to become more competitive. So, Michael Porter has got it wrong (Hopkins, 2007, p. 113).

What Hopkins (2007) argues is that there is much more to CSR than just being philanthropic and complying with the law and acting ethically responsible.

With CSR, firms act as good corporate citizens; however, Whitfield & McNett (2014) argue that this has a limited impact, because CSR activities are intended to improve company image with few operational changes. There has been a development in the utilization of CSR from a philanthropic endeavour, to considerably fashioning business conduct, such as monitoring, focus on work conditions, and setting global standards – at least when operating abroad.

CSR has developed since the 1990s where Coca-Cola among many other large corporations saw the writing on the wall when the media exposed the corporation's lack of compliance with regulations and what could be viewed as good business practices. Some of the business practices exhibited by the media showed that Coca-Cola was polluting local environments and depleting scarce water supplies in India (Karnani, 2014). Karnani (2014) states in relation to Coca-Cola's decision to locate their water-intensive plant and in relation to the firm's CSR profile:

> (…) the issue of water scarcity, especially in Rajasthan, was quite obvious even in 1999, and a socially responsible company would not have located a water-intensive plant in that area, and that the current proclamations about water stewardship are just public relations strategies in response to social activism—so-called "greenwash" (Karnani, 2014, p. 7).

Karnani's (2014) arguments concerning what he labels 'greenwashing' exhibits that the concept of CSR can be misinterpreted or even misused when employed for marketing purposes. Greenwashing is "the act of misleading consumers regarding environmental practices of a company (firm-level greenwashing) or the environmental benefits of a product or service (product-level greenwashing" (Delmas & Burbano, 2011, p. 66). CSR reports are found to either signal a great commitment to

corporate citizenship or greenwashing (Mahoney, Thorne, Cecil, & LaGore, 2013), which is why we have chosen not to focus on CSR or CSR initiatives as a way of addressing sustainability or sustainable practices. Partly because of the rather clear differences between the two concepts, according to Whitfield and McNett (2014) (see fig. 4), which often are confused, but also because the possibility of the faulty utilization of CSR when intentionally employed for greenwashing purposes. This in spite of the existence of examples of companies adopting or performing CSR initiatives that drive sustainable innovation and change (Rangan, Chase, & Karim, 2015).

	Sustainability	Corporate social responsibility
Value proposition	Firm creates socioeconomic benefits with a low environmental footprint—the company and community coming together	Firm acts as a good corporate citizen through philanthropy
Methods	Actions are integral to competition and long-term profit maximization	Actions are discretionary or because of external pressure
Strategies	Agenda is company-specific and internally generated	Agenda is determined by noncore business interests
Impact	Large impact because its actions realign the entire company budget and operations	Limited impact because its actions are intended to improve company image with few operational changes
Examples	Patagonia, Burt's Bees	British Petroleum

Fig. 4 – Comparison of sustainability and CSR (Source: Whitfield & McNett, 2014, Exhibit 1.1, p. 6)

Since the innovation labs in our research sample are located in Copenhagen, and therefore must comply with domestic and EU legislation and directives, we find it interesting to include the European Union's definition of CSR in this review, as it has evolved since it originated in 2001. In the beginning the EU defined CSR as: "(…) a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (ETUC, 2011, para. 2). Whereas, the European Union's 2011 definition clearly emphasize the importance of firms' role in society and their impact thereon. The EU consciously removed the voluntarism in the 2011 definition of the concept, as a means to underline that firms *do* have a responsibility towards its surroundings (ETUC, 2011).

Around the same time as the introduction of the concept of CSR by the EU, Elkington (1999) saw the TBL principle as in accordance with CSR (Elkington, 1999), though, in more recent literature the relationship between sustainability and CSR is disputed. It is questioned as to what extend CSR is similar to the concept of sustainability, as CSR often is perceived as pure philanthropy, and sometimes as merely a reporting tool that enables marketing efforts based on philanthropy (Whitfield & McNett, 2014).

In the metric 'Value proposition' in figure 4 above, Whitfield and McNett (2014) claim that sustainability is connected to socio-economics, which could be related to the concepts of corporate sustainability or the TBL, and that CSR is more often related towards addressing issues after core business goals are met: "CSR refers to voluntary business activities that account for the social and environmental impacts created by the business" (Whitfield & McNett, 2014, p. 5), whereas sustainability is seen as an essential part of the core business and of the strategy of the business (Whitfield & McNett, 2014).

By briefly having touched on CSR in relation to sustainability, we hope to have established the merits of why CSR can be perceived as a partially (if at all) reliable sustainability framework, which is a result of quite tenuous definitions at its origination, combined with the tendency of greenwashing in relation to CSR reporting. Consequently, we find CSR as a sustainability framework unsatisfactory for the purpose of exploring how innovation labs perceive sustainability, as CSR has proven to permit misunderstandings of what sustainability means in a business context.

4. Definitions and Delimitations

With the literature review in mind, the immediate chapter will present how we have defined and delimited some concepts that are key in our research and for the following analysis and discussion.

4.1 Defining Innovation

The term 'innovation' refers, according to the Oxford Dictionary, to "the action or process of innovating" (Oxford Dictionaries, 2016b). It stems from the Latin verb *innovare* which in modern English has become the verb "innovate", which means "make changes in something established, especially by introducing new methods, ideas, or products" (Oxford Dictionaries, 2016a). For the purpose of our thesis we refer to Schumpeter's (1947) classic definition of innovation: "(…) the doing of new things or the doing of things that are already being done in a new way" (Schumpeter, 1947, p. 151). Briefly mentioned in the introduction, we are interested in the 'doing' – the practice – of innovation, as to investigate how sustainability is embedded into innovation processes within innovation labs. In Schumpeter's (1947) definition of innovation, he refers to the concept of *'creative response'*, which relates to disruptive and durable economic change as the result of a firm or an industry doing something (or changing its practices) in a way that is out of the ordinary. The success or failure of such creative response is dependent on a variety of factors, but Schumpeter (1947) places a great emphasis on the entrepreneur as a key actor in the transformation, as the decisions and actions of the entrepreneur are paramount when responding creatively to change (Schumpeter, 1947), i.e. undergoing innovation processes as to provide appropriate solutions to challenges or problems. Furthermore, it appears that innovation also implies an exploitation of new methods, ideas or products. The exploitation of innovations moves or transforms new elements from being inventions to market-ready solutions. Schumpeter (1947) argues that many inventors have become entrepreneurs, though he makes a clear distinction between the two functions: "The inventor produces ideas, the entrepreneur "gets things done," (…)" (Schumpeter, 1947, p. 152).

Focusing on the 'doings' of those who innovate, we found that the most prevalent method of innovating in innovation labs in Copenhagen involves the utilization of design methods. More specifically, design thinking as described by IDEO (IDEO, 2015) or some variety thereof (Bespoke, 2017; Spark CPH, 2017; Space10, 2017b; Climate Unit, 2017; Fjord, 2017; We Love People, 2017; Smith Innovation, 2017; Innovationlab, 2017; Leo Innovation Lab, 2017; Hatch & Bloom, 2017; Designit, 2017; IIAB, 2017; CHI, 2017; Area9, 2017). Consequently, we will go into a more

detailed account of the approach as proposed by IDEO. Prior to this account we will present a brief summary of the history of design thinking with respect to enrich the knowledge base in relation to the design thinking approach.

4.2 A Brief History of Design Thinking

Since the 1960s, design thinking has evolved as a way of thinking design, and in Scandinavia in particular, designing has in many cases taken form as cooperative design, as it is characterized as both "inclusive and democratic" (Szczepanska, 2017, section '1960-1980'), which correlates with current ways of perceiving *design thinking* as a user-centred method to innovate (Szczepanska, 2017). Between the 1960s and the 1980s-design transformed from only being something that was made in relation to tangible objects into non-tangible areas as well such as services, processes, interactions, software etc. While making non-tangible designs, different professions were included into the process, such as anthropology and psychology, because a deepened understanding of how people react in the ways they do in relation to e.g. new process innovations. Enhancing the focus on the user-experience of any given design, Horst Rittel introduced Phenomenology to design in the early 1970s (Szczepanska, 2017). Rittel and Webber (1973) argued that social problems are *wicked*, since social problems have no end; trying to solve one wicked problem affects another and yet another and so forth (Rittel & Webber, 1973).

In the 1980s Donald Schön highlighted the importance of human reflectivity into design with his 1983 book 'The Reflective Practitioner'. In later design thinking theory, this significance given to reflectivity of the designer can be seen in correlation with the emphasis on iteration when undergoing processes of design (Szczepanska, 2017). Later on, in the 1990s, scholars such as Richard Buchanan drew a line from design to innovation by re-opening a discussion on design as a problem-solving tool. Buchanan argued that design is integrative "because of its lack of specialization" as it has the potential to "connect many disciplines" (Szczepanska, 2017, section 'Richard Buchanan'). However, the 1991 merger that resulted in the creation of IDEO has become the stage-setter of current design thinking and design driven innovation, as the company includes talent into their team with different backgrounds such as within the social sciences (anthropology and psychology); people with business backgrounds; and from healthcare (Szczepanska, 2017).

Bill Moggridge, co-founder of IDEO, introduced multidisciplinary teams as an explicit tactic of IDEO, as he saw the potential power in connecting people with backgrounds within design and science (Cooper Hewitt, 2012). Including talent with different educational backgrounds in the

design thinking process has shown to be one of the major strengths of the approach, as it has managed to popularize design thinking into the realm of business (Szczepanska, 2017). Moggridge found that designing with the human in mind was essential, when he created the first laptop PC. Crucial to his discovery was that physical design is bound by the interaction of the user and the utilization of the design (Cooper Hewitt, 2012), hence, the focus on human-centred design at IDEO, which is at the foundation of the company's framework of guiding innovation processes (IDEO, 2015).

In the subsequent section, we will account for IDEO's design thinking approach in more depth to attain a better comprehension of the company's method of innovating. A deepened understanding of the approach will enable us in understanding the innovation methods employed by the innovation labs in our research sample.

4.3 Design Thinking as a Method to Innovate as described by IDEO

David Kelley, co-founder of IDEO, rationalize that they coined the term 'design thinking', as it came about in a manner that seems rather banal, as he was contemplating on what designers actually do. They think. Thus, the term 'design thinking' came into mind (Brown & Wyatt, 2010). Explaining what design thinking is he has stated that:

> As an approach, design thinking taps into capacities we all have but that are overlooked by more conventional problem-solving practices. Not only does it focus on creating products and services that are human-centered, but the process itself is also deeply human (David Kelley as cited in Brown & Wyatt, 2010, p. 4).

Briefly defining design thinking, Tim Brown, CEO of IDEO, has stated:

> Applying the methodologies and approaches of design to a broader set of issues and problems in business and society (DesignThink Movie, 2012, min. 0:13-0:21).

The fundamental premise of design thinking is that 'the human' you are designing for or with has to be at the centre of the process, as it will create increased value, and fulfil human needs superiorly to innovation approaches that do not consider the user of the innovation. According to Brown & Wyatt (2010) and IDEO (2015), by adapting to the mind-set of design thinking and using it as a method of

designing solutions to problems, then, any sort of problem can be solved with design thinking (Brown & Wyatt, 2010; IDEO, 2015).

IDEO's approach to design thinking guides innovators through three phases – or spaces as IDEO often refers to them – one of *inspiration,* another of *ideation*, and one of *implementation.* The entire process is characterised by being non-sequential or non-linear, as concepts such as brainstorming, testing, prototyping, learning from failure and iterations while embracing ambiguity are perceived as appreciated and necessary in a process of producing great outcomes (IDEO, 2015).

In the following section, we will go into more detail with the spaces of design thinking as explained by IDEO, partly because this approach to innovation is the most prevalent method of innovating in the innovation labs included in our research sample, as mentioned earlier. Yet, it is also due to the approach's main premise; it is human-centred, and therefore it might be suitable when considering issues within the social aspect of the sustainability agenda, which we will discuss in detail later in the thesis.

4.3.1 Inspiration, Ideation and Implementation

The three spaces that IDEO addresses is presented in their field guide concerning human-centred design, they specify it – from the perspective of the innovator or designer – in the following terms: "Being a human-centered designer is about believing that as long as you stay grounded in what you've learned from people, your team can arrive at new solutions that the world needs" (IDEO, 2015, p. 9). By viewing design through the lens of IDEO, this perspective provides the possibility of creating solutions to any given problem through design. Moreover, these spaces involve iterative processes entailing asking questions, failing, testing and creating new ways of designing towards solving problems

The first of the three spaces in human-centred design is *inspiration*. The space of *inspiration* entails a somewhat ethnographic approach to information gathering by using insights, observations and conversations. This is what IDEO calls 'immersion' or the 'immersion phase' into the needs, desires and wants of potential users: "The best route to gaining that understanding is to talk to them in person, where they live, work, and lead their lives" (IDEO, 2015, p. 52). Thus, the innovator has to *immerse* her or himself into the lives of the potential users, as to attain information and an comprehensive understanding of them and their problems and needs, to identify where the users experience a given design-problem.

Fig. 5 – Example of immersion exercise by IDEO (Source: IDEO, 2015, p. 93)

Figure 5 is a 2x2 framework model, which exhibits how immersion could be illustrated when mapping out where actors in given environments have placed their resources or disposable incomes. The example in fig. 5 is found in IDEO's in-depth interviews conducted in four countries – Kenya, South Africa, Thailand and the Philippines: "This particular 2x2 identified the Caretakers – those who have some level of disposable income and go out of their way to care for those around them and the Survivors – those who are living day-to-day with little or no support" (IDEO, 2015, p. 92), which clarified the characteristics of the people IDEO was designing for. Additionally, this is a large part of what design thinking is and can do: "Design Thinking relies on our ability to be intuitive, to recognize patterns, to construct ideas that have emotional meaning as well as being functional, and to express ourselves in media other than words or symbols" (Brown & Wyatt, 2010, p. 4).

Brown and Wyatt (2010) mention that none of the spaces are supposed to be seen as direct steps taken in sequence, but as overlapping spaces as one gets *inspired* that will motivate the search

for solutions. In other words, to *ideate* (the process of generating, developing and testing ideas), potentially overlaps all the way to the last space of *implementation.* The space of *implementation* is where possible solutions are primed from being at the project stage into becoming a part of people's lives (Brown & Wyatt, 2010).

The *ideation* space is where the *inspiration* attained and the immersion done in the field have provided insights that could lead to new solutions or opportunities. The synthesising of information gained in the field into new solutions is explained as follows: "This approach helps multiply options to create choices and different insights about human behaviour" (Brown & Wyatt, 2010, p. 6). Brown and Wyatt (2010) explain that prototyping is at the core of the ideation space: "Through prototyping, the design thinking process seeks to uncover unforeseen implementation challenges and unintended consequences in order to have more reliable long-term success" (Brown & Wyatt, 2010, p. 8). This process of prototyping enables the innovator to validate a component of a device or the use of that component from various perspectives, e.g. from different perspectives of users, and, additionally, it allows the innovator to investigate the interaction that happens between the user and the prototype. Design thinking does not necessarily go through the spaces as sequential steps, as the process should be iterative, i.e. going back and forth between the spaces. As depicted in figure 6, *inspiration* usually occurs first, but it might be revisited several times before actually being implemented or found satisfactory.

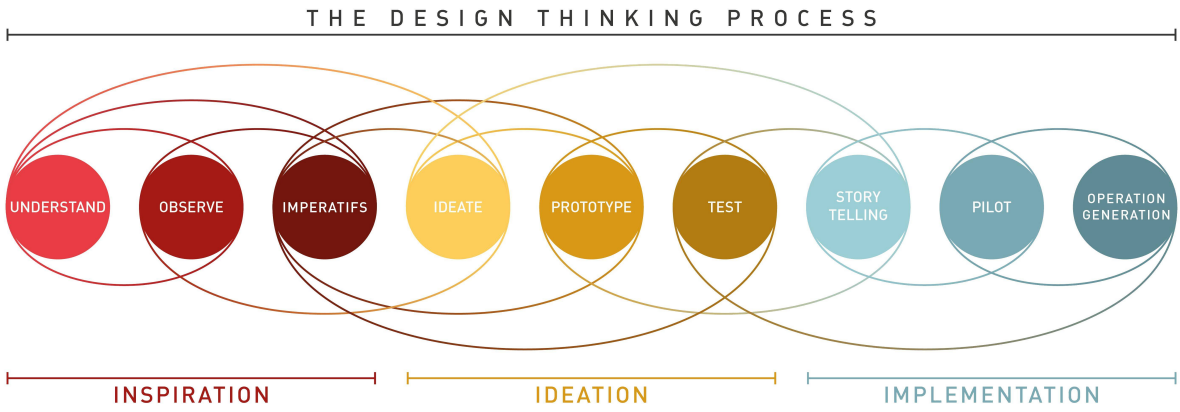


Fig. 6 – The design thinking process (Source: d.school Paris, n.d.))

Going through the spaces of *inspiration* and *ideation* leads to the space of *implementation*. This third space is where ideas are being tested and evaluated in order to find the best solutions. Furthermore, it is in this space where solutions are fully conceived and an action plan of implementation is made.

Because of the focus on human beings, we have included design thinking in this chapter of the thesis – as it is a human-centred approach, which we argue might work as a suitable method to bridge sustainability and innovation. Design thinking already considers some social elements of a TBL perspective on sustainability, which we will discuss in depth chapter 9. Moreover, knowing that the innovation labs are familiar with design thinking, since they all employ some variety of the method, provides us with a singular focus when we set out to propose how the labs might embed sustainability into their innovation processes in the discussion of the thesis. Including design thinking in this thesis also becomes a question of viability, as we desire to propose changes that innovation labs in Copenhagen in fact could see as realistic in the foreseeable future, i.e., we wish to propose embedding sustainability into the labs' current innovation processes, instead of proposing entirely new innovation methods which might be sustainability embedded.

4.4 Defining and Delimiting Innovation Labs

Contemplating on Schumpeter's (1947) notions presented in section 4.1, and considering that we investigate innovation labs as separate entities, it becomes illuminated that our research is agency-oriented, as we do not attempt to analyse the industry of innovation labs on a systemic level.

Defining what an innovation lab is seems to relate to what they do, hence, we direct our attention towards the online research conducted preliminary to the interviews conducted with employees of the innovation labs in appendix 1. Looking at the 14 innovation labs in our research sample (appendix 1), a pattern appears: what an innovation lab can offer is related to creating something new for the future, which helps their clients through a world that is constantly changing at a rapid pace. Some innovation labs focus on digital solutions, whereas others focus more on the social impact that such an innovation process might entail. Some innovation labs even mention having 'a purpose' of a non-economical nature as something that can be just as relevant for clients as return on investment (ROI) of the investment made into a given innovation process. What seems to be the common trait of all the innovation labs is the innovation method employed. Looking at the research sample in appendix 1, the innovation labs' websites and taking into account that all the

interviewees have directly responded or implied that they employ the design thinking approach or some variety thereof (Bespoke, 2017; Spark CPH, 2017; Space10, 2017b; Climate Unit, 2017; Fjord, 2017; We Love People, 2017; Smith Innovation, 2017; Innovationlab, 2017; Leo Innovation Lab, 2017; Hatch & Bloom, 2017; Designit, 2017; IIAB, 2017; CHI, 2017; Area9, 2017). Some labs have even adopted IDEO's design thinking lingo, as e.g. We Love People claims to 'go deep' when obtaining user insights (We Love People, 2017).

We found that innovation labs to some extent resemble consultancy firms such as Deloitte and Boston Consulting Group (BCG) because of their role of consultancy, however, what especially sets the identified innovation labs apart from other consultancy firms – from our perspective of interest – are the methods employed. Design thinking is central to all the identified innovation labs in our research sample, which inherently demands a design approach to solving problems and innovating, whereas Deloitte predominantly focuses on the company they are consulting by offering e.g. strategy plans, HR-solutions and knowledge about trends and capabilities of new technology (Deloitte, 2017). BCG focuses mainly on trends and statistical data in relation to users when consulting clients on innovation efforts (BCG, 2017). Considering McKinsey&Company, another global consultancy firm with offices in Copenhagen, which offers a great variety of consultancy services ranging from market analysis; to operations; to risk management; to corporate finance, we found that the firm does have a design department, where design thinking approaches are employed. However, McKinsey's design departments are located in Sweden, Germany and the US (McKinsey&Company, 2017), why the firm is geographically outside of the scope of this thesis.

Specifically, we have identified and classified three types of innovation labs within Copenhagen. They are either (1)[9] privately or (2) publicly owned and function similarly to external consultancy agencies[10], and (3) third: innovation hubs existing independently of, but because of a parent company. The (3) third categorization is based on our preliminary research (appendix 1), which exhibits that Leo Innovation Lab exists because of parent company Leo Pharma; Space10 exists because of parent company IKEA; and Fjord exists because of parent company Accenture. However, they all exist independently of their parent company, i.e., they do not follow parent

[9] Numerating the three classifications of innovation labs is only for making the distinction between them clearer.

[10] Noting the differences between the identified innovation labs and other consultancy firms accounted for in the previous paragraph.

company strategy or budgets, but they do report back to their parent company. According to Schilling (2013), companies that have in-house R&D departments consider these departments as the primary source of innovation (Schilling, 2013). The (3) three identified innovation labs are not in-house innovation labs, since they work independently of their parent company, though they can be seen as something quite similar to an in-house innovation lab in relation to identifying the primary source of experimental innovation that could e.g. sustain the parent company into the future. We have chosen to include (3) the innovation labs, as they are still relevant to our research despite the fact that they report back to only one client (their parent company). It is still relevant to investigate how these perceive sustainability, and how these embed sustainability into their innovation processes, which will directly affect their parent company. The (3) innovation labs can be seen as being detached from its parent company; for instance, Leo Pharma has an in-house R&D department developing new products for people with skin diseases, whereas the detached Leo Innovation Lab experiments with new digital services complementing the parent company's products (Leo Innovation Lab, 2017).

As seen in the variety of companies that we have chosen to investigate (appendix 1), some might argue that not all of the firms identified can be characterized as innovation labs per se, since few of them explicitly claim to be one. Though all the companies identified perform innovation processes and utilize *design thinking* as the prevalent method to innovate, which is the dominant selection criteria for the research of this thesis. Why not include innovation labs that employ other innovation methods? We simply have not been able to identify any within the City limits of Copenhagen that does not employ the design thinking method or some variety thereof, which might be an indicator of the usefulness of the design thinking approach.

4.5 Defining Sustainability

In the very introduction, we mentioned that there is no clear definition of sustainability in the scientific community or in academia. Sustainability, in the 1987 report 'Our Common Future' (Brundtland, 1987) previously mentioned, also known as 'the Brundtland Report' for sustainable development, defined sustainable development as meeting "the needs of the present without compromising the ability of future generations to meet their needs" (Brundtland, 1987, p. 43). In other words, businesses need to be able to sustain nature's resources as well as sustaining their business (Willard, 2002). For the purpose of this thesis we define sustainability in a business

context in accordance with Savitz' aforementioned notion of the sustainability sweet spot: "the sustainability sweet spot: the place where the pursuit of profit blends seamlessly with the pursuit of the common good" (Savitz cited in Whitfield & McNett, 2014, p. 133). More explicitly, Savitz (2007) explains that: "The sweet spot embodies the literal meaning of "sustainability," making your company *viable for the long term* by managing according to principles that will strengthen rather than undermine the company's roots in the environment, the social fabric, and the economy" (Savitz, 2007, p. 20).

Sustainability is often connoted with the use of natural resources and its impact on the planet, also referred to as the 'planetary boundaries'. The planetary boundaries are mostly concerned with biodiversity and climate change as the two core indicators for measuring the boundaries of the planet, and it is apprehensive with ecological safety and social equity (Rockström et al., 2009). However, there is a limitation to the approach: "the PB (Planetary Boundaries) approach is embedded in this emerging social context, but it does not suggest how to maneuver within the safe operating space in the quest for global sustainability" (Steffen et al., 2015, p. 75).

The themes of sustainability have been – and still are being – debated and its various connotations are known to have influenced the perception of sustainability in political debates and resulting actions taken towards addressing the planetary boundaries. The word 'sustainability' is not only used, but also understood from various perspectives, and it is defined in various ways in the context of business. It might be known as e.g. environmental sustainability or corporate sustainability (Whitfield & McNett, 2014). Moreover, sustainability is bound on risk, uncertainty and controversy in relation to what needs to be sustained in the future. In the context of business there are three predominant ways sustainability can lead to capturing increased value. These ways are: (i) growth (involves e.g. innovation); (ii) risk management (involves e.g. regulations and reputation); and (iii) return on capital (involves e.g. sustainable operations or sustainable value chains) (Whitfield & McNett, 2014).

The climate changes we currently experience has come to be defined as being central in the era of the 'Anthropocene', in juxtaposition to the Holocene epoch, which is coined by Nobel Laureate Paul Crutzen (Crutzen, 2002; Richardson et al., 2009). The Anthropocene era is relating to the current geological age, viewed as the period during which human activity has been the dominant influence on climate and the environment (Hamilton, Bonneuil, & Gemenne, 2015). As we see

changes in the climate enforced by human activity, it is palpable that new innovations emerge to address the issues related to the planetary boundaries. Being in the Anthropocene era, looking at business as a major stakeholder in relation to the sustainability of nature's resources, it becomes imperative to address the current ways of manufacturing and operating, which are influencing the environment, social and economic parameters of sustainability, also known as the '3Ps' (People, Planet, Profit) or the TBL agenda (Whitfield & McNett, 2014).

As mentioned, we are interested in the innovation labs in Copenhagen, which carry out tasks for various manufacturing and service providing businesses and public institutions. Thus, we wish to explore partly how the labs from our research sample perceive sustainability, and how they embed sustainability measures into their processes. Consequently, in the following we will introduce the theories and concepts related to sustainability and sustainability in relation to innovation that we find suitable for analyzing our empirical findings from our research sample considering the preceding literature review and our definitions and delimitations.

5. Theoretical Framework

Elkington's (1999) concept of the TBL is at the foundation of the theoretical framework of this thesis, as the particularity of the TBL agenda appears useful for the purpose of analyzing how the identified innovation labs perceive sustainability, but also in relation to how they might move towards sustainable practices when contemplating what emerges in the 'shear zones' of the three bottom lines, which we will account for in this chapter.

We also include Savitz' (2007) concept of the 'sustainability sweet spot' in our analysis, since it provides us with a visualization of where business can benefit from sustainability (Savitz, 2007). The interest of the sustainability sweet spot came from the assumption that new sustainable innovations can be the result of operating within the sweet spot, which underscores the idea of innovation labs playing a central role in the sustainability transition for firms, because of the labs' core value proposition of offering innovation.

Additionally, we have included the theory of Sustainability-Oriented Innovation (SOI), which provides some guidance in terms of where firms might be positioned dependent on a distinct context relative to their sustainability mind-sets and concrete actions taken towards increasingly sustainable operations. Based on different criteria, we can position the different innovation labs in the three contexts accounted for in the SOI literature (Adams et al., 2012), and from there discuss which actions should be taken by the labs in the quest of moving towards more sustainable practices.

Finally, we incorporate the findings of Nidumolu et al. (2009), as they argue that sustainability can be the key driver for innovation. The authors argue that firms, which have become aware of the importance of sustainability – and thus have begun embedding sustainability into the core of their business – go through five stages of change, where each stage entails different challenges. The five stages partly provide us with knowledge of where an innovation lab might be in their voyage to sustainable practices, but it also provides us with a stage-model proposal of how the innovation labs might move successfully towards sustainability embedded practices.

From this theoretical overview in relation to sustainability, we will go into more detail of the theories and concepts, as to build an improved comprehension of these.

5.1 Elkington and the Triple Bottom Line

John Elkington, author of several sustainability-related books and the originator of the terms 'green growth', 'People, Planet & Profit' and the 'Triple Bottom Line', defines sustainability as: "the principle of ensuring that our actions today do not limit the range of economic, social and environmental options open to future generations" (Elkington, 1999, p. 20). In his definition, Elkington (1999) sets the scene for the concept of the TBL, which abstains from the notion of sustainability as 'greening' of businesses by improving efficiency and cutting costs (Elkington, 1999). Elkington (1999) recognizes the importance of businesses in the quest for creating a sustainable global economy, as he refers to Stuart Hart's[11] contemplation on the root of all the varieties of crisis we face, which are: "political and social issues that exceed the mandate and capabilities of any corporation" (Hart cited in Elkington, 1999, p. 71). Though, a paradox is apparent: "At the same time, corporations are the only organizations with the resources, the technology, the global reach, and, ultimately, the motivation to achieve sustainability" (Hart cited in Elkington, 1999, p. 71). The motivation of firms, in Hart's statement, is entrenched in how these occurring and emerging issues can impact the economic bottom line of firms (Elkington, 1999).

The TBL should be perceived as three equally important bottom lines (a social-, environmental- and economic bottom line). The concept of 'bottom line' is derived from the language of accounting, where the bottom line is referring to the profit figure in a firm's financial statement (Elkington, 1999). The three bottom lines are dynamic, as they are under e.g. social, environmental, political, ethical and economic pressures, cycles and conflicts. Thus, the sustainability challenge is to treat all of three bottom lines with equal attention, because they are influencing each other in this dynamism towards wealth creation (Elkington, 1999). Elkington (1999) refers to the three bottom lines as continental plates to clarify that the bottom lines influence each other. When a continental plate moves, it affects the surrounding plates in some way or another. Elkington (1999) makes the argument that when the plates move over, under or against each other, 'shear zones' emerge. What occurs in the 'shear zones' resembles some of the most critical sustainability challenges (Elkington, 1999). In the following we will go deeper into the characteristics of the three bottom lines separately, and we will account for some of the sustainability challenges emerging from the 'shear zones' identified by Elkington (1999).

[11] At the time (1997) director of the Corporate Environmental Management Program at the University of Michigan.

5.1.1 The Three Bottom Lines

The economic bottom line refers to what is normally understood as '*the* bottom line' in a business context, though, in a context of sustainability in business, it demands that business people ask themselves e.g. whether or not their costs are competitive – also in the future? How the demand for their products is sustainable, and whether their rate of innovation is competitive. Firms *should* take on a long-term perspective, as today's accountants appear somewhat short-term-oriented by complying with the norm of a twelve-months accounting period (Elkington, 1999). Elkington (1999) criticises the absence of so-called 'externalities' in economic accounting, as these can have devastating impact on the social, economic and environmental bottom lines, as they are perceived as a cost, though not accounted for (more on the concept of externalities, see e.g. Callon, 1998). In the 'shear zone' of the economic and environmental bottom lines emerge challenges such as eco-efficiency, ecological tax reform, shadow pricing etc. (Elkington, 1999).

The environmental bottom line is closely related to what Elkington (1999) refers to as 'Natural Capital', which is an extremely complex concept, as it involves the entire natural wealth of the environment. For instance, the natural capital of a forest includes far more than just the apparent price of lumber a company can produce at. It is crucial to take into consideration "the underlying natural wealth which supports the forest ecosystem (…)" (Elkington, 1999, p. 79). The underlying natural wealth might include soil, carbon dioxide, methane, water usage, animal habitat etc. Natural capital can be considered in two forms: One that is essential to the maintenance and future prosperity of ecosystems and life. The other embraces the renewable, replaceable and substitutable natural capital. Examples thereof might be the breeding or relocation of ecosystems, and replaceable or substituted natural capital might be the case of using solar panels instead of fossil fuels (Elkington, 1999). Moving towards sustainable practices of a firm, relates in consequence to how its operations can legitimately proceed without further damaging ecosystems. A starting point for the transition could be that firms begin looking into substitutes in regards to fuels, operational procedures impacting negatively on the environment and other processes in firms' operations that possibly could be substituted by more environmental friendly processes.

Companies are often held accountable for their environmental performance, either by legislation or by external pressures from stakeholders such as media, consumers, and environmentalist groups for instance. Multiple practices of environmental reporting have emerged in business, although, indicators used to measure sustainability against are often related to volume,

waste produced per unit or value of production, whereas almost no firms report on indicators that are found within the social and environmental 'shear zone'. Indicators detected by Elkington (1999) in this 'shear zone' are e.g. environmental justice, environmental literacy and training, environmental refugees and intergenerational equity (Elkington, 1999). In order for businesses to report in relation to environmental performance measured against ecosystem indicators, it is certain that national and international government agencies and research organisations will play a pivotal role, as current environmental management systems are insufficient to grasp the depth of natural capital (Elkington, 1999).

The third bottom line is concerned with social capital, which partly consists of human capital resembling public health, education and skills. However, companies pursuing sustainability would also have to embrace a wider scope of society in terms of health and wealth-creation. Social capital is a measure of: "the ability of people to work together for common purposes in groups and organizations" (Fukuyama cited in Elkington, 1999, p. 85). According to Elkington (1999) this ability will be essential in the sustainability transition of firms and societies in general, since e.g. employees working within a common set of ethical norms towards a common purpose will result in doing business at a lower cost. A team of employees working in such circumstances can more easily innovate organizationally, as social relationships will emerge as a result of lower social friction and increased trust (Elkington, 1999). Similarly, collaboration between firms and governments, NGOs and citizens will arguably show fruitful, as legitimacy of projects will increase proportionally with how many entities are involved in projects. In other words, it is quite clear that a community would easily embrace a firm led initiative if the community had been involved in the process of making the initiative.

Taking on a long-term perspective is equally crucial for firms in relation to the social bottom line, since a short-term perspective on what a company should do in this regard might result in problems in the long-run (Elkington, 1999). Elkington (1999) exemplifies this with a company facing the challenges of having to outsource production abroad, considering the economic bottom line, while at the same considering the social bottom line, as such a decision will impact greatly on employees. Outsourcing production might also impact the environmental bottom line, which illustrates the complexities of the TBL agenda.

There has been a major shift within reporting on social capital from narrowly focusing on stakeholders that are directly affected by a given company, to also considering indirectly affected stakeholders. The broadening perspective on stakeholders is an increasing trend (Elkington, 1999). In social accounting, firms need to assess topics such as product safety, education initiatives, poverty alleviation etc. Although it appears to be somewhat easy to communicate which positive initiatives a firm has introduced to a community, it has historically shown difficult to capture social costs. However, indicators of performance in this regard are e.g. animal testing, impact on indigenous people, involvement in nuclear power, irresponsible marketing etc. (Elkington, 1999).

In the economic and social 'shear zone' emerges issues related to e.g. fair trade, business ethics, human and minority rights, stakeholder capitalism and the social impacts of investments (Elkington, 1999).

Elkington (1999) argues that measuring each of the triple bottom lines against specified indicators can visualize progress of a firm's quest towards sustainability, though, the challenge is to do this in an integrated manner, where all of the three bottom lines are considered in relation to each other, as mentioned earlier, they so heavily influence each other, why they should be considered as integrated. Hence, the complexity multiplies manifold. Reporting, auditing and accounting will, according to Elkington (1999), be the predominant tools in simplifying and enabling the visualisation of the progress and transparency of a firm in regards to its TBL (Elkington, 1999).

5.2 The Sustainability Sweet Spot

Elkington (1999) accounts for how sustainability can be perceived and measured in a business context in detail. Andrew W. Savitz (2007) perceives the sustainable company quite similar as he adopts the notion of the TBL, but in a more broad sense, as the sustainable firm is an entity that operates to ensure its benefits flow to all stakeholders (Savitz, 2007). We have included Savitz' (2007) take on the sustainable firm, as he visually depicts where the sustainable firm operates. He articulated the concept of 'the sustainability sweet spot', which illustrates where a sustainable firm in a capitalistic system can thrive, resulting in sustainable innovations (see fig. 7).

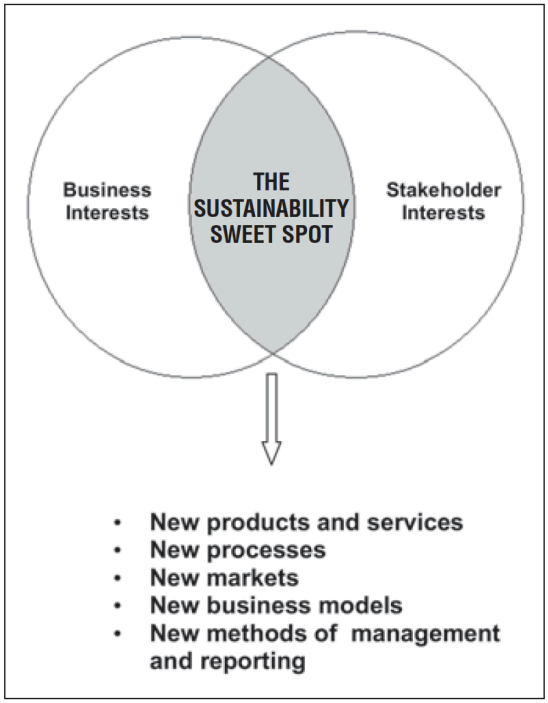


Fig. 7 – Visualisation of the sustainability sweet spot

(Source: Savitz, 2007, Exhibit 1 The Sustainability Sweet Spot, p. 18)

As illustrated, firms are sustainable, when they take all stakeholders' interests and the interests of the business itself into consideration as a fundamental part of its firm identity. Achieving the position within the boundaries of the sustainability sweet spot will provide long-term advantages over competitors (Savitz, 2007). To clarify how each action of a firm impacts profit and citizens within a society in some form or manner, Savitz (2007) has developed a sustainability map (fig. 8) to visualize how companies' actions and the impact thereof can move the firm towards the sustainability sweet spot.

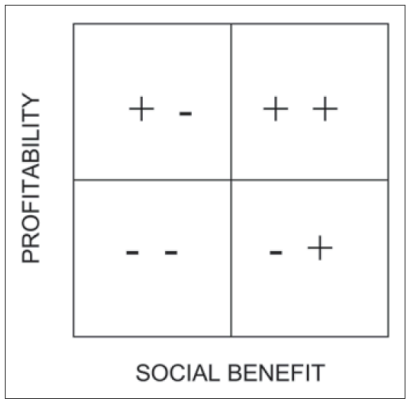


Fig. 8 – Sustainability map

(Source: Savitz, 2007, Exhibit 6 The Sustainability Map, p. 21)

Savitz (2007) claims that both small as well as larger companies have "changed their businesses to move further toward the northeast corner of the sustainability map" (Savitz, 2007, p. 21), which resembles the sustainability sweet spot. Set out to validate his claim of companies adopting the sustainability agenda, thus, operating within the sustainability sweet spot, Savitz (2007) refers inter alia to president of Dow Jones Indexes, John Prestbo's statement: "Companies pursuing growth in the triple bottom line tend to display superior stock market performance with favorable risk-return profiles" (as cited in Savitz, 2007, p. 22). Besides the 'hard side' of sustainability – the financial benefits – there exists a 'softer side' to sustainability. 'Soft' aspects of sustainability might be employee satisfaction, which in turn, when prioritized by management, will result in substantial economic benefits, which resembles Elkington's (1999) notions regarding the social bottom line. Other aspects relate to e.g. customer goodwill and company reputation (Savitz, 2007). In other words, the north-east corner of fig. 8 resembles the situation where Elkington (1999) argues that a firm attends equally to each of the three bottom lines.

5.3 Sustainability-Oriented Innovation

With a consensus of companies needing to adopt sustainable practices, the theory of Sustainability-Oriented Innovation (SOI) conceptualizes how innovations play an essential role in transitioning businesses towards sustainable practices. Though, little agreement exists within the theory on how SOI is ideally conceptualized. Adams et al. (2012) have provided guidance on how firms can make this transition in the context of SOI based on reviewing 100 peer-reviewed academic journal articles

and 27 non-academic sources (Adams et al., 2012). Adams et al. (2012) found that there exist two main schools of thought within the theory of SOI. One that perceives SOI as a series of small incremental changes towards becoming sustainable. The other is convinced that more radical changes are needed. The authors have illustrated these different perceptions as shown in fig. 9, where they term the context of incremental steps towards greater change 'operational optimization'. Radical change towards sustainable practices is labelled 'systems building'. The premise of Adams' et al. (2012) comprehension of the SOI theory is the desire and need to move towards the context of systems building. To make the move from operational optimization to systems building, a need of "(…) an abrupt step-change, both in mindset and behaviour (…)" (Adams et al., 2012, p. 8) emerges, which the authors argue is to occur in a context between the two aforementioned contexts. This in-between-context is dubbed 'organizational transformation' (Adams et al., 2012).

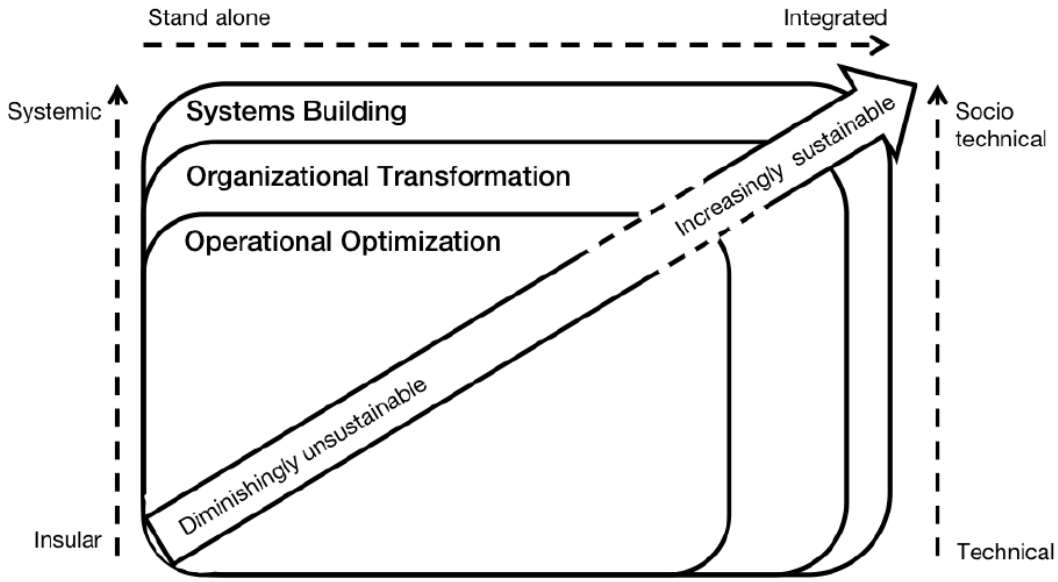


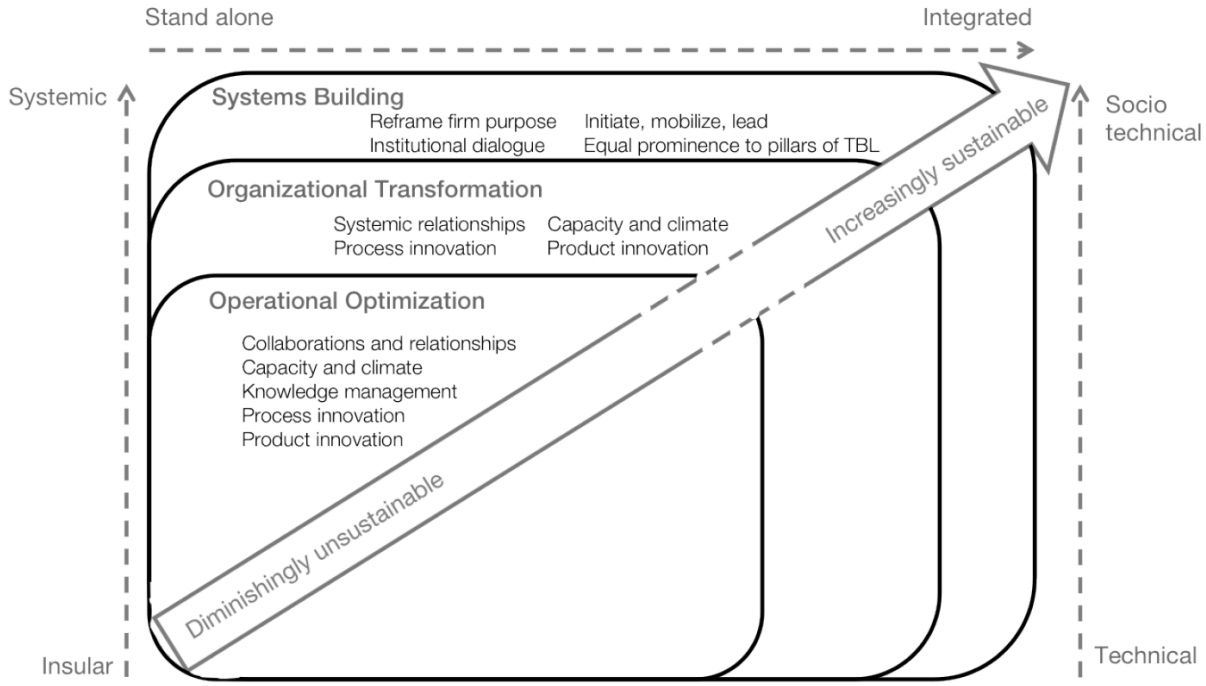
Fig. 9 – Three contexts of SOI

(Source: Adams et al., 2012, Figure 1, Three Contexts of Sustainability-Oriented Innovation, p. 9)

Founded in the thinking of Elkington and his notion of the TBL, current SOI theory differs from conventional innovation practices, as it holistically integrates sustainable measures such as social, environmental and economic sustainability. As firms move closer to systems building, they increasingly need to not only integrate these measures into the core of their business, but also make sustainability the aim of the firms' purpose. They move from focusing solely on technological innovations to socio-technical innovations, fused with the company becoming systemic as opposed

to insular. The firm starts to see itself as part of a wider system in society. Moreover, a firm must strive to integrate innovation throughout the organization, instead of viewing innovation as an additional activity to the firm's main operations (Adams et al., 2012).

In the following, we will briefly touch on the three contexts as explained by Adams et al. (2012), to establish a deeper understanding of how businesses might move towards systems building, hence, more sustainable practices through a series of activities, which can support us in identifying how the innovation labs embed sustainability into their innovation processes. These activities can also be seen in relation to how firms position themselves within the aforementioned sustainability sweet spot. Adams et al. (2012) have exhibited some of the categories of innovation activities firms take on, depending on their situational context (see fig. 10) (Adams et al., 2012). Moreover, we will exhibit some of the dimensions firms might experience when moving from one



context to another.

Fig. 10 – Themes of innovation activities in the SOI contexts
(Source: Adams et al., 2012, Fig, 2, Categories of Innovation Activities in the Three contexts of Sustainability-Oriented Innovation, p. 17)

5.3.1 The Context of Operational Optimization

The focus of a firm situated in the operational optimization context will be concerned first and foremost with complying with regulations, i.e. a firm's innovations in this context will often be reactive rather than proactive. However, some firms, in this context, will innovate proactively, as to go beyond compliance, though, this change from reactive to proactive innovation usually occurs when reactive innovations show to be either economically unfeasible or when sustainability is viewed as an opportunity rather than a risk (Adams et al., 2012). Here, companies' focus is "predominantly internal: inward-looking, risk-reducing and efficiency-seeking" (Adams et al., 2012, p. 23).

Collaborations are important in the operational optimization context, because firms need to cooperate when they lack the necessary means to comply with regulations. Additionally, firms need to collaborate with various stakeholders as to increase or maintain their legitimacy to operate, but also to seek out customers' sustainability concerns, as to add increased value to products (Adams et al., 2012). As companies in this context are in pursuance of optimizing operations, a firm's supply chain should be assessed with supply chain management systems to ensure that they are sustainable, since such efforts would result in optimized operations. Life-cycle analysis (LCA) tools as well as environmental management systems should be employed to integrate sustainability into operational processes. Processes should be designed for sustainability, as to engage in incremental innovation, hence, single issues can be addressed (e.g. carbon-dioxide control might be addressed by innovating new processes that consider new ways of managing resources such as waste and pollution) (Adams et al., 2012). The rationale behind this context is that of reducing the environmental impact of product manufacturing results in decreased energy-related costs. Ultimately, the 'green' aspect of products should be integrated early in innovation processes, though; functionality should not be compromised (Adams et al., 2012). In general, company communication should shift towards a focus on sustainability, since sustainability has become one of the main principles of the firm in this context (Adams et al., 2012).

The intention of why sustainability becomes an important part of the firm, and how a firm decides to practice such principles, is what sets a firm in this context apart from a firm in the context of organizational transformation.

5.3.2 Moving towards Organizational Transformation

Companies moving into the context of organizational transformation from the one of operational optimization might experience that they become more systemic, i.e. they perceive themselves to a greater extend as a part of society. Firms become increasingly interested in how they are connected to their surroundings. Innovation as a practice becomes an integrated part of the entire firm, rather than a separate activity of a single department. These innovations increasingly consider social and technical aspects, as the firm progresses from reducing harm to deliver benefits to society (Adams et al., 2012).

5.3.3 The Context of Organizational Transformation

Relationships become increasingly systemic in the organizational transformation context, as firms from different industries begin to collaborate, hence, new opportunities emerge. New innovation platforms are created from the systemic relationships, because firms are enabled to anticipate to a higher degree how sustainability can be integrated into larger parts of its value chain, but also how their activities affect other industries. Such innovation platforms might be e.g. 'reverse innovation'[12] or 'resource-constrained innovation' also known as 'jugaad innovation'[13] (Adams et al., 2012).

Executives and management should in this context be committed to the sustainability agenda, why these values and goals of sustainability have to be communicated throughout the organization, yet it is equally important to encourage employees to participate in a democratic deliberation concerning these goals and values. The democratized communication might inspire employees to experiment and find new solutions to environmental and social issues. A great amount of energy should be put into unlearning out-dated capabilities by replacing them with new and sustainability-improved capabilities. This could be achieved by collaborating with various relevant stakeholders, but also by tapping into local talent pools, as to apply new perspectives on issues and design activities. In addition, values and goals related to the sustainability commitment should be incorporated into the business model of the firm, which consolidates the earnestness of the values. Some of the characteristics of new business models integrating sustainability are according to Adam et al. (2012), referring to Stubbs & Cocklin, involving inter alia defining a firm's purpose in

[12] Reverse innovation is characterized by a 'trickle-up effect, where innovations are first tested and used in developed countries, after which they are applied in developing countries (Adam et al., 2012).

[13] Resource-constrained innovation or jugaad innovation is characterized by simply reducing resource inputs, as to reduce the cost of the end product without compromising its quality (Adams et al., 2012).

connection to the TBL, and use the TBL approach to measure performance, which correlate with the notions of Elkington (1999). Furthermore, sustainability integrated business models should stress the necessity of stakeholder engagement and collaboration, as it will encompass both a systemic and a firm level perspective (Adams et al., 2012).

Corporate governance should be based on these goals and values, and take its outset in the revisited business model, and it should be visible in the firm's financial reports with respect to increased transparency, but also with the purpose of exhibiting that sustainability is a key concern for Chief Financial Officers (Adams et al., 2012). A new mode of governance is the 'B Corporation'[14] (hereafter B-Corp), which is committed to provide social benefits besides creating profits for shareholders. The B-Corp addresses the difficulties of current corporate law when firms wish to consider interests of the environment, employees and the greater society it operates in. The mode of governance also addresses the lack of standards associated with transparency, which makes it increasingly difficult to distinguish between companies that do good as opposed to making alluring marketing (Adams et al., 2012). The B-Corp also offers an assessment tool in regards to how a firm is doing in terms of certain sustainability parameters (B Corporation, 2017). The assessment tool could inter alia function for innovation labs as the 'go-to' tool, when they were to innovate new business models for clients.

Besides embracing the B-Corp criteria, innovation labs could adopt innovation process platforms that consider the dimensions of the TBL. Such platforms could be conceptualized around *cradle-to-cradle* innovation, where innovations are designed with the insight of trying to anticipate any unintended consequences an innovation may incur on, as the approach considers each phase in e.g. a product's life-cycle (Adams et al., 2012; McDonough & Braungart, 2013). A move from 'value chains' to 'value networks' appears to be of essence in this context, as: "A wider systems perspective reflects industrial ecology, with business activities and outputs embedded in networks, community, collaborations and partnerships" (Adams et al., 2012, p. 47).

A firm within this context should also take its outset in a vision of the future and work backwards, which yields bold goals for the company. This is also known as 'back casting' in contrast to the norm of 'forecasting' in the world of business, which relies on building on existing modes of operation. The benefit from back casting is that it allows innovators to work backwards to

[14] An association of companies committed to a declaration of interdependence (concerning standards of social and environmental performance, transparency and accountability) known as the 'B Corp' has created a 'B Corp Certification' scheme to make the distinction between companies easier (B Corporation, 2014).

determine which measures that have to be taken in order to accomplish the articulated goals (Adams et al., 2012).

Firms should as often as possible make an effort in replacing products with services, which would help alleviate the exaggerated consumption of products. Re-education of customers might be necessary in this transition because of most customers being accustomed to ownership (Adams et al., 2012). Adams et al. (2012) argue that observing nature might solve sustainability issues in product innovation. From these observations new design principles such as biomimicry could be extracted (Adams et al., 2012). The central point of biomimicry in relation to product innovation and new business models is that: "nature does not degrade the systems it relies on to survive" (Adams et al., 2012, p. 51). Innovation labs might not be manufacturers of products, however, if an innovation lab truly had embedded sustainability into its innovation processes (i.e. being in the transformational context and moving towards systems building), they would attempt moving their clients from manufacturing products to offering services, or at the very least offer innovations to clients that would consider the TBL and perhaps integrate biomimicry into their comprehension of design.

5.3.4 Moving towards Systems Building

Adams et al. (2012) have found no companies operating solely within the context of systems building, why they perceive this context as aspirational, i.e. companies should aspire to be in this context (Adams et al., 2012). System builders are inclusive and derive novel value propositions from entire ecosystem value networks, where businesses take responsibility towards the environment, employees, citizens and entire communities. Firms who aspire to be systems builders should also leave behind the traditional economic paradigm, which besides radical organizational change, demands "a readiness to sacrifice short-term self-interest for long-term community and environmental benefit" (Adams et al., 2012, p. 55). By working with governments and civil society, system builders should be participating in changing entire systems and infrastructures towards sustainability. Hence, the purpose of a systems builder is to make a net positive impact, which calls for the firm to adopt an ethical standpoint that reflects its operations, relationships and purpose. Thus, the essential role of a firm aspiring to operate within this context is to initiate, encourage, mobilize and lead the systemic change that requires equal attention to all aspects of the TBL (Adams et al., 2012).

5.4 Five Stages of Change

Nidumolu, Prahalad and Rangaswami (2009) found, through researching sustainability initiatives at thirty corporations, that "sustainability is a mother lode of organizational and technological innovations that yield both bottom-line and top-line returns" (Nidumolu et al., 2009, pp. 57–58). Their findings stress the rationale of embedding sustainability at the core of a company, though, the authors find that most CEOs treat sustainability initiatives as part of their company's CSR program, separated from core business objectives. The explanation for this separation of sustainability and business objectives is often based on the perception that a firm faces a 'trade-off' when trying to integrate sustainability into its business, which we previously have touched on. According to Nidumolu et al. (2009), the 'trade-offs' are often related to the claimed cost increase of developing new manufacturing equipment and processes to develop more sustainable products. It also relates to the claim that suppliers cannot comply with transparency requirements or provide sustainable inputs (Nidumolu et al., 2009). Another negative aspect is exemplified by an intense competition in labour costs between companies based in Europe and the US and companies in emerging markets, which pressures the companies in Europe and the US, resulting in reluctance to make the necessary adaption into sustainable practices. Moreover, it is reasoned that customers are unwilling to spend the extra cash on eco-friendly products in a time of recession (Nidumolu et al., 2009). The authors argue that these perceptions are fundamentally wrong, as the positive gain from transitioning into sustainable practices will surpass the assumed negative trade-offs. For instance, becoming more environmentally sustainable by reducing inputs and waste results in lower costs (Nidumolu et al., 2009). Nevertheless, they also recognize that the business landscape in general is changing towards more sustainable products, processes and business models, which will force others in that same direction. Debating the unwillingness of customers to pay for eco-friendly products in times of recession, Nidumolu et al. (2009) argue that sustainable innovation is the key to progress in times of economic crisis, since new sustainable companies will emerge and thrive in such times, seeing the unsustainability that created the recession the termination of some corporations (Nidumolu et al., 2009).

Based on their empirical findings, Nidumolu et al. (2009) propose that companies that have begun the voyage into placing sustainability at their core pass through five stages of change, which we will touch on in the following sections. In the succeeding analysis, we will consider the innovation labs from our research sample in connection to the five stages, which then will provide

us with some comprehension of which actions a given innovation lab might take towards embedding sustainability into its innovation processes, which we will discuss in chapter 9.

5.4.1 Perceiving Compliance as Opportunity

Complying with each set of norms and legislations in all markets a firm is involved with is difficult and resource consuming, whereas creating a single standard for all markets that complies with the most stringent rules will result in competitive advantage in other markets (Nidumolu et al., 2009). Additionally, companies should at this stage turn legislators and regulators into allies, as to lead the way into sustainable practices, which might provide first-mover advantages (Nidumolu et al., 2009). By adopting stringent regulations from one market into other markets, an opportunity to experiment and position oneself as market leader in relation to sustainability emerges, as well as it can create a 'jump-off' point of departure for firms to innovate towards going beyond compliance.

5.4.2 Making Value Chains Sustainable

In the next stage, companies have already adopted a sustainability mind-set by complying with stringent regulations, why the company should find it natural to focus on making operations sustainable. Nidumolu et al. (2009) argue that firms can achieve this by analysing each link in the company's value chain, which can be done through life-cycle assessments, energy footprint analysis etc. In addition, operational innovations play a crucial part in making a firm's value chain sustainable. Operational innovations can reduce dependency on fossil fuels, as well as lead to increased energy efficiency. Equally important is the possibility of reusing returned products, and the possibility of employees working from home from time to time, as it results in resource savings from transportation. The overall assessment of a sustainable value chain will result in benefits of becoming more energy efficient and waste reductive (Nidumolu et al., 2009).

5.4.3 Designing Sustainable Products and Services

In the context of more customers wanting eco-friendly products, companies should realize that they could outperform their competitors by designing new or redesigning products to meet market needs for sustainable products.

Designing sustainable products demands companies to "(…) understand consumer concerns and carefully examine product life-cycles" (Nidumolu et al., 2009, p. 63). Nidumolu et al. (2009)

add that companies also need to collaborate with nongovernmental organisations, which can increase the credibility of such new sustainable product designs (Nidumolu et al., 2009).

5.4.4 Developing new Business Models

At the fourth stage of reaching sustainable innovation practices, executives "must learn to question existing models and to act entrepreneurially to develop new delivery mechanisms" (Nidumolu et al., 2009, p. 64). New business models must be created, which requires "exploring alternatives to current ways of doing business as well as understanding how companies can meet customers' needs differently" (Nidumolu et al., 2009, p. 64). An important aspect of rethinking business models into sustainable business models is not only to focus on a new value proposition, it is also to consider new ways of operating in tandem with other companies. Consequently, reducing costs and environmental impact (Nidumolu et al., 2009).

5.4.5 Creating next-practice Platforms

By questioning implicit assumptions behind current business practices, executives can set in motion the development of new innovations, which can lead to next practices. Historically, companies and people have changed the norm by questioning the status quo, and sustainability can lead to novel next-practice platforms (Nidumolu et al., 2009). Nidumolu et al. (2009) exemplifies a next-practice platform by mentioning the interweaving of the internet and energy management called the 'smart grid', where technology plays a crucial role in transmitting, managing and distributing energy (Nidumolu et al., 2009).

Having laid out the applicability and proposed use of the accompanied theoretical framework, and the exhibition of a deeper explication of the theories chosen for the framework for the succeeding analysis and discussion of the thesis, we now turn to the methodological considerations in relation to our empirical research of the thesis.

6. Methodology

To initiate the discussion of our methodological considerations, we will first discuss our research paradigm; second, describe the design of our research; and third, present our considerations in relation to methodology. Subsequently, we will discuss our data collection method, some ethical considerations and finalize the chapter by touching on the interview guide employed as a tool to conduct semi-structured interviews.

6.1 Research Paradigm

The research paradigm employed in our qualitative research is within that of *social constructivism* - social realities are constructed in and through meanings. Within this paradigm, it is fully acknowledged that when examining a problem, it is difficult to comprehend or see the whole picture, or as Berger and Luckmann (1966) articulate it:

> Because they are historical products of human activity, all socially constructed universes change, and the change is brought about by the concrete actions of human beings. If one gets absorbed in the intricacies of the conceptual machineries by which any specific universe is maintained, one may forget this fundamental sociological fact. Reality is socially defined. But the definitions are always embodied, that is, concrete individuals and groups of individuals serve as definers of reality (Berger & Luckmann, 1966, p. 134).

When conducting qualitative research, we embrace that multiple realities exist ontologically (Creswell, 2007), as reality is socially constructed by the individuals in our research sample. The idea of multiple realities also comes to light as the findings in our research sample are subject to our interpretation, which is inflicted by our realities. Meaning or knowledge is produced through social interactions between individuals or groups of individuals epistemologically, and they are subjective and value-laden (Tracy, 2013). Moreover, the socially constructed meaning or knowledge is also influenced by the contexts of the individuals interacting (Berger & Luckmann, 1966). The social construction of language and shared meanings are interpreted and understood through these social interactions and we assume that there are many different assumptions of the same data and world views, and we are aware that we cannot fully comprehend the complexity of the lived experiences of others. In other words, we are aware – being the researchers – that this thesis exhibits our interpretations of the interactions, which occurred when we interviewed the subjects in our research

sample. Doing research within social constructivism is often referred to as 'interpretive research', because the task for the researcher is to interpret or make sense of the meanings provided by others (Creswell, 2007). From the social constructivism paradigmatic perspective, we will rely on the individuals' views and statements, knowing that what is communicated is interpreted by us as researchers, which is dependent on our historical and cultural context (Creswell, 2007).

6.2 Research Design

The design of our research is first and foremost centered on our quest to obtain an overview of how innovation labs in the city of Copenhagen perceive sustainability and how they work with sustainability in their innovation processes. Next, we discuss how sustainability might be embedded into innovation processes based on our empirical data. In order to create the overview of perceptions on sustainability, we firstly sensitized[15] concepts of sustainability and innovation from various academic literature, which served as "jumping-off points or lenses" (Tracy, 2013, p. 28) for our qualitative research. By having established a knowledge base of the two main concepts of interest, we began our research with searching for innovation labs within the limits of the city of Copenhagen regardless of their perception of sustainability. We did this initial research by performing searches via Google's online search engine in combination with informally speaking to people that we knew, who might know of innovation labs in the city, which might not have resulted in an exhaustive inclusion of all labs existent in Copenhagen. However, the search resulted in Appendix 1, which is entirely based on information retrieved from the innovation labs' websites. We then set out to conduct semi-structured interviews with at least one person from each identified innovation lab. The intention was to interview the CEO or an employee who could be considered part of management, and another employee without managerial or leadership responsibilities. Reasons for this will be explained later, as will our methodological considerations in relation to constructing and conducting the interviews.

6.3 Qualitative Research

Previously touched upon, the research of this thesis is qualitative, which Creswell (2007) defines as follows:

[15] "Sensitizing concepts are theories or interpretive devices that serve as jumping-off points or lenses for qualitative study" (Tracy, 2013, p. 28).

> *Qualitative research* begins with assumptions, a worldview, the possible use of a theoretical lens, and the study of research problems inquiring into the meaning individuals or groups ascribe to a social or human problem. To study this problem, qualitative researchers use an emerging qualitative approach to inquiry, the collection of data in a natural setting sensitive to the people and places under study, and data analysis that is inductive and establishes patterns or themes (Creswell, 2007, p. 37).

Specifically, for our utilization of qualitative research, has been that we conducted 15 semi-structured interviews (one interview at each innovation lab, except two interviews at Space10) within a period of approximately two a half months ranging from February to April 2017. The interviews were conducted as a means to obtain information from the interviewees, which we intentionally conducted in their natural setting – at their work places. Creswell (2007) argues that information gathered by meeting and speaking directly to people is a major characteristic of qualitative research (Creswell, 2007). Though, in two instances we have conducted interviews via telecommunications (Skype and telephone) as per request of the interviewee. Interviewing individuals in their natural professional setting should enable a dialogue, where the interviewees would partly speak on behalf of the company they work for, but also on their own behalf when asked to do so – specifically, when asked about their perception of sustainability. Besides taking into account interviewees' immediate surroundings, a broader sense of context has to be considered by the researcher, as to build up a better understanding of their life world (Creswell, 2007; Tracy, 2013). While interviewing some of the individuals in our research sample, we noted that many of them placed themselves in a 'Danish context' of knowledge about issues relating to the climate, and to the transition from unsustainable energy to sustainable energy sources (see e.g. Climate Unit, 2017; Spark CPH, 2017). The placement of themselves within a context of being knowledgeable about certain topics as a result of living in Denmark and being Danish, is interesting, because it provides us with a possibility to create patterns among the innovation labs, as well as it may be the result of institutional influence, bearing in mind the climate plans set forth by the Municipality of Copenhagen accounted for earlier. Considering a so-called 'Danish contextual understanding of sustainability efforts' penetrates directly into our social constructivism paradigmatic perspective, as it implies several implicit understandings that might only be true for those who belong to that specific social group.

Tracy (2013) explains qualitative research by exhibiting the contrasts that appear when compared to quantitative research:

> "In quantitative research, the research instrument and the researcher controlling the instrument are two separate and distinctly different entities. (…) in qualitative methods the researcher *is* the instrument. Observations are registered *through* the researcher's mind and body (Tracy, 2013, pp. 24–25).

Additionally, Tracy (2013) argues that when conducting qualitative research, it becomes important for the researcher to self-reflect on one's goals and potential biases. While creating an interview guide, which we will discuss in a later section, we tried to our best ability to reflect on the goal of asking each question we added to the interview guide, as to clarify to ourselves which implications each question would have. Similarly, we tried to formulate questions as to overcome bias, however, we wrote questions in a sequential manner, as to provide ourselves with a method to guide the interviews. In other words, we would have questions in our interview guide that presupposed some knowledge about certain topics, though; these would only be included in the actual interview if they were found suitable to ask – depending on the interviewees' knowledge base. Simms (2008) argues that it is important for the success of the interview that the researcher finds a way to establish how profound an interviewee's knowledge base is on a given topic (Simms, 2008).

The decision to employ a qualitative approach for conducting our research is based on the notion of complexity in the concept of sustainability, which we ask interviewees about, but also because we want lengthy answers from interviewees. We have previously established that there exists no single definition of sustainability, which arguably validates the method, because by employing a qualitative research approach we can assure that no certain truths are expected, which otherwise might position the interviewees in a situation where they would be unable to answer. For instance, it is hard to conceive the usability of a questionnaire asking how a respondent *perceives sustainability*, as one could imagine the results would be quantifiable, but rather ineffectual, when the purpose of such an endeavour is to establish varieties in perceptions, and whether there exists a shared language of sustainability within and among the innovation labs. The choosing of the qualitative research approach enables interviewees to bring forward lengthy answers, which positively enriches our research sample. Moreover, it allows for notions to emerge that otherwise would have been unknown to us, if a quantitative research approach was employed.

6.4 Data Collection Method

We began, as mentioned, our research by searching for innovation labs on the Internet, which led us to the identified innovation labs (see appendix 1). As an initial research, we investigated all of the innovation labs' websites, which served as our secondary sources of information. The secondary sources were used to establish some basic knowledge of the innovation labs, and the information on their websites were used to index and categorize the innovation labs into three different subjectively articulated types (referring to the categorizations: (1) Private external; (2) Public; and (3) Independent hub).

As our primary source of information, we conducted 15 semi-structured interviews within the faculties of the qualitative research approach. The style of semi-structured interviews was chosen because of considerations regarding the questions we wanted to be answered by the interviewees. Simms (2008) argues that interviewees might be reluctant to disclose information, if the style of the interviewer is too directive and structured (Simms, 2008), why we chose to semi-structure the interviews, as we had planned – but not fixed – questions pre-made prior to conducting the interviews. The complexity of concepts such as sustainability and sustainability in relation to innovation made it seem reasonable to leave space for unstructured conversation during the interviews. The semi-structured interview style also made it possible for us and the interviewees to go beyond the pre-made questions in conversation, which might have provided information that otherwise might not have appeared.

A qualitative research interview is, according to Kvale and Brinkmann (2015), not just a conversation between two equals, even though that could be one way of conducting an interview, but we as interviewers introduce a topic and form, which control parts of the interview, which the authors label 'the semi-structured interview'. Kvale and Brinkmann (2015) define the interview style as: "(…) an interview with purpose of obtaining descriptions of the lifeworld of the interviewee in order to interpret the meaning of the described phenomena" (Kvale & Brinkmann, 2015, p. 6). The process of conducting interviews within the qualitative approach and social constructivism is a production of interpretable knowledge through dialogue between the interviewer and the interviewee, which relates to and is dependent on context, linguistics, narratives, and pragmatism. This data collection method is in profound contrast to the positivistic conception, where obtained knowledge can be quantified as facts (Kvale & Brinkmann, 2015).

In relation to the differences between quantifiable questionnaires and qualitative semi-structured interviews, Kvale and Brinkmann (2015) state:

> "(…) it is semistructured – it is neither an open everyday conversation nor a closed questionnaire. It is conducted according to an interview guide that focuses on certain themes and that may include suggested questions" (Kvale & Brinkmann, 2015, p. 31-32).

Kvale and Brinkmann (2015) find that the semi-structured interview can be characterized as phenomenological, as the interview can be experienced through twelve aspects or key concepts (Kvale & Brinkmann, 2015), which we intent not to fully exhibit here, though some of the aspects are presented, as we consider these to be relevant in relation to our data collection considerations. The first of the twelve aspects presented by Kvale and Brinkmann (2015) is *life world*: "The life world is the world as it is encountered in everyday life and given in direct and immediate experience, independent of ad prior to explanations" (Kvale & Brinkmann, 2015, p. 32). Second, *meaning* is related to that the interview tries to obtain meaning of central themes of the interviewee's lived world. Central to all interviews conducted in our research is the attempt to obtain meaning from the interviewees' immediate experiences in relation to their lived experiences working with innovation processes, but also in relation to how they perceive sustainability. The *Focus* aspect relates to the interviewer's focus on themes or topics, framed not with standardized questions, but with open-ended questions. In our interview guide, we have ensured that even if we have asked a question that was not open-ended, we had prepared follow-up questions of 'why?' or 'why not?'. However, none of our questions can, in our point of view, be characterized as standardized, as the questions in the interview guide were often reformulated as a result of a flowing dialogue between the interviewee and us (see e.g. Area9, 2017). *Ambiguity* relates to the interviewers task: "(…) to clarify, as far as possible, whether the ambiguities and contradictory statements are due to a failure of communication in the interview situation or whether they reflect genuine inconsistencies, ambivalence, and contradictions in the world in which they live" (Kvale & Brinkmann, 2015, p. 34). While conducting some of the interviews, we experienced that we posed too long questions, which sometimes resulted in the interviewee asking us to repeat the question (see e.g. Innovationlab, 2017, min. 13:42-14:50). As mentioned earlier, some of the interviewees expressed that being Danish somewhat automatically made it common knowledge that sustainability is important, and something we all need to take into account. However, almost none of the interviewees were able to immediately express what sustainability specifically meant to them,

without imposing any knowledge of the concept beforehand. Simms (2008) argues that letting the interviewee take over the agenda, when the interviewer wants e.g. a definition of a concept explained by the interviewee can be fruitful, since imposing definitions onto interviewees quite possibly steer them in a certain direction (Simms, 2008). The *change* aspect, characterized by Kvale and Brinkmann (2015) relates to when interviewees experience a change in their attitudes towards a theme; or is experiencing the interview as a learning experience, which also can happen to the interviewer. *Sensitivity* entails that: "different interviewers, using the same interview guide, may produce different statements on the same themes, due to varying levels of sensitivity toward, and knowledge about, the topic of interview" (Kvale & Brinkmann, 2015, p. 34). In the interview with Niels from Area9 and Martin from Innovationlab – which were conducted via Skype and telephone respectively – it might be detectable that the interviewers were different, as the interviews were led by the other author of this thesis in comparison to the other interviews. Though, both authors of the thesis were present at all interviews. Practically, one interviewer was in charge of asking questions and keeping the conversation going with the interviewee, whereas the other mainly took notes, listened, and at the end of the interview asked concluding questions, if anything needed to be asked that had not been asked beforehand. To keep the dialogue between the interviewers and the interviewee going, it often occurred that the interviewer mainly taking notes would ask questions for purposes of clarifying statements or if a need for elaboration seemed appropriate.

In relation to the knowledge resulting from an interview, Kvale and Brinkmann (2015) argue that: "(…) interview knowledge can be characterized as produced, relational, conversational, contextual, linguistic, narrative, and pragmatic" (Kvale & Brinkmann, 2015, p. 63). Elaborating on the characterisations, they continue:

> Knowledge as something produced, constructed in the interaction of interviewer and interviewee; relational, arising through concrete human relations; conversational, arrived at through questions, answers, and descriptions; contextual, with the meanings more or less tied to specific contexts; linguistics, carried in the medium of spoken and later written language; narrative, disclosing the storied nature of the lived human world; and pragmatic, ultimately driving its legitimacy from enabling us to cope with the social world in which we find ourselves (Kvale & Brinkmann, 2015, p. 342).

Similar to what Kvale and Brinkmann (2015) characterize as knowledge being produced, Simms (2008) argues that when an interviewee is active and engages vividly in conversation, he or she

might disclose things that her or himself or the interviewer have not considered before, why the knowledge created becomes more a matter of data creation, rather than data collection (Simms, 2008).

As mentioned earlier, we conducted the interviews, physically present, at the interviewees' work place, which can enhance the normalization of the situation for the interviewee, though, we are aware that conducting the interviews outside their professional arena might have provided us with more deliberate and informal answers. One could imagine that some employees might be reluctant to answer bluntly to a question relating to the practices employed at the innovation lab, as loyalty towards employers could be questioned, though, our experience was of the contrary, as it appeared that the interviewees had no problem stating e.g. that their firm did not consider sustainability per se when innovating (see e.g. Designit, 2017, min. 3:10-3:32; IIAB, 2017, min. 4:00-4:46). Moreover, conducting the interviews at the interviewees own territory made it possible for us to get a sense of their situational context, which also influence our perception and interpretation of their utterances. As a result of these considerations, we intended to interview two people at each innovation lab, as a means to overcome restricted or even untruthfully answers from e.g. a CEO who might promote his firm while keeping the image of the firm in mind, rather than critically reflecting on current innovation processes. Regretfully, we did not succeed in interviewing two people of every innovation lab; mainly because of colleagues agreeing that time should be spent efficiently, why only one could take time out of his or her schedule to do the interview. In other instances, it showed that only one person would reply to our initial e-mail requesting an interview. However, we are confident that the interviewees spoke on behalf of the innovation lab where they are employed. We base our confidence in our experiences conducting the interviews, where the interviewees would state when certain points were based on their personal opinion, which might not reflect the opinion of the entire innovation lab, though, our interpretations of their statements often appeared in line with that of the innovation labs. Hence, interviewees' personal opinions were often related to a lack of clear communication or written definitions of concepts within the innovation lab they are employed.

All interviews – regardless of physically meeting the interviewee or communicating via telecommunications – were audio recorded. The implications of recording sound might entail that interviewees would be affected by knowing that their statements would be saved for later use, and potentially be used against them. However, we assured all interviewees that the recordings were

only for purposes of this thesis, and we proposed, if we were to quote any statements made, that we would ask for their permission. Some of the interviewees requested this, whereas others were confident that we could use everything said during the interview.

Intentionally, we have not transcribed any of the audio recordings, as data would be lost in this manner, i.e. that a reader of a transcribed interview cannot hear pauses, tone of voice, exclamations etc., which is possible in audio recordings. Simms (2008) argues in this regard: "An audio recording will give you more information than a transcript on such matters as voice tone and inflexion (…)" (Simms, 2008, p. 118), though he also argues that video recording is superior to audio recordings, as facial expressions, emotions etc. would be somewhat more easy to detect. Yet, the implications of pointing a video recorder at an interviewee could quite possibly be harmful in relation to the comfort of the interviewee and hence, the answers given might be negatively affected. Specifically, we recorded audio via our smartphones, as to enhance the normality of the interview situation. Having our phones placed on the table in front of both the interviewee and us during the interviews did not seem to inflict the potential unpleasant feeling of being recorded. The interviewees' surnames will not be available to the public in general to ensure unwanted exposure, however they will be available for the evaluation of the thesis, which was made clear to the interviewees as to increase the level of comfort for the interviewees. The 15 interviews conducted ranged from 20 minutes to 50 minutes in duration. The difference in duration of the interviews was a result of the situational context. Some interviewees were less keen on conversing due to them being pressured on time, and some interviewees appeared very interested in the subject, why they engaged deeply in the interview.

6.5 Methodological Limitations

Based on the semi-structured interviews, we have created an overview of sustainability perceptions based on the interviewees' statements. Generating knowledge in this manner can be characterized as being inductive, as we set out to generalize perceptions of sustainability from one or two interviewees as being the perception of the entire innovation lab where the interviewees work. Similarly, Tracy (2013) explains that researchers using the inductive approach: "(a) begins with observing specific interactions; (b) conceptualize general patterns from these observations; (c) make tentative claims (…)" (Tracy, 2013, p. 22). Doing research in this manner implies quite broad generalizations, which may produce deranged perceptions of reality, why it is a task for the researcher to ensure that qualitatively obtained statements from interviewees are true to what has

been stated, though, these representations of what has been stated will always be the product of interpretations made by the researcher. If we had employed quantitative methods in combination with the qualitative approach, we might have gotten closer to *a* truth, if say, we took on a positivistic paradigmatic perspective while doing research, we might be able to provide true representations of what an innovation lab would characterize sustainability to be. Arguably, nuances in perceptions would be lost if only quantitative research was carried out. Nevertheless, our research sample might have been relatively richer if we had combined research methodologies. These considerations seem important when contemplating on the methodological choices we have made, as truth – or rather meaning – is created in the interview situation, because we regard reality and what is real as socially constructed in the interaction between the interviewer and interviewee. However, Creswell (2007) argues that interviewers must become aware of the interviewer's own understanding of the topic, that is the focus of the interview, in order to eliminate the interviewer's own bias and underlying motivations to possibly steer an interview in a certain direction that might negatively influence the outcome of the interview (Creswell, 2007). By doing research into the literature on sustainability and innovation before even getting in touch with the innovation labs interviewed, we became aware of all the complexities, nuances and perspectives relating to the concepts, which made us strive not to enclose or direct interviewee's statements while interviewing, since we were aware of e.g. the multiple definitions of sustainability, but to prepare ourselves to be able to engage in the details and complexities of the concepts, if interviewees showed to possess extensive knowledge of the topics.

6.6 Ethical Considerations

Kvale and Brinkmann (2015) also include *interpersonal situation* in their key concepts mentioned earlier, which entails that knowledge is constructed in an *inter*view, hence, there is a reciprocal influence on both the interviewer and the interviewee due to the interaction occurring. This might trigger anxiety and some defence mechanisms with the interviewee, but also with the interviewer (Kvale & Brinkmann, 2015). We should, in the interview situation, be aware of this as an ethical transgression of the interviewee's personal boundaries, but also because how the interpersonal situation plays out will ultimately affect the knowledge being created from the interactions (Kvale & Brinkmann, 2015).

Interpersonal situations require some level of trust between the interviewer and the interviewee, to ensure that knowledge created or produced is not being violated or misused. Kvale

and Brinkmann (2015) argue in this regard: “The knowledge produced by such research depends on the social relationship of interviewer and interviewee, which rest on the interviewer’s ability to create a stage where the subject is free and safe to talk of private events recorded for later public use” (Kvale & Brinkmann, 2015, p. 20). To increase the level of trust between the interviewees and us as interviewers, we initiated the contact to the interviewees via e-mail, where we briefly explained why we were contacting them, and what we wanted to interview them about. A few interviewees requested the interview questions beforehand, which might affect the immediacy of response when asked during the interview, as the interviewee would have had time to prepare an answer. Consequently, we did send – to the ones requesting it – some overall questions relating to the questions in our interview guide, as to avoid bias. Similarly, some interviewees expressed confusion via e-mail, before committing to an interview, regarding what we meant by ‘sustainability’, and that they might not be suitable to be subjected to an interview, as they did not consciously consider sustainability in their work. The confusion expressed emphasized that there might not exist a shared language regarding sustainability within all the labs. We ensured the interviewees that there would be no true or false answers in regards to sustainability, as we wished to know more about their innovation processes, and from there converse about sustainability in general and their perception thereof. Consequently, the interviewees accepted to participate in the interviews.

6.7 Interview Guide

Having mentioned some of the considerations in regards to our interview guide, we wish to briefly elaborate on some of these considerations in this section, since the interview guide played a fundamental part in guiding our interviews, as to obtain answers to the questions we needed answers to. Each semi-structured interview was guided through pre-written questions without avoiding the possibility of the interviewee going beyond the scope of the questions, which can lead to new insights that we otherwise would not have considered. Moreover, the interview guide was created with the purpose of having the respondent answering questions in a non-direct manner, i.e. that we are not interested in ‘yes’ or ‘no’ answers. Schensul, Schensul and LeCompte (1999) state in regards to the qualitative interview: “Do not ask questions that can be answered with a “yes” or “no” when what you really want is as lengthy a description as possible” (Schensul, Schensul, & LeCompte, 1999, p. 155). However, we did manufacture closed-questions in our interview guide, where the respondents could answer ‘yes’ or ‘no’, though, we provided follow-up questions such as

‘why?’ or ‘why not?’ to guarantee lengthy descriptions of the ‘yes’ or ‘no’ answered by the interviewee.

Questions must also be kept at a certain length, and the terminology must be within the domain of the cultural and common language of the interviewee, as to make sure that the questions are understood (Schensul et al., 1999, p. 154). While conducting the interviews, we tried to adjust questions asked to the language of the interviewee, as some were in doubt of the meaning of sustainability, we e.g. tried to relate the concept to some of the examples of innovation given by the interviewees. Additionally, the questions should not be either positive or negative laden, nor should they be double barrelled (Schensul et al., 1999) e.g. ‘what is innovation and sustainability to you?’, and the questions should be sensitive to social meanings and cultural contexts (Schensul et al., 1999). Knowing that all interviews would be conducted with individuals who would answer on the basis of their professional status, we strived to formulate questions that would be understandable and sufficiently sensitive considering the interviewees’ cultural context, which might be characterized as a professional Danish context where some notion of the concept of sustainability arguably would be anything but unfamiliar – empowered by the focus on sustainability by the municipality in which the innovation labs exist.

7. Empirical Findings

The main findings from our qualitative research are presented in this chapter. The findings are presented as our interpretations based on the 15 interviews conducted. In the succeeding analysis and discussion, we will go into more detail with the main findings and the interviews in relation to the theoretical framework of the thesis. As a way to organize some of the qualitatively obtained data, we made a scheme (Appendix 2), which is meant to work as a means to provide us with an overview of the data. The overview in Appendix 2 is partly used to identify the main findings of our research, but it also works as the underlying data of figure 12. Figure 12 is, in other words, the visualisation of our main findings. The scheme (Appendix 2) is in no way exhaustive, why the following analysis and discussion will include data from the interviews that are not included in the scheme.

7.1 Main Findings

Based on the semi-structured interviews, we found that all of the innovation labs in our research sample utilize design thinking as innovation method as it is described by IDEO (previously described in this thesis) or some variety thereof. Specific elements of the design thinking approach to innovate were recurring in all the labs' description of their innovation process: their processes are always based entirely or partly on user insights, rapid prototyping and that the innovation process is inherently iterative, which are central characteristics of design thinking. For instance, Max from Leo Innovation Lab drew for us the lab's innovation process (see fig. 11, which we found illustrated on the lab's website, which resembles what Max drew while being interviewed), which exhibits the similarities to IDEO's design thinking appraoch.

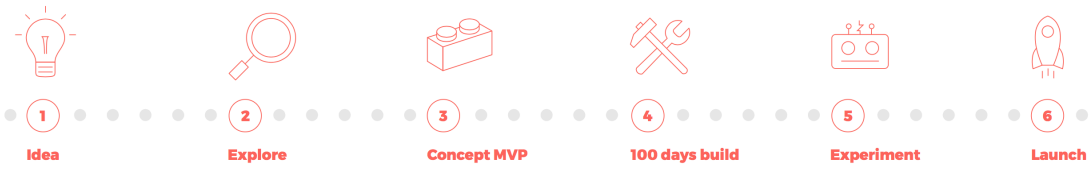


Fig. 11 – Innovation process at Leo Innovation Lab (Source: leoinnovationlab.com, 2017).

In relation to sustainability, we found that there exists no perceptions of sustainability among the identified innovation labs that were entirely alike. Some of the labs (Bespoke, Space10,

Spark CPH and to some extend the Climate Unit under the City development and strategy department (hereafter Climate Unit)) explicitly claim to be working progressively with sustainability parameters in their innovation processes based on shared meanings of sustainability. For instance, Spark CPH who has employed B-Corp metrics as inter alia a means to ensure a shared understanding of what sustainability is within the innovation lab. Contrarily to Spark CPH, we found that the majority of the innovation labs do not have a shared language or have defined sustainability internally.

We encountered some innovation labs (Designit, CHI and Is It A Bird (hereafter IIAB)) that did not consider sustainability as part of their innovation practices, unless clients specifically asked for it. Reasons of why sustainability was somehow neglected at the three innovation labs, were e.g. in the case of Designit that sustainability was seen as intrinsic in the Danish design heritage, why they did not have to explicitly consider it (Designit, 2017). For IIAB it was clear that no means or tools were provided for the employees of the lab to empower conversations about sustainability or to somehow work with sustainability (IIAB, 2017). In the case of CHI, sustainability was considered in relation to the interviewee's previous job (unrelated to CHI), and it was stated that sustainability in CHI's innovation process would be possible, but not something that they had thought of implementing as a natural part of the process. However, a great number of the innovation labs (Hatch & Bloom, Innovationlab, Smith Innovation, Fjord, Area9 and Leo Innovation Lab) are to some extent implicitly working with sustainability in their innovation processes. The implicitness indicates the lack of a shared language of sustainability, but it also points towards what we label a 'Danish context of sustainability', which is a phenomenon that was expressed in one way or another by several interviewees (e.g. Smith Innovation, 2017; Area9, 2017; Hatch & Bloom, 2017). Our interpretation of this context relates to a cultural conditioned understanding of the importance of sustainability – especially regarding the environment. We base this understanding of the context on e.g. the Municipality of Copenhagen's environmental improvement efforts previously accounted for. The Danish context of sustainability somehow enables sustainability to be a part of innovation processes without needing a shared language or shared definition of sustainability internally the innovation labs. Though, we also find that the lack of a shared language in some way inhibits further development into more sustainable practices and problematizes placing sustainability at the core of the firm, as a commitment to sustainability, that is not communicated, seems difficult to consolidate, which we will discuss later in the thesis.

Additionally, we found that sustainability, for the majority of the labs, is driven by clients, except for those labs that have established some form of shared language of sustainability, which appeared to drive sustainability themselves in the tasks given by clients. Many of the interviewees expressed that some clients explicitly hire them to innovate 'better' solutions. In this characterization of solutions, asked for by clients, we sensed, while conducting the interviews, an implicit knowledge inherent in the term 'better' that such solutions have to be less negatively impactful on the environment. In general, it is our perception that most of the innovation labs consider sustainability in relation to innovations' environmental impact, which exemplarily involves reducing waste, awareness of energy use etc., whereas, sustainability in terms of social sustainability is rarely considered at the majority of the innovation labs. Though, Leo Innovation Lab implicitly and Area9 explicitly considered social sustainability, as their innovations were centred on digital solutions purposely remedying social concerns (Leo Innovation Lab, 2017; Area9, 2017).

7.1.1 Identified Innovation Labs in relation to Sustainability Embedded Practices

With the purpose of visualizing the main findings of our research, we have created a 2x2 matrix that comprises all the innovation labs in our research sample (see fig. 12). The matrix has been created to show the positioning of the innovation labs in relation to two criteria: (i) sustainable practices, which refers to which degree a given innovation lab's practices can be perceived as sustainable; and (ii) shared language of sustainability, which relates to whether the labs have established an internally shared language of sustainability. The matrix exhibits four categorizations as ideal types, though we stress that each innovation lab has its own specificities, hence, the position of the labs in the matrix should be seen as relative. However, where the innovation labs are positioned is not random. For instance, the innovation lab Is It A Bird (IIAB) is positioned in the lower left square of the matrix, as we interpret – based on an interview conducted with Peter, employed at IIAB – that the innovation lab does not consider sustainability in its innovation processes in accordance with the sustainability frameworks presented in chapter 5, and that they have yet to establish a shared language of sustainability.

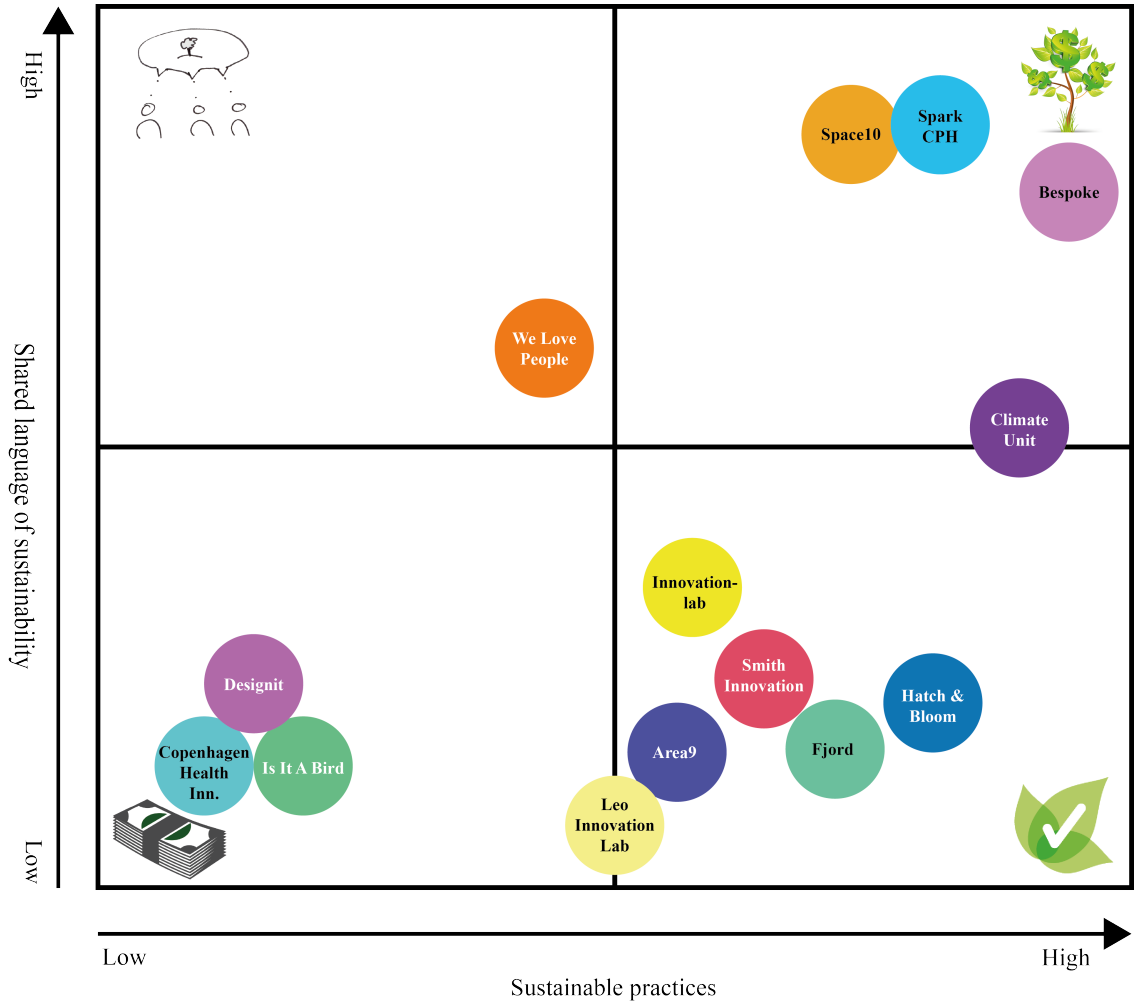


Fig. 12 - Identified innovation labs in relation to sustainable practices and shared language of sustainability matrix (Created by the authors of this thesis)

In the matrix (fig. 12), we have illustrated the two aforementioned criteria and the scope of these (low to high) with a symbol of cash (lower left square), which symbolises that if labs are positioned here, they do not consider sustainability in relation to their practices and they do not have an established language of sustainability. The lower right square resembles innovation labs that do have sustainable practices, yet they do not have established a shared language of sustainability, which is symbolised with green leafs incorporating a tick mark. The upper left square embodies innovation labs that have established a shared language, but have yet to transition their practices into sustainable practices, which the illustration of three people agreeing on a shared language is symbolised by a tree. In the upper right corner is where both criteria of the matrix are high, which indicates that innovation labs positioned here both have established a shared language of sustainability and that practices are perceived as sustainable. This square is illustrated with a

'money tree'. In the following, we will touch on why we have positioned the innovation labs as depicted in the matrix.

8. Analysis

In this chapter, we will analyse our main findings in relation to the previously proposed theoretical framework. The analysis will provide us with an understanding of the identified innovation labs' perception of sustainability and how these perceptions correlates with our perception of sustainability adopted from Elkington (1999) formulating the TBL agenda and Savitz' (2007) definition of sustainability. Moreover, we will analyse the innovation labs in connection to whether they have established a shared language of sustainability, and look into what such a language is based upon. Next, we will analyse how the different innovation labs can be seen in relation to the sustainability sweet spot, the SOI framework and on which stage in the five stages of change model they might be in, in their journey towards becoming sustainable, if at all, which provides us with possible explanations of how the labs embed sustainability into their innovation processes.

8.1 Perceptions of Sustainability

In the forthcoming section, we will analyse how the innovation labs in our research sample perceive sustainability and how these perceptions relate to the labs' practices.

As mentioned in the main findings in the previous chapter, we found that there does not exist identical perceptions of sustainability among the labs. However, some innovation labs explicitly relate their perception of the concept to Elkington's (1999) characterization of the TBL or the 3Ps. For instance, Rune from Bespoke stated:

> In Bespoke, we are working with the three Ps – People, Planet and Profit, so that all our work can live up to both creating value for people, creating value for the planet and also profits in a way of actually making a sustainable business (Bespoke, 2017, min. 5:27- 5:51).

Rune's explanation of Bespoke's perception of sustainability appears rather straightforward when relating it to the notion of the TBL, whereas e.g. Max from Leo Innovation Lab perceived sustainability in more narrow terms of environmental sustainability (Leo Innovation Lab, 2017).

Interestingly, both Leo Innovation Lab and Area9 explicated that their value proposition evolves around digital innovations, why they considered it difficult to take concrete action towards becoming more environmental sustainable (Leo Innovation Lab, 2017; Area9, 2017). Though, Niels from Area9, when elaborating on the lab's take on sustainability, explained that their digital innovations provide sectors such as education and healthcare with sustainable systems (Area9, 2017), which rather palpably shows the social sustainability concern of their innovations. For instance, he explained that their digital innovations make non-digital systems more sustainable, which in the words of Elkington (1999), would be efforts that increase Area9's social bottom line, while at the same time generating profits, thus increasing the innovation labs' economic bottom line. While interviewing Max from Leo Innovation Lab, we found that even though he did not articulate a perception of sustainability in relation to social sustainability, he accounted for the work of Leo Innovation Lab, which to a large extent can be seen as enriching the social bottom line of the lab, as they create digital platforms that supports the clients of Leo Pharma (Leo Innovation Lab, 2017).

The innovation labs (Bespoke, Space10, Spark CPH, Climate Unit and Hatch & Bloom) that perceived sustainability – directly or indirectly – in relation to all three dimensions of the TBL agenda, also considered sustainability in somewhat accordance with our operational definition of the concept: "the place where the pursuit of profit blends seamlessly with the pursuit of the common good" (Savitz cited in Whitfield & McNett, 2014, p. 133). Importantly, we found great differences in whether the labs, as a result of their perception, embed or in some manner work with the perception into their innovation processes. Bespoke, Space10, Spark CPH and the Climate Unit embed their sustainability perceptions into their practices, or it might be the other way around that they were able to explicitly account for their sustainable practices. We found that Hatch & Bloom is working rather sustainably, although the lab in general does not explicitly work with sustainability in its processes, though Mads, who we interviewed from Hatch & Bloom, has made it his mission to transition the lab into more explicit sustainable practices (Hatch & Bloom, 2017), hence, the lab is conceivably on a journey to put words to their practices in relation to sustainability, why we have positioned them in the lower right square of the matrix, where labs to some degree have sustainable practices, yet they are implicitly embedded.

Asger from Designit and Peter from IIAB, both expressed that they had personal opinions regarding the topic of sustainability, but the firm in which they work does not consider sustainability in their innovation processes, why they were having difficulties accounting for the innovation labs' perception of the concept in any terms relating to the TBL agenda. However, both Asger and Peter stated that their labs have taken on projects that considered some sustainability parameters, which were driven by the client (Designit, 2017; IIAB, 2017). Consequently, we have positioned the labs in the lower left square of the matrix, which indicates that the labs do indeed generate revenue, yet it is without considering sustainability and without having an internally shared language of sustainability.

The majority of the labs that we have positioned within the lower right square of the matrix (Innovationlab, Smith Innovation, Area9 and Fjord) perceived sustainability to some extent similarly to Max from Leo Innovation Lab, who expressed a rather narrow perception of sustainability, solely relating to environmental sustainability. Exemplarily, Sofie from Smith Innovation primarily perceived sustainability in relation to the environment, which is quite intelligible since Smith Innovation specializes within innovation in the construction industry, why the lab focuses a great deal on e.g. materials for construction (Smith Innovation, 2017). However, we find that it is arguably plausible that social sustainability could be just as important in the construction industry, as buildings are constructed by human beings for human beings, why several social sustainability parameters could be thought into innovation processes associated with the construction industry. Moreover, Sofie underlines that sustainability for Smith Innovation is closely related to the importance of collaborations, which is fundamental in the lab's continued innovation processes: "working with sustainability in the future needs partnerships between different companies" (Smith Innovation, 2017, min. 3:44-3:58). The emphasis on collaboration in relation to sustainable practices is both expressed by Adams et al. (2012) and Elkington (1999), as the transition into sustainability for firms requires firms to perceive themselves as part of society, and that some parts of such a transition can be facilitated through partnerships (Adams et al., 2012; Elkington, 1999). We have positioned Smith Innovation in the lower right square of the matrix, as a result of their collaborative efforts and focus on sustainability, though the negligence of explicating social sustainability concerns supports that the lab has yet some progress to be made before the lab is fully practicing sustainably considering the theoretical sustainability framework employed in this thesis.

8.1.1 Lack of a Shared Language

Based on the interviews conducted, we found that several innovation labs (IIAB, Designit, CHI, Fjord, Smith Innovation, Area9, Leo Innovation Lab, and Innovationlab) were having some difficulty explaining what sustainability entails in relation to their line of work and how it should be addressed in relevance to their practices. This might be a result of the labs not having concretized or defined sustainability internally, which they all accounted that they did not have. However, this does not necessarily imply that the innovation labs do not embed some elements of sustainability into their innovation practices, as e.g. Mikkel from Fjord and Sofie from Smith Innovation claim that their respective work places work sustainably, but that these sustainable practices remain to certain degree implicit (Fjord, 2017; Smith Innovation, 2017). The same implicit sustainability considerations apply to Area9, Innovationlab and to some degree Leo Innovation Lab, why we have positioned these within or on the border of the lower right square of the matrix (see fig. 12).

Mads from Hatch & Bloom acknowledges that they have no written definition or shared language of sustainability at the lab, which is a challenge (Hatch & Bloom, 2017). The lack of a shared language concerning sustainability appears to be sound for Leo Innovation Lab and Designit, since their value propositions revolve around digital solutions – though Designit also offers non-digital solutions – hence sustainability seemed to the interviewees as not being applicable in relation to the environmental considerations they accounted for when describing their perception of sustainability (Designit, 2017; Leo Innovation Lab, 2017). Having clarified that the two labs in question mostly offer digital solutions, it was expressed by Asger that sustainability would be considered if a client specifically asked for it: "sustainability is not a big thing here (…) a lot of our design products are digital (…) when it is, it's from our clients" (Designit, 2017, min. 03:12-04:05).

As briefly mentioned, the lack of a shared language of sustainability is not necessarily implying that the labs offer non-sustainable innovations or that they do not consider sustainability at all. The lack of a shared language can be interpreted as either an indication of sustainability being complex and hard to both define and address, why some of the labs were unable to express a fairly holistic perception of sustainability where the parameters of the TBL or similar sustainability measures would be included. It could also be an indication of unawareness of what is going on in the field of sustainability in relation to innovation, as the notion of sustainability has developed a great deal since Elkington presented the concept of the TBL in the 1990s. Moreover, the notion of the TBL, which could serve as a framework for a shared language of sustainability, is perhaps well-

known by some firms, but as shown above it is not all of the innovation labs in Copenhagen that give thought to the TBL when speaking about their innovation processes. Additionally, the language of sustainability is sometimes perplexed with the concept of CSR, which we have differentiated from sustainability in chapter 3. Christina from We Love People spoke about CSR, when explaining what sustainability means to the firm, to exhibit the distinctions between CSR and sustainability: "we are not a CSR agency (…) CSR is not purpose, CSR is compliance and risk aversion" (We Love People, 2017, min. 07:23- 07:45). When asked directly about We Love People's perception of sustainability, the two interviewees referred to that the company is trying to look at the 17 Sustainable Development Goals (SDGs) as a way of creating a shared language towards working with sustainability: "The 17 SDG's is an opportunity platform for thinking ahead – a compass if you may" (We Love People, 2017, min. 08:10-08:17). The conscious decision of adopting the 17 SDGs as a framework for a shared language of sustainability underpins that the lab has a fairly established language of sustainability, why we have positioned We love People in the upper left square of the matrix (see fig. 12). Similarly, Rune from Bespoke, found the SDGs interesting, because they provide a common reference point for talking about sustainability (Bespoke, 2017).

Like We Love People and Bespoke, we found that Space10 and Spark CPH have established a shared language of sustainability. Sapce10 appears to have adopted the language of sustainability fairly aligned with the TBL agenda based on the major trends or shifts happening in the world today (e.g. climate change, growing population etc.) (Space10, 2017a). Kaave from Space10 also mentions that they work from a pragmatic idealistic perspective (Space10, 2017b), which basically relates to the employees at Space10 working idealistically, but at the same time take on a practical or fairly realistic approach to carry out their idealistic ideas (Space10, 2017b). Spark CPH employs the language of the B-Corp association, which appears to be based on somewhat similar notions as the TBL agenda, to address social and environmental issues and as a means to measure how to become more sustainable (Spark CPH, 2017). Fundamental for Spark CPH is the creation of new sustainable business models, as sustainability should be at the core of any business (Spark CPH, 2017).

Another innovation lab that appears to have established some form of language of sustainability is the Climate Unit, as they have been developing the environmental plans of the Municipality of Copenhagen. On a social dimension, Per from the Climate Unit explained that they also converse and discuss progressively about *liveability*, which refers to how optimal conditions

for the citizens of Copenhagen could be made, which relates heavily to why the environmental plans of the municipality exist (Climate Unit, 2017). However, we found that the Climate Unit's language of sustainability was sometimes narrowly focused on specific parameters, why we have positioned the lab somewhere between 'high' and 'low' in relation to the 'shared language of sustainability' criterion.

Returning to address the *lack* of a shared language, we found, as mentioned earlier, that sustainability is often implicit but present in the labs' practices (see e.g. Fjord, 2017; Smith Innovation, 2017). For instance, Mikkel from Fjord stated that:

> We don't talk about it, because it is just ingrained in what we do, because it is not good for us or for society if we do not work with sustainability. It is just not something that is high on our agenda (Fjord, 2017, min. 5.45 – 06.05).

Thus, it appears that the employees at Fjord do not discuss or talk about sustainability, but somehow it is already embedded into their practices. Though, Mikkel conveyed that since design processes and design thinking is human-centred, then it implicitly becomes sustainable (Fjord, 2017). If the design thinking approach makes innovation sustainable by default because it is focused on human beings, a level of trust in the user, which is where insights are gathered, must arguably be present. If the approach is sustainable as a result of the user, then the user would have to express sustainability concerns including all three dimensions of the TBL, as well as their general needs and problems relating to any given topic an innovation lab might propose to the user. In relation to how Fjord works with sustainability (implicitly), Mikkel stated that Fjord has begun looking into what he dubbed 'unintended consequences' as a means to ensure a higher degree of sustainability. The approach involves trying to foresee the potential consequences of an innovation (Fjord, 2017). In the interview, Mikkel provided the rather generic example of Airbnb, which he refers to as having a sustainable business model, but: "it has some unintended consequences in terms of rising housing prices" (Fjord, 2017, min. 8:26-8:32). The notion of unintended consequences might give Fjord a means to work with sustainability, without mentioning certain terms related to sustainability. Quite similar, Peter from IIAB mentioned that for him personally, it would be more interesting to discuss the general responsibility of innovation labs (IIAB, 2017). In this regard, one might ask what the differences between innovating responsibly and innovating sustainably are, if all elements of the TBL agenda indeed were considered. The language of sustainability might take many forms,

though; we have chosen to include certain parameters into our theoretical framework, why e.g. IIAB is positioned in the 'low' end in relation to the criterion 'shared language of sustainability' in the matrix (see fig. 12).

Summarising, we find that a few innovation labs perceive sustainability in accordance with our theoretical and definitional outset, whereas the majority of the labs might be in need of an internal definition of the concept or perhaps a shared language of sustainability as a means to advance their sustainable practices, or even to enable the embedding of sustainability into their innovation processes. Moreover, the lack of a shared language of sustainability in some of the labs might prove the point of why some labs did not consider sustainability in their practices.

The 17 SDGs or the framework of B-Corps might work as a basis for creating such a shared language, as one interviewee mentioned that the SDGs might function as a common reference point (Bespoke, 2017). Within the B-Corp framework are the necessary tools of assessing and measuring sustainability against some indicators, which concretely work as the parameters that innovation labs could employ to consider sustainability in an explicit manner, which might work as a means to advance the sustainability agenda of an innovation lab. In chapter 9, we will discuss how such sustainability parameters might be embedded into the design thinking approach, since we identified that the approach to innovate is the common denominator of the innovation labs.

8.2 Innovation Labs in SOI Contexts - towards the Sustainability Sweet Spot

Analysing the innovation labs in relation to the sustainability sweet spot, proposed by Savitz (2007), we find that the innovation labs positioned within the upper right square have realised the importance of sustainability and consider sustainability in a holistic sense taking into account the TBL agenda, hence, are operating within the sustainability sweet spot. To illustrate, we have portrayed what we argue would be the sustainability sweet spot in our matrix (see figure 13 below), when looking at the innovation labs in our research sample.

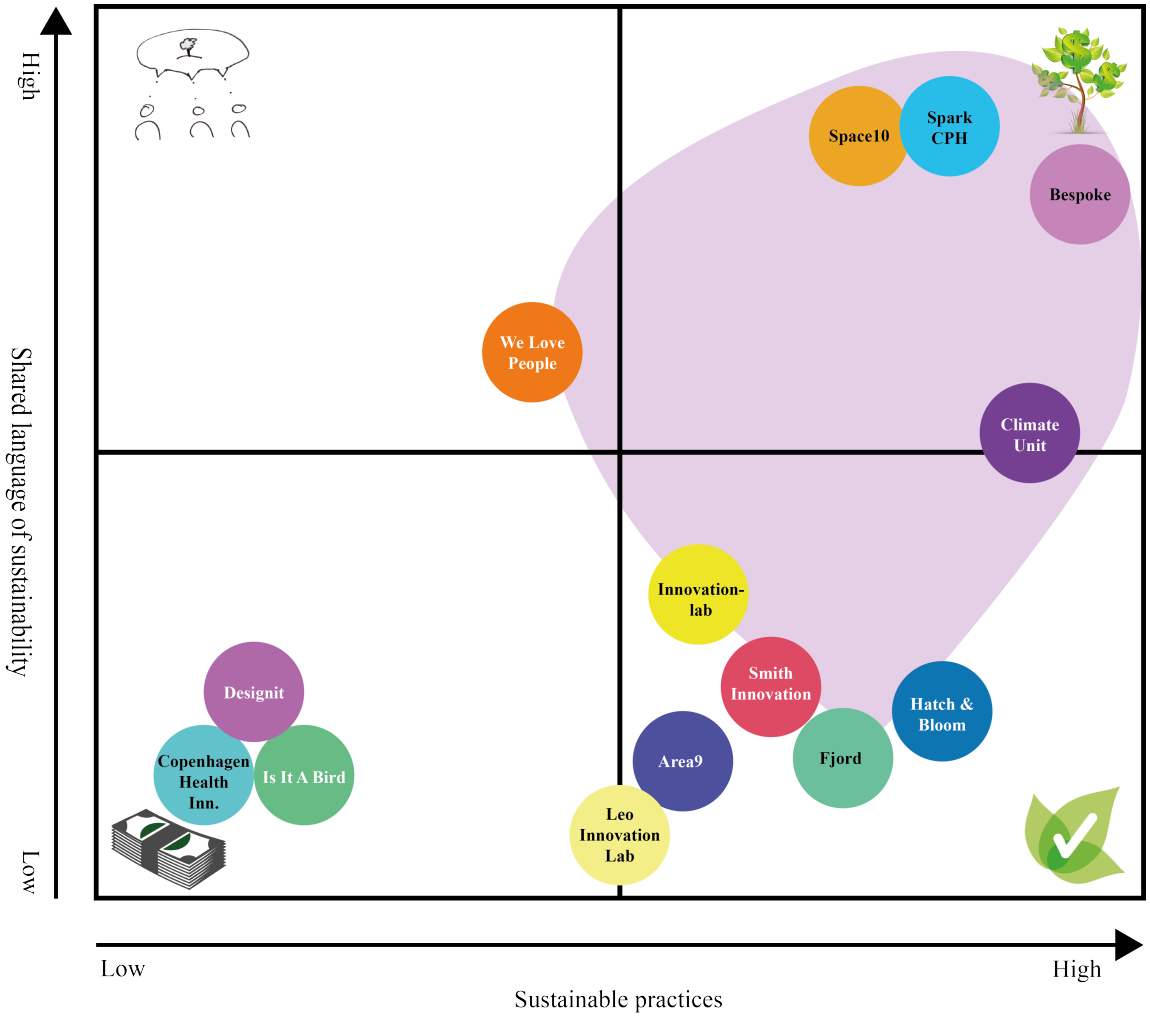


Fig. 13 - Identified innovation labs in relation to sustainable practices and shared language of sustainability matrix with sustainability sweet spot identification
(Created by the authors of this thesis)

As illustrated, the innovation labs included in the hazed purple shape are, considering the theory, operating within the sustainability sweet spot. Central to the notion of the sweet spot is that the firm operating within it considers all of its stakeholders instead of solely pursuing profits for its shareholders (Savitz, 2007). Looking at the labs characterised as operating within the sweet spot, we find that they all – explicitly – have adopted a stakeholder perspective rather than a pure shareholder perspective based on their statements when interviewed (Bespoke, 2017; Spark CPH, 2017; Space10, 2017; Climate Unit, 2017). As illustrated, we have positioned We Love People, Innovationlab, Smith Innovation, Fjord and Hatch & Bloom on the edge of the sustainability sweet spot, as we find these labs to be moving towards operating within the sustainability sweet spot.

Some of the labs have begun taking steps towards sustainable practices, and some are more vocal on sustainability issues and parameters than other. Moreover, some of the labs might arguably consider a wider range of challenges, issues and parameters in relation to their stakeholders than others. Consequently, we do not perceive the labs positioned on the edge of the illustration of the sustainability sweet spot as benefitting from operating within the sweet spot, although we argue that they are on their way there. For instance, based on the interviews conducted with Mads from Hatch & Bloom, we found that Mads has not fully accomplished turning his co-workers' practices into sustainable practices. In this regard, Mads has stated that: "it has been one of my challenges as well to try to change the culture of the company" (Hatch & Bloom, 2017, min. 38:51-39:01), though, he continued by claiming that it might not be that difficult to accomplish, since the partners of the lab are idealistic and to some extent see the potential in sustainability (Hatch & Bloom, 2017). Hatch & Bloom might be on a path to embed sustainability into their innovation processes, as they have hired Mads, who claimed that he is on a quest to make their clients understand the value of sustainability, which over time might reflect how the lab will innovate (Hatch & Bloom, 2017). Another example of an innovation lab that we positioned on the edge of the sweet spot is Innovationlab, which we found to be considering sustainability more and more (Innovationlab, 2017), though it has yet to be consolidated at the core of the lab and embedded into their innovation processes. However, Martin from Innovationlab claimed that the lab has begun working with dynamic business models, since business models are difficult to sustain, which might point towards the idea, which he presented, of business models only being able to be sustainable when they are dynamic, and he stated that Innovationlab tries to promote idealistic innovation (Innovationlab, 2017), which we find to consider some sustainability parameters.

Keeping the sustainability sweet spot in mind, we now turn our focus to the three contexts of sustainability described in the literature of SOI (Adams et al., 2012). Analysing where the identified labs are in relation to the contexts of 'operational optimisation', 'organisational transformation' and 'systems building', we have chosen to visually explicate how these relate to the sustainability sweet spot (fig. 14 below). The hazed green shape in figure 14 represents those who might be systems builders, as they are in a position to influence others and perhaps entire systems in relation to sustainability. Based on the positioning of the labs in the hazed green shape, we characterize these as having embedded sustainability into their processes, which also might indicate that they have placed sustainability at the core of their business, as the labs positioned here also are identified as

having established a shared language of sustainability, i.e. created or adopted a framework that can enable the embedding of sustainability at the core of the labs. The innovation labs (We Love People, Innovationlab, Smith Innovation, Fjord and Hatch & Bloom) that we have positioned on the edge of the sustainability sweet spot (hazed purple shape) could be characterised as being in the organisational transformation context. Area9 and Leo Innovation Lab, which are outside of the sustainability sweet spot (fig. 14) might be characterised as being within the context of operational optimization, whereas CHI, IIAB and Designit might not even fit into the SOI framework, because of their lack of commitment to a sustainability agenda. In the following we will account for the mentioned characterizations of the innovation labs in relation to the three contexts in the theory of SOI.

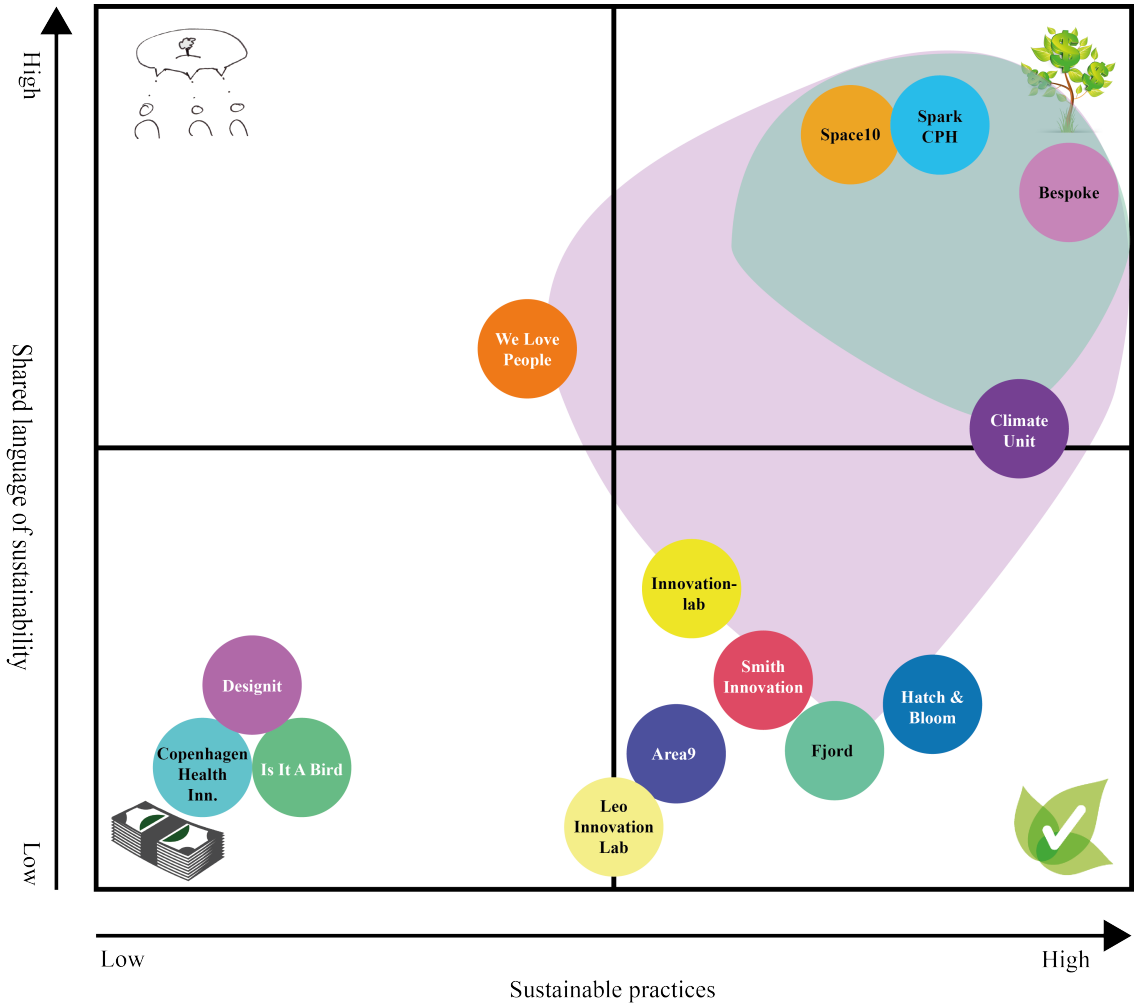


Fig. 14 - Identified innovation labs in relation to sustainable practices and shared language of sustainability matrix with systems building context identification

(Created by the authors of this thesis)

In spite of 'systems building' being an aspirational context (Adams et al., 2012), we find Spark CPH, Bespoke, Space10 and partly the Climate Unit to be operating within this context, as they all stress collaboration, and via these collaborations try to influence a re-design of systems. Moreover, they all seem to have embedded sustainability into their purpose (Bespoke, 2017; Spark CPH, 2017; Space10, 2017a; Climate Unit, 2017), which inherently pushes them towards the systems building context. For instance, Space10 is IKEA's external and independent innovation hub and it tries to explore what IKEA could be in the future by looking at the macro trends and the shifts in the world that demand actions towards more sustainable practices (Sapce10, 2017a). Simon from Space10 described a project where they tried to influence a wider system when they initially wanted to make awareness of how long showers affect the environment, but found that meat production is vastly more damaging to the environment. Consequently, Space10 made a campaign to create awareness among consumers about foods that are less harmful for the environment in comparison to meat (Space10, 2017a).

Adams et al. (2012) found no firm in their research operating within this context, though, we argue that Space10, Spark CPH and Bespoke are or as close as possible to be operating within the context of systems building. The aspirational characterization of the context made by Adams et al. (2012) might merely be the result of not having identified any firm within the context. In other words, it might not signify that there are no firms 'out there' that could be characterized as being 'systems builders'. The Climate Unit is quite different from the other innovation labs that have embedded sustainability into their processes, as it is a department of the Municipality of Copenhagen, hence, an integrated part of the current public system, which might be constrained by various policies and attitudes of politicians currently in power. However, we found no signs of systemic constraints for the Climate Unit when interviewing Per (Climate Unit, 2017), though he admits that sustainability still often is communicated to politicians and the public in quantifications, as numbers are easier to communicate than 'softer' aspects of sustainability that might not benefit from being quantified (Climate Unit, 2017). The Climate Unit could, to some extent, be perceived as an entity within an arguably established public system, which actually is created to redesign the system that it is a part of. Some of the climate plans made by the Climate Unit might affect multiple departments of the Municipality in positive and more sustainable ways.

The innovation labs, we identified to be operating within the organisational transformation context (positioned on the edge of the sustainability sweet spot), have all consciously become aware of the importance of sustainability. Though, some of them are more explicit about how they in fact work with sustainability, whereas some are quite knowledgeable regarding the innovation labs' role when it comes to the level of influence they might possess towards clients. For instance, Sofie from Smith Innovation emphasises the importance of collaboration in their innovation processes to create new solutions, which according to Adams et al. (2012) is crucial for firms within the organisational transformation context (Adams et al., 2012). Sofie stated in regards to Smith Innovation's innovation processes that they work with the design thinking approach in consortiums, as interdependent-firm-relations might empower a project to move towards more becoming more sustainable:

> I would say that sustainable products demand collaboration, so the process of working together and innovating together in these consortiums is (…) what you need to do to develop sustainable materials or new solutions (Smith Innovation, 2017, min. 5:31-5:55).

The consortium partnerships are for Smith Innovation the clients, which they might possess quite great influence towards, since the lab is co-working with their client in the innovation process.

Adams et al. (2012) also argue that firms in the organisational transformation context should embrace innovation platforms that consider the dimensions of the TBL. The authors exemplify this with platforms that e.g. try to anticipate unintended consequences of an innovation (Adams et al., 2012). Fjord is an example of an innovation lab, in our research sample, trying to create such a platform. Mikkel from Fjord stated that the lab fairly recently embraced the concept of unintended consequences, as a means of assessing various impacts of their innovations (Fjord, 2017).

In the organisational transformation context, executives and management should be committed to the sustainability agenda (Adams et al., 2012). Based on the conducted interviews, we found that the top-management of e.g. We Love People have become aware of the potential and seriousness of sustainability (We Love People, 2017). Christina, who is the creative director and part of management at We Love People, stated that they are investigating the 17 SDGs and figuring out how they can commit to these in different ways, and how their clients can commit to the SDGs as well (We Love People, 2017).

Looking at the labs positioned in the lower left square of the matrix (fig. 14), we find it difficult to analytically correlate these with any of the contexts in the SOI framework. It became apparent to us from our qualitative data, that Designit, CHI and IIAB did not consider sustainability in their innovation practices (Designit, 2017; CHI, 2017; IIAB, 2017). Sustainability might be considered at Designit if specifically asked for by clients (Designit, 2017). The least sustainable context in the SOI framework has to do with optimizing operations, yet it still requires some sustainability related considerations (Adams et al., 2012), However, the three labs (Designit, CHI and IIAB) might be in the initial stages of operational optimization context, although this is rather enigmatic to assert based on the interviews conducted.

With more clarity, we characterize Area9 to be operating within the operational optimization context, because of the lab's strong focus on innovating digital solutions that eventually will optimize their clients' processes (Area9, 2017). Additionally, Niels from Area9 spoke about how they focus their digital solutions on process innovation as a means to optimize others' processes (Area9, 2017). In the case of Leo Innovation Lab, we have too positioned them to be operating within this context of operational optimization. Though, the reasons hereof are somewhat different. Leo Innovation Lab exists independently of, but as a result of its parent company Leo Pharma, why the lab's ultimate task seems to be innovating as to sustain the parent company. Leo Innovation Lab provides digital solutions for the users of Leo Pharma's skincare products, mainly as a means to sustain or improve the legitimacy of Leo Pharma.

8.3 Five Stages towards Sustainability

We mention in our theoretical framework that Nidumolu et al. (2009) identified five stages of change of which firms go through on their journey to become sustainable. Moreover, they argue that sustainability should be viewed as an opportunity to drive change and innovation by engaging sustainability at the core of the company and not as CSR – the aforementioned add-on activity of a firm. Additionally, Nidumolu et al. (2009) perceive sustainability in relation to both technological and organizational innovation. This perception drives the enablement of addressing future obstacles relating to sustainability (Nidumolu et al., 2009). In this section of chapter 8, we will analyse where in the five stages the different innovation labs are on their journey to becoming sustainable – if at all. Though, we stress that the innovation labs all have their specificities, why this analytical exercise – as well as the previous analysis – is mainly for providing us with some comprehension of

which actions the innovation labs can take towards making their practices more sustainable, which we will discuss in the following chapter.

Analysing the labs in our research sample and looking at figure 14, we find that there are essentially only three of the interviewed innovation labs (Space10, Spark CPH, and Bespoke) that address sustainability in a way so that it can be interpreted as being embedded into the core of their business, hence, into their innovation processes – and at the same time have established a shared a language of sustainability. The three mentioned labs might be characterised as being in the fourth and fifth stage of the five stages of change model, since they are working with new business models, next-practice platforms and designs new ways of innovating. For instance, when asked about how Spark CPH works with sustainability, Frederikke stated that:

> B-Corp and sustainable business models is one of our three business legs. The other one is capacity building and change leadership including change processes and change done well, you know, good change. (…). Good change for us is both change that drags the world in a good direction and it is also change done well where the people that are part of the process grow with the change and are secure even though we live in a world where we have to change all the time and development is one of the great agendas of society, so there is really an impact area of doing it well and not having people falling flat on the ground because of too much change (Spark CPH, 2017, min. 9:01-10:09).

She continues by explaining the third leg of the business, which is democracy. Spark CPH utilizes its facilitator capabilities to encourage democracy. For instance, they have participated in 'Demokratiscenen' at 'Folkemødet'[16] where they have facilitated political debates for citizens instead of just for the political elite (Spark CPH, 2017).

Analysing whether any of the labs are at the first stage – that of viewing compliance as opportunity – we find that Designit, IIAB, CHI and Leo Innovation Lab have not yet arrived at the acknowledgement of regarding compliance as opportunity as a means to begin the journey to become more sustainable. For instance, Asger from Designit indicated that they of course comply with current and applicable legislation in relation to e.g. product requirements (Designit, 2017); however, we did not find any significant signs of Designit using legislation as a springboard for

[16] 'Democracy Stage' at the annual event on the island of Bornholm where Danish Democracy is celebrated and debated.

innovating new solutions. Consequently, we argue that the three mentioned labs are outside the scope of the five stages of change framework.

Considering the second stage, where firms work towards making their value chain sustainable, is where the model shows its impracticalities in relation to our analysis. Innovation labs have, as mentioned, a consulting role, why the value chains of the labs arguably appear as non-existent or quite short. However, the idea of the second stage seems overly useful for the innovation labs in their quest to help their clients in the sustainability transition. Thus, the model can help us identify where the sustainability focus of the labs could or should be, when working with their clients.

Contrarily, the third stage, where products and services are transformed into being sustainable or new ones are made sustainably, appears superiorly applicable in comparison. We find that Fjord, Hatch & Bloom, Smith Innovation, We Love People, Area9 and Innovationlab can be perceived as being in this stage on their journey to become sustainable (bearing in mind that Spark CPH, Bespoke and Space10 also consider the challenges at this stage, though they have moved further into becoming sustainable). Importantly, some of the labs are touching on elements of the succeeding stages, as they all have their specificities. As mentioned, most of these labs work implicitly with re-designing or transforming products or services to become more sustainable by e.g. reducing the environmental impact of the products and services (Fjord, 2017; Hatch & Bloom, 2017; Smith Innovation, 2017; Innovationlab, 2017). Exemplarily, Sofie from Smith Innovation has been working with: "a campaign called Climate Spring (…) focusing on developing new solutions for handling water in urban areas" (Smith Innovation, 2017, min. 0:32-0:45)[17]. The statement exhibits an instance where Smith Innovation innovated to transform or re-design the existing service of managing water in the city with sustainability in mind. Per from the Climate Unit provided another example of transforming solutions, for them to become more sustainable when he drew and explained to us what a 'power nest' is:

> Imagine we have a house with a flat roof at least twelve meters high, and there is a lot of wind coming up the building, and there is a turbulence issue, so you put a combination of a wind-tunnel with a vertical wind-turbine inside and solar panels on top (…) and right now we are talking with different building

[17] In original Sofie stated 'Climate Spring' as cited, which most likely indicates a need for a better word to cover the Danish word 'spring' which translates to 'leap', as the project originally in Danish is called 'Klima Spring', which translates to 'Climate Leap'.

> owners in Copenhagen (…) to put up this thing, and it could be very interesting, because it is decentralised energy production (Climate Unit, 2017, min. 5:47-6:48).

Though, the 'power nest' can be perceived as an example of the Climate Unit operating within stage four and maybe to some extent in stage five. The Climate Unit has moved beyond only focusing on re-designing products and services into finding novel ways of capturing and offering value to the citizens of Copenhagen through partnerships, as the development of the 'power nest' is made in partnership with a Dutch company and other stakeholders in Copenhagen (Climate Unit, 2017). The lab seems to question current practices within the system of which they operate, by e.g. creating next-practice platforms: Per explained that the Climate Unit facilitates collaborative events, where businesses, experts and city officials meet to discuss possible opportunities, which often ignite the lab's innovation process (Climate Unit, 2017).

Having analysed the findings of our research, the following discussion will take its commencement in the analysis, since the analysis provided here and theories used seem appropriate in a discussion on how the innovation labs can move towards more sustainable practices, and how they might embed sustainability into their innovation processes.

9. Discussion and Future Research

Contemplating on selected literature on the long-term benefits of transforming a firm's practices into more sustainable practices (Adams et al., 2012; Bonini & Görner, 2011; Elkington, 1999; Christopher Laszlo & Zhexembayeva, 2011; Nidumolu et al., 2009; Savitz, 2007; We Mean Business, 2015; Whelan & Fink, 2016), it might be difficult to fathom why not all of the innovation labs in our research sample have taken the necessary actions to turn their practices into sustainable practices. In regards to the identified innovation labs, we found that some of them (especially Designit, IIAB, CHI, Area9 and Leo Innovation Lab, but also to some extend Hatch & Bloom, We Love People, Fjord, Innovationlab and Smith Innovation) did not consider sustainability (in accordance with a holistic understanding of the TBL agenda) because their role of consultancy, which on the one hand might appear intelligible, though, on the other hand seems quite perplex. We find it perplexing, because of the innovation labs' core value proposition, which entails offering innovative processes for other firms, why operating sustainably should be manifested in the innovative processes that they perform, resulting in offering innovations that consequently would be sustainable.

The level of complexity in transforming current practices into sustainable practices might be a main reason of why some of the labs have not begun the sustainability transition, which is why we aim at providing a discussion in this chapter of how the innovation labs might move towards more sustainable practices, before we suggest how they might embed sustainability at the core of their business and consequently into their innovation processes. Moreover, we will discuss how the design thinking approach might be key in order to embed sustainability into the labs' innovation processes. Additionally, the potential significances or consequences of being in a Danish context when considering sustainability will be discussed. In connection, we will provide a brief discussion of the possible consequences of the innovation labs being either publicly or privately owned when transitioning into sustainable practices. Conclusively, we will end the chapter by proposing some themes for future research, which have come to mind while writing this thesis.

9.1 The Necessity of a Shared Language

Prior to discussing how the innovation labs might move towards more sustainable practices, we see a need to address whether a shared language of sustainability is important for transitioning into sustainable practices. We found from our research that there exists no shared language of

sustainability among the labs, though; we found that some labs have internally employed or adopted frameworks that enable a shared language of sustainability (e.g. Spark CPH adopted the B-Corp framework, Bespoke adopted the TBL terminology and We Love People trying to adopt parts of the terminology from the 17 SDGs). Fundamentally, we argue that the innovation labs need to internally define sustainability or adopt a sustainability framework to enable a language in order to enable the sustainability transition. As we saw in figure 12, the three labs that we have identified as having embedded sustainability into their practices all have established some form of language in relation to sustainability. Interpretively, this might indicate that an organisation needs to establish and actively utilize such a framework containing the necessary tools and words in order to move towards sustainable practices based on a shared definition of the sustainability concept. Peter from IIAB illustrates and supports our assessment when he stated:

> We as a company does not have any articulated sustainability practices. We have got no means or tools whatsoever of taking an articulated view on sustainability in our projects, and that makes you kind of wonder (…) it hints to the fact that of course if you want to be sustainable, you have to have sustainable practices, and I think the language around it is very weak at the moment, and I think that the tools to sort of engrain or embody those practices are non-existent (IIAB, 2017, min. 3:55-4:46).

Rather bluntly, Peter points to the exact issue of not having internally determined what sustainability should be perceived as at IIAB. We are not arguing that all employees' perceptions of sustainability should be completely aligned within an innovation lab. We are merely conveying that for a firm to be committed to the sustainability agenda, the terminology around the firm-specified-sustainability-perception should be communicated carefully, as it will provide the employees with a shared understanding of how they can communicate together and with clients regarding sustainability. Adams et al. (2012) similarly argue that executives committed to the sustainability agenda must communicate the values and goals related to sustainability to display the commitment of the firm (Adams et al., 2012).

We discovered that several labs implicitly work sustainably (e.g. Fjord, Smith Innovation, Innovationlab), which questions the need for an internally shared language. However, we argue that it might not be pointless to create a language for something that is already there, since it might enable the advancement of what they are doing. Another question arises from the former one, which relates to whether the innovation labs should or should not strive to become more sustainable. We have made an attempt throughout this thesis to consolidate the premise, which is supported by

literature in both academia and in the world of business, that transitioning practices into sustainable practices makes good business sense. Hence, we pose a suggestion to this discussion: Might it be possible to work more progressively with sustainability if we actually are knowledgeable of what we are doing in regards to sustainability? In complement, we see a shared language as a crucial tool to enable the aforementioned knowledge, which then enables the innovation labs to work progressively with sustainability, thus, working actively towards more sustainable practices. We base these considerations in our research, which in general indicates that the majority of the labs could do more to enable the sustainability transition, especially if they created or adopted a shared language of sustainability. In connection with figure 13 one might argue that the labs positioned outside the upper right square could move closer to this space where the benefits from operating within the sustainability sweet spot arguably would be greater.

9.2 Moving towards Sustainable Practices

In this section, we will discuss how innovation labs could consider some of the indicators included in Elkington's (1999) notion of 'shear-zones', as to move towards more sustainable practices. Together with these considerations, we will discuss which actions could be taken to move the innovation labs towards sustainable practices in relation to the SOI framework; Savitz' (2007) sustainability sweet spot; and Nidumolu et al.'s (2009) suggestions on how firms move in its journey of becoming sustainable. These considerations might provide us with possible indicators of how the innovation labs could embed sustainability into their innovation processes, which we will discuss in section 9.3.

Giving thought to the shear zone emerging between the economic bottom line and the environmental bottom line (Elkington, 1999), innovation labs might move towards sustainable practices by considering e.g. eco-efficiency, which involves "the delivery of competitively-priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity (…)" (Elkington, 1999, p. 78). Designit, IIAB and CHI could all begin to consider this aspect in their practices, as a starting point in making their practices more sustainable. Notably, the concept of eco-efficiency seems to revolve around reducing negative impact, which might be suitable as a start in the sustainability transition, especially for the labs that we have characterised as not having gone into the first stage of viewing compliance as opportunity (relating to the five stages of change). Similarly, Designit, IIAB and CHI might also benefit from

taking the first steps into the operational optimisation context, which also revolves around eco-efficiency and how goals in this respect can be reached through e.g. partnerships. Moreover, they should begin to perceive compliance as opportunity, as a means to spark innovative ways of innovating on the basis of various norms and legislations they have to comply with. Considering the concept of Appreciative Inquiry (AI) for a brief moment here, which we mentioned in the literature review, it might be useful for IIAB, Designit and CHI to consider AI when conveying the benefits of moving towards sustainable practices to employees of the labs. The change method could be employed to influence the mind-sets of the employees to enable the appreciation of sustainability that might be non-existent within the labs.

In this regard, Spark CPH, Bespoke and Space10 might even have moved beyond eco-efficiency, as e.g. Kaave from Space10 commented that customers today expect way more in relation to sustainability:

> (…) now we see that both the planet but also customers are expecting way more when it comes to sustainability, and that puts a different pressure on companies, because now they cannot just do it (sustainability ed.) because of positioning and branding, they actually have to find a way to do it while it is still a good business" (Space10, 2017b, min 3:21-3:36).

While the three labs, we have characterised as innovating sustainably, might have moved beyond the concern of eco-efficiency, it appears that e.g. the Climate Unit mainly focuses on eco-efficiency, which in some other regards can be characterised as operating near the systems building context, but also within the organisational transformation context, though, the lab's main purpose is manifested by the Climate plan for Copenhagen, which main purpose is concerning the reduction of the CO^2-emission level within the city limits (Climate Unit, 2017). The case of the Climate Unit becomes precarious, as they should attempt moving their sustainable practices even further by consolidating their position at the fifth stage, considering the five stages of change model, but at the same time make commitments to an even more holistic notion of the TBL agenda. If they are not already considering a holistic TBL agenda, how can they be anywhere near the systems building context, considering the SOI literature? We have positioned them on the edge of being a systems builder precisely for that reason, as they do somehow influence entire systems and industries by being part of the public and political system. In connection, the Climate Unit itself is a result of desired change in relation to environmental relations in Copenhagen, which most certainly will influence the systems and industries in the city.

Reflecting on our placement of the labs in fig. 13, we have positioned Innovationlab, We Love People, Hatch & Bloom, Fjord and Smith Innovation on the edge of the sweet spot, because, to operate within the sweet spot firms must attend equally to each of the three bottom lines (Savitz, 2007), which the labs mentioned did not account for when explaining the labs' perception of sustainability and their practices. Case in point, We Love People, Smith Innovation and Fjord perceived sustainability in relation to the environment, but not as such in relation to social sustainability (We Love People, 2017; Smith Innovation, 2017; Fjord, 2017). If already considering eco-efficiency to some degree in their innovation processes, the labs mentioned could begin to consider themselves as being part of society to a higher degree than they do at the moment. By considering increasingly more groups of stakeholders when innovating, the labs will move closer to operating within the sustainability sweet spot, and at the same time move further into the organisational transformation context. As we saw in chapter 5, the sweet spot requires a stakeholder perspective, as we have argued previously that taking on a broader stakeholder perspective is essential in moving towards more sustainable practices. By adopting a stakeholder perspective, then, innovations will necessarily consider social sustainability themes to a larger extent, since the various stakeholder groups will e.g. demand certain standards in relevance to the business ethics of the innovation labs. Such business ethics, emerging from the shear zone between the social and economic bottom lines, refers to e.g. minority rights, downsizing policies and unemployment (Elkington, 1999). Considering these sustainability issues for Fjord, Smith Innovation, We Love People, Innovationlab and Hatch & Bloom, we argue that the labs could benefit from addressing these by e.g. committing to transparency of how they conduct their businesses. Transparency in this regard would arguably create an improved work environment for employees.

Sustainability issues emerging in the shear zone between the social and environmental bottom lines commonly relate to 'environmental justice' (Elkington, 1999). Included in the theme of environmental justice are issues such as the disadvantages of people as a result of negative climate impact; the notion of sustaining the environment for future generations; and externalities (Elkington, 1999). Externalities, which we previously mentioned, can be exemplified by an innovation lab innovating an under-water-product that later on is found to have polluted the water in a lake where it was used. The questions of who is responsible for cleaning the lake from pollution and maybe even pay compensation to those who have been in contact with the polluted water arise. Does the innovation lab have a responsibility or does the manufacturer? Can they even be held accountable, if it is difficult to prove that the water was in fact polluted by the under-water-product

or not? Consequently, we see an opportunity for the labs mentioned: that they move towards more sustainable practices also by taking the steps necessary to move into the fourth and fifth stage of the five stage of change model. This would e.g. entail that Smith Innovation, who already acknowledges the potential and necessity of partnerships, via the consortiums they arrange, would begin, for instance, to develop new technologies for the construction industry that could change the value chain relationships in significant ways. Another example of one of the labs moving into stage four and five could be Fjord, who might benefit from engaging in more partnerships that might not appear as a common or normal partner in their processes. By collaborating with a variety of partners new and improved solutions might emerge, which in turn might reduce chances of externalities.

Leo Innovation Lab and Area9, in particular, had difficulties perceiving environmental sustainability in relation to the value propositions of the labs, as they offer digital solutions (Leo Innovation Lab, 2017; Area9, 2017). Pondering over how these two fairly similar labs (in terms of value proposition) could move towards more sustainable practices, we propose that they might benefit by moving beyond the operational optimisation context into the organisational transformation context. In doing so, Leo Innovation Lab and Area9 would start engaging in the systems that they operate within. Collaborations and partnerships could prove beneficial, if not essential, in this transition, as new sustainability possibilities will emerge from such engagement according to Adams et al. (2012). Another aspect that might benefit the two labs in their sustainability transition into the afore mentioned context is that of creating a sustainability framework as a means to provide employees with a shared language and a firm-defined-definition of the concept and how the given lab attends to it. Communicating a commitment to sustainability will predictably increase the labs' stakeholders' interest in the subject and it might even result in employees and other stakeholders taking part in the sustainability goals set in connection to communicating the sustainability commitment. In relation to the five stages of change model, it might be fruitful for Leo Innovation Lab and Area9 to start perceiving compliance as a jump-off point in fostering innovation. In other words, identifying the opportunities intrinsic in given legislation could be utilised to induce the labs to experiment with sustainable technologies that could improve their current digital innovations.

9.2.1 Danish Context

In this section, we want to elaborate on the scope of the cultural context and what it could denote in reference to the perception of sustainability. As we have addressed previously in the thesis, it is mentioned by several interviewees in our research sample that Danes have a certain implicit awareness of sustainability – at least when sustainability concerns the environment. The implicitness of sustainability and the perception thereof, is perhaps in some way understood in the sense that we have a self-understanding of Denmark and our own culture as being 'green' and responsible. Such a self-understanding might stem from Denmark's rather long history of manufacturing wind turbines (denmark.dk, 2015) in combination with e.g. Copenhagen's Climate plans to reduce the level of CO^2-emissions previously mentioned. This self-awareness is not necessarily something that drives innovation, though, some argue that Danes and Danish companies are very innovative and possess a sustainable mind-set (Forbes, 2015; Giolla-Møller, 2016). On the other hand, the self-understanding might be a constraint in becoming *more* sustainable or even transitioning practices into sustainable practices in the first place. In other words, the self-awareness of Danish companies being green might become a self-defeating prophecy, since being told that firms within Denmark are green might have the effect of firms not considering whether they are 'green' or not. This might be true in the case of the innovation labs in our research sample, since only a few were immediately able to explain what sustainability meant to the lab they represented. Nevertheless, we are – as biased Danes – convinced that Denmark has institutions and some cultural traits (such as the cooperative spirit also found in the Scandinavian design history (Szczepanska, 2017)) that make Copenhagen an excellent place to drive innovation and sustainability, but as several of the interviewees in our research sample indicated, there is still a lot that could be done in terms of sustainability within firms and various public institutions in Denmark (Hatch & Bloom, 2017; Innovationlab, 2017; Smith Innovation, 2017; We Love People, 2017; Fjord, 2017; Leo Innovation Lab, 2017; Climate Unit, 2017). The implicitness of cultural traits emphasises our suggestion of establishing a shared language of sustainability as a means to overcome the inertia this self-understanding and implicitness might be the consequence of. For instance, Asger from Designit referred to the Danish design heritage as being sustainable because it is based on being available to everyone, inclusive and thus democratic: "(…) if we have some sort of moral issue it would be up to the Scandinavian design heritage keeping it clean and smooth" (Designit, 2017, min. 15:14-16:00). Taking this statement into consideration, it becomes fairly clear that the possibility of inertia among the innovation labs exists.

What also appears interesting in relevance to this 'Danish context of sustainability' is whether it only exists for those who are Danish. The awareness might only belong to the specific social group that can be characterised as Danish. How does sustainability look like in another context, such as in the US for instance? It might not be difficult to imagine that some American innovation labs might have differing perceptions of sustainability in comparison to Danish innovation labs. The 17 SDGs might prove to be a means to unify or align sustainability perception on a global scale, if that is desirable. Surely, aligning perceptions or creating a shared language of sustainability would make comparing initiatives, firms, organisations etc. less complicated.

Briefly reflecting on the design thinking approach and how it might look in a different context than the Danish context when embedded with sustainability – which we will discuss in the following section – it might not appear as different, if the design thinking approach is adopted somewhat similar to the one presented in this thesis. However, it might be different in relevance to sustainability, as the concept might be perceived differently.

Another aspect of interest when examining our research sample is that some labs are publicly owned, whereas others are privately owned. Might there be differences in how they embed sustainability into their innovation processes? Are there fundamental differences between the two modes of governance within the labs, which might affect progression towards more sustainable practices? While all the innovation labs in our research sample are located within the borders of the Municipality of Copenhagen, we assume a position that the labs are fairly equally capable of considering the same sustainability issues or parameters and consequently embed these into their innovation processes, which we found to be methodologically based on the design thinking approach. Quite possibly, the publicly owned labs exist under different conditions, as both Anette from CHI and Per from the Climate Unit explained how they – without surprise – have to report to politicians, various public departments and in the case of CHI also to various universities. The distinctly different chain of command between privately and publicly owned innovation labs might make inter alia the motivation and the necessary resource allocation to transition into sustainable practices and embedding sustainability into the labs' processes fairly different.

9.3 Embedding Sustainability

The literature on sustainability in connection with innovation points towards that firms will achieve greater benefits if sustainability is embedded at the core of the business (Adams et al., 2012; Bhattacharya & Polman, 2017; Chris Laszlo & Cooperrider, 2010; Worley & Lawler, 2010). A way to place sustainability at the core of a business can happen through innovation (Adams et al., 2012; Nidumolu et al., 2009). Reflecting on how the innovation labs in our research sample might embed sustainability into their innovation processes, which might result in their innovations, i.e. their value proposition, becoming sustainable. According to the aforementioned literature, the innovation labs would improve their business in the long-term, but what is also important is that if the labs' value proposition becomes intrinsically sustainable, then it would affect their clients as well. Consequently, one could imagine how their clients would move towards more and more sustainable practices the more the given client worked with the sustainable innovation lab. This reflection points straight at the reason why innovation labs are interesting as actors in society, because of their potential influence, which might have overarching reach into multiple industries and sectors.

Now that we have discussed how the innovation labs might move towards more sustainable practices, we will reflect on how they might embed sustainability in a more general sense, as it might not be intelligible for all the innovation labs to directly embed sustainability into their innovation processes right away. We argue that firstly establishing a shared language within each lab of sustainability will prove beneficial, as it might clarify what is meant when e.g. executives propose a commitment to the sustainability agenda. Moreover, a shared language and a firm defined definition of the concept would plausibly enable or facilitate the actual embedding of sustainability into their innovation processes. However, we do not argue that embedding sustainability is impossible if no such language exists, partly because we found many of the labs to actually work more or less sustainably without having established a shared language of sustainability (see fig. 12). Adding to this, the implicit Danish context discussed in the previous section, which might be sufficient in the initial phases of embedding sustainability into innovation processes. Contrarily, we argue that establishing a shared language would ease the practicalities of embedding sustainability, and it might prove to be lasting if everyone within a given lab is aware of what sustainability embedded innovation processes actually entails.

Taking into account that all the innovation labs in our research sample – in some variety – employ the design thinking approach to guide their innovation process, we find it appropriate to discuss how sustainability might be embedded into the approach. There might be more optimal ways of embedding sustainability than what we explore in the following, and if sustainability could be embedded in a superior way if another innovation method was employed is also of concern, yet, we want to present how sustainability might be embedded into the approach the labs already utilize. Knowing without certainty that there might be superior innovation methods to embed sustainability into should be considered in future research, which we also propose in a later section in this chapter. Settling on the design thinking approach is partly based on our conviction of the inherent qualities of the approach, but also on the viewpoint that the labs might perceive the act of embedding sustainability into their own processes as more realistic to some degree, since they are presented with a familiar process – simply with added considerations relevant to sustainability.

9.3.1 Design Thinking bridging Sustainability and Innovation

Turning our attention to the design thinking approach, we already mentioned that the approach is human-centred, which might be helpful when wanting to embed sustainability into the approach. Though, this does not guarantee e.g. social sustainability, because the human of interest to an innovator employing the design thinking approach may not have any concerns related to sustainability, which actually would benefit him or her. Pondering over an exemplar situation, one could imagine an innovation lab being hired to innovate on behalf of a smartphone company that wants to figure out how they can make their products even more exciting for their customers. The employees at an innovation lab (whom we can dub 'designers') might not consider sustainability parameters when designing the initial space – that of inspiration. Certainly, chances of users literally expressing a need or desire that relates to sustainability are present, though, as the late CEO of Apple, Steve Jobs, once famously said in a 1989 interview to Inc. Magazine: "You can't just ask customers what they want and then try to give that to them. By the time you get it built, they'll want something new" (Gendron & Burlingham, 1989, p. 11), we argue that designers need to ensure that questions asked in the inspiration space relate in some way or another to suitable sustainability parameters in relation to the given project that the innovation lab was hired to do. In other words, the approach bases its processes mainly on what humans express and what the designer experiences through his or her immersion, why it stands out as paramount, which questions the designer asks of the user. Specifically, this translates to the designing of questions that both include the task given

by a client integrated with sustainability concerns. We stress the importance of designing the questions being asked carefully, since it otherwise will be up to the design team to embed sustainability parameters into the process later on, which might conflict with actual user needs. Moreover, we assert that the comprehensiveness or say quality of the sustainability parameters embedded by the design team will only be as good as the team's perception and knowledge of sustainability. Therefore, we emphasise the potential benefits of establishing a shared language of sustainability within the innovation labs, as we argue that such a language can enable and widen the scope of sustainability parameters that could be embedded into their innovation processes.

Proposing that sustainability should be embedded into an innovation process right at the beginning of it might ensure a continuous focus on sustainability, though it might not turn out to be so. Considering the many steps in the design thinking process – also considering the fundamental feature that it is iterative – it might be more beneficial to employ a holistic or comprehensive approach on how to embed sustainability into innovation processes, and specifically, into the design thinking approach. Examining the approach, laid out in figure 15 (exhibited below), it might be possible to include a sustainability mind-set that involves several – if not all – dimensions of sustainability, into each of the different steps included in the three spaces. For instance, if the questions asked and the interactions in the inspiration space evolves around social sustainability issues, then it would be the task of the designer to bring these concerns further into the process, and importantly; begin to think in terms of environmental sustainability in the ideation space. Seemingly, including environmental sustainability concerns into the ideation space could reveal as quite ideal, as it is in this space where prototyping occurs (often at a rapid pace to minimize cost of time spend trying to innovate complete products). In the ideation space, it becomes possible to test and re-test how the client-provided-task works out, utilizing the observations from the inspiration space, and combining them with environmental sustainability parameters that suits the given task. We acknowledge that all considerations in relation to a holistic perception of sustainability might not demonstrate applicable in any given task, though, we persist in claiming that at least trying to include a holistic sustainability perception should be a goal in itself, as it appears sound in a business context to do so, according to the literature discussed throughout the thesis. In figure 15, we have marked the embedding of social sustainability parameters in the beginning with environmental sustainability parameters overlapping and going further into the processes, though, depending on the given task it might be appropriate to swap when the two sustainability themes should be embedded. It might even show suitable to embed both in the beginning of the process –

again, depending on the client-provided-task at hand. Intentionally, we propose embedding economic sustainability parameters later in the process, as the design thinking approach, when innovating in relation to products or services, will assure the assessment of the economic feasibility. At the later stages of the ideation space and in several stages of the implementation space, economic sustainability is tested, since e.g. the business model in relevance of the innovation is tested in the ideation space, and a long-term revenue strategy is to be considered in the implementation space as well (IDEO, 2015). The rationale behind embedding environmental sustainability parameters including social sustainability concerns at the beginnings of the process is based in the mere reality that an innovation most likely will not finalize or even go into the space of implementation if not economically feasible.

Touched upon several times throughout the thesis is the question of expected 'trade-offs' between investing resources in sustainability versus the profitability of an innovation. The design thinking approach should, in our perception, assist the abolishment of the trade-off thinking, since innovations have to show economically sustainable for them to go into the last stages of the implementation space. On a long-term basis, sustainability embedded innovations should even prove more profitable considering the literature discussed previously in the thesis.

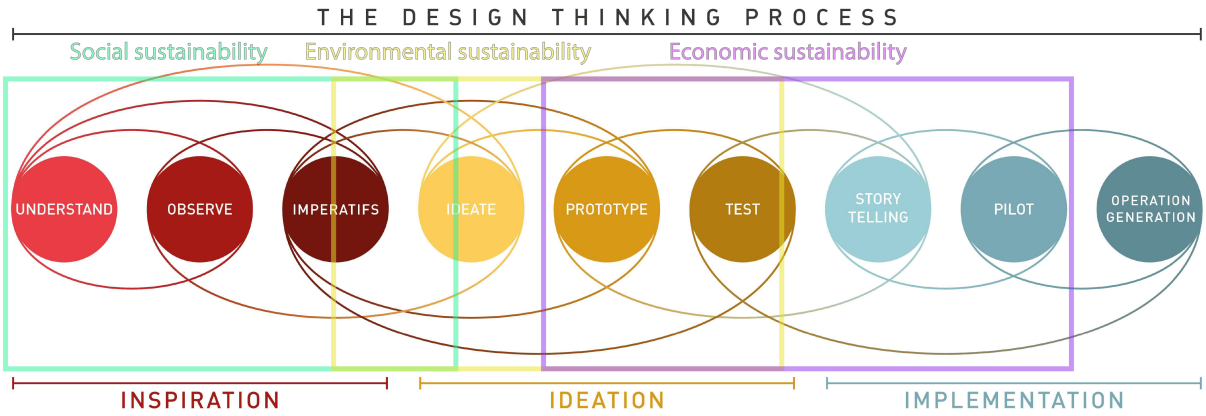


Fig. 15 Example of how sustainability might be embedded into the design thinking approach (Source: The Design Thinking Process adopted from (d.school Paris, n.d.) with sustainability themes added by the authors of the thesis)

Brown and Wyatt (2010) mention in relation to prototyping in the ideation space that herein lies the opportunity to reveal unintended consequences, which, if dealt with, will prove more reliable in terms of long-term success (Brown & Wyatt, 2010). Deliberating the sustainability themes marked in figure 15 – which takes into account the TBL agenda – the SOI literature, in particular, pose that creating platforms where unintended consequences is attempted to be anticipated is supporting a firm's movement further into the organisational transformational context (Adams et al., 2012). In other words, the space of ideation, and the included prototyping exercises, might already include some of the social and environmental sustainability concerns, as anticipating unintended consequences could alleviate the negative immediate unforeseeable impact of an innovation. As paradoxically as it may sound to anticipate the unforeseeable, the mere notion of designers bearing in mind that an innovation might impose negative unintended consequences could conceivably empower the iterative processes, related to prototyping in the design thinking approach, to iterate innovations towards having a lesser negative impact.

Suggesting sustainability related requirements for the labs, such as e.g. the materials used to make a given product a reality, is likely to affect the client's value chain, as new or improved materials need to be sourced and suppliers may need to change their practices in order to fulfil the requirements. In accordance, Nidumolu et al. (2009) present the notion of making a firm's value chain sustainable, which sustainability embedded innovation might support. Similarly, such innovations might even play a crucial role in CEOs rethinking and re-designing their firm's business models, because a sustainable innovation might function as the igniting spark of consciousness regarding the potentials and possibilities of placing sustainability at the core of their businesses.

Contemplating further on the implications for the innovation labs embedding sustainability into their design thinking approach, we argue that the designers, i.e. the employees of the innovation labs, will take greater pride and pleasure in their work when sustainability parameters are embedded. As Elkington (1999) and Adams et al. (2012) argue, the TBL agenda is deeply intertwined, why employer satisfaction, which can be characterised as included in the social bottom line of a firm, also should be considered in relation to the economic bottom line, since employer satisfaction is undoubtedly connected a firm's economic performance (Adams et al., 2012; Elkington, 1999). Continuing along those lines, the complexity of sustainability appears to increase when considering that the environmental sustainability profile of a firm might have a great impact

on employer motivation and satisfaction, as issues such as intergenerational equity, which inter alia relates to how the current generation leaves the state of the planet for future generations. One could imagine that employees of an innovation lab were motivated to leave the planet in the same, if not in a better state for their children and future generations to come.

Reflecting upon the majority of the sustainability issues or parameters included in the TBL agenda, i.e. in a holistic sustainability comprehension, we are of the impression that they can be considered and embedded if a broad stakeholder perspective is adopted by the innovation labs. If a great variety of stakeholder groups are taken into account by an innovation lab, it might be clear which sustainability parameters are applicable in relevance to a given task. This might necessitate that designers have to widen the scope of groups when collecting user-insights in the initial stages of the inspiration space. Certainly, it comes across as valid in the inspiration space to address individuals that ultimately are or will become customers of the innovation lab's clients, though, it might be beneficial to address other stakeholder groups in some way or another. The act of immersion in relation to groups that are not necessarily end-users might show exaggerative, although, some insights from other stakeholder groups could be advantageous for the lab, as these insights might work as preventive in relation to anticipating unintended consequences.

9.4 Future Research

In this section, we propose some future research topics that could bring additional and deeper insights to our research within sustainability in connection to innovation. Moreover, the proposed research ideas might influence perceptions of sustainability and innovation.

9.4.1 What's Next?

It would be interesting to dive further into the sphere of design thinking and ask the question: '*what's next?',* since many of the interviewees in our research sample spoke of innovation as something dynamic and undergoing continuous change. Posing questions that address where design thinking might bring sustainability appear interesting, as design principles such as *cradle-to-cradle design* exists, which can be perceived as a way of ultimately integrating sustainability and design. McDonough and Braungart, authors of 'Cradle to Cradle: Remaking the way We make Things' and 'The Upcycle: Beyond Sustainability' have stated: "Human beings don't have a pollution problem; they have a design problem" (McDonough & Braungart, 2013, p. 7), which penetrates directly into the further research of this thesis. By considering the thinking of McDonough and Braungart

(2013), we propose future research into how design thinking can contribute to the development of innovation design that ensures multiple functionalities and multiple usages of products, and how manufacturing companies can transition into offering services.

The interest in new ways of considering innovation design springs from various statements provided by the interviewees in our research sample, which e.g. includes themes such as *trends* (Bespoke, 2017); unintended consequences (Fjord, 2017); and future living (Space10, 2017). Frederikke from Spark CPH mentions in relation to design: "Be aware of what effects your design has. Why not design something that has a great impact" (Spark CPH, 2017, min. 15:10), which points towards the argument of McDonough and Braungart (2013) that firms should innovate to create a positive impact involving sustainability, growth, practices and function as a means for how we design for abundance (McDonough & Braungart, 2013).

9.4.2 Going past Zero

With much of the sustainability theory based on eco-efficiency and how we e.g. reduce CO^2-emissions, McDonough & Braungart (2013) address how we might change the well-intended environmental perspective of today. According to the authors, we need to move beyond the mission towards zero emissions, accidents and spills; instead, we should look at how to become better. How can we create a better work environment, and how can we produce more wind or solar power instead focusing on how we lower CO^2 emissions? Ultimately, focusing on improving positive impact instead of focusing on reducing negative impacts would lead to the reduction of negative impacts (McDonough & Braungart, 2013). In other words, it appears interesting, in relation to our research, to investigate how *upcycling* could serve as a tool or mind-set to doing better instead of less bad or for that matter aiming at 'zero', as we saw e.g. the Municipality of Copenhagen aiming at zero in terms of CO^2-emissions. Similarly, Elkington (2012) portrays a new breed of innovators and entrepreneurs as environmental heroes, whom he refers to as Zeronauts (Elkington, 2012), which relates to what *the upcycle* and the *cradle-to-cradle design* is trying to move beyond. Amusingly in relation to the quest towards zero, McDonough and Braungart (2013) point to the fact that emission in itself is not bad, as we breathe air and trees breathe carbon dioxide, hence emissions are necessary for life to exist, therefore emissions should not be "zero" (McDonough & Braungart, 2013, p. 31).

The design position McDonough and Braungart (2013) propose, addresses a flaw in the contemporary cradle-to-grave linear journey of products, as unintended consequences and not

considering what happens to a product after usage. The cradle-to-grave thinking is creating a great deal of the climatic and waste related issues we are experiencing today, why the authors propose this: “with the upcycle, it’s clear that we intend that things get better for generations in the future, not worse” (McDonough & Braungart, 2013, p. 49).

9.4.3 Changing the Narrative

Considering that much of our research relates to how a shared language of sustainability might benefit the innovation labs in our research sample, we propose that future research should be made in relation to how a new narrative towards what is understood and perceived, when we talk about sustainability, could look like. Additionally, we suggest investigations should be made into what ‘we’ want to achieve with sustainability. We have discussed the potential ‘greenwashing’ of firms’ actions and the relationship between CSR and sustainability, why we find it interesting to develop or explore the possibilities of the creation of a new narrative of sustainability. Much in line with McDonough and Braungart (2013), some of the innovation labs spoke of sustainability as being portrayed often as something having to do with taking cold showers, eating less meat and turning off the light at home as a means to save and reduce, why a new narrative should be focused on positives, such as how we can consume smarter and better.

Another aspect of the narrative of sustainability is that it currently might be too specialized to some. We Love People expressed a concern regarding sustainability that related to the complexity of the concept and the consequences of not operating sustainably (We Love People, 2017). In their practices, We Love People found it difficult to present sustainability in a fashion that would speak volumes to their clients, which they argued was because of the language of sustainability being too specialized and complex. In relevance, they presented the 17 SDGs as a possible solution to the narrative issues they had experienced, as they were of the opinion that their clients could relate more to the SDGs than the language of sustainability often presented by climate specialists (We Love People, 2017). Introducing the SDGs into the world of business via innovation might be a way of creating a new and positive narrative of sustainability, which might be interesting to investigate in future research.

9.4.4 Changing the Point of Departure

Throughout the thesis, we have appointed the framing of sustainability made by Elkington (1999) a great deal of value, why it would be interesting to research how sustainability could be connected with innovation if the perception of sustainability was different. Both Hawken (2010) and Adams et al. (2012) propose that innovation could take its point of departure in biomimicry. In relation to bridging sustainability, biomimicry seems interesting, as mentioned previously: "nature does not degrade the systems it relies on to survive" (Adams et al., 2012, p. 51), which seems quite fundamentally different from current production practices and the preceding innovation processes. Possible research could be made into how biomimicry could serve as a sustainable system that could drive innovation. In other words, instead of embedding sustainability into innovation processes, one could imagine an innovation lab already having employed a system that mimics nature whereof innovation could emerge.

9.4.5 Conscious Capitalism

For the innovation labs transitioning into more sustainable practices and moving further in the contexts of sustainability – considering the SOI literature – entails placing sustainability at the core their business, which ultimately changes the purpose of their business. Purpose driven companies might lead to the notion of *conscious capitalism,* which is a concept revolving around adopting sustainability parameters and making them the purpose of a firm (Mackey, 2011). Much in line with the notion of systems building in the SOI literature, conscious capitalism aims at moving beyond the boundaries of a single firm by influencing the systems that the firm is a part of. The idea of trade-offs in relation to sustainability in the world of business is abolished in conscious capitalism, as sustainability becomes an integral part of the firm's purpose, which inter alia is why innovation and the role of innovation labs within the context of acceptance of sustainability in conscious capitalism appear intriguing as a theme for future research. Similarly, the concept of conscious capitalism is interesting as a continuation of the findings of this thesis, as the language of sustainability might be clearer in conscious capitalism, thus, a more positive narrative might be created.

9.4.6 Circular Economy

Considering the aforementioned cradle-to-cradle design and biomimicry approach, we suggest that future research should be made into the possibilities of a *circular economy*. The concept appears to encapsulate cradle-to-cradle thinking and a holistic systems thinking approach. Townsend and Zarnett (2013) have proposed a set of design principles that might guide a circular economy, as they perceive it as a version 2.0 of capitalism. Some of these principles concern: less growth, but more wellbeing; a broader view of what capitalism means; holistic systems thinking; shared ownership and distribution of resources and wealth (Michael Townsend & Zarnett, 2013). Within the concept of a circular economy might be some possibilities of improving the conditions for innovation labs when wanting to innovate sustainably. Moreover, the circular economy might also enable a language of sustainability, as a means to move towards sustainable practices.

Indulging in research relating to the concept of a circular economy might pose questions of the legitimacy of Elkington's (1999) notion of sustainability as it is fairly rooted in a capitalistic mind-set, hence the legitimacy question would touch the fundamental understanding of sustainability aligned with the TBL agenda of this thesis. Townsend (2015) asks the question of whether it is possible to transition into a circular economy, where sustainability is at the core of everything, when much focus is still placed on financial capital. He also asks whether we might need to break with the idea of capitalism to truly transition into a sustainable economy (Townsend, 2015). The research into a circular economy could therefore consider how innovation labs and their relationship with sustainability might look in another economic system, as they might prove significantly different from the findings presented in this thesis.

10. Concluding Remarks

In this these, we have presented how 14 innovation labs in Copenhagen perceive sustainability and have analysed how they embed sustainability into their innovation processes. The focus on innovation labs in the thesis is based on their societal role and their influence over clients, which include among others: corporations, governmental departments and municipalities.

Overall, we did not find similar perceptions of sustainability among the innovation labs; though, we found that some labs have some articulated perceptions of sustainability within their organisation that correlate with our operational definition and the theoretical framework that we have drawn upon in this thesis. However, we found the majority of the labs to have unclear or implicit perceptions of sustainability internally in the labs, which might indicate a need of a shared language of sustainability.

Through our qualitative research and analysis, we found that some innovation labs have embedded sustainability at the core of their business, and into their innovation processes, which might be a result of having embedding sustainability at the core of the business. These innovation labs are Spark CPH, Bespoke and Space10, which also have established a shared language of sustainability. We found that to establish a shared language of sustainability can be valuable when moving towards sustainable practices, and, ultimately, to embed sustainability parameters into the core of a business; a shared language of sustainability can facilitate the communication from executives, which need to exhibit commitment to the sustainability agenda. Besides the positive effect of enabling executives to communicate sustainability commitments, a shared language of sustainability can also bring about the enablement of tools or capabilities for the innovation lab to create sustainable solutions for its clients. The three innovation labs mentioned can be characterised as systems builders, in accordance with the theory of SOI, because they are as deep into the sustainability transition as seemingly possible; they are trying to influence the systems they are part of as well as reaching into other systems they affect indirectly. The benefits and competitive advantages of embracing a holistic approach to sustainability – including all elements of the TBL agenda – will, according to the literature presented in chapter 5, be quite substantial on a long-term basis. To take on a long-term perspective, is crucial for any innovation lab transitioning its practices into sustainable practices, as the perspective on time has shown to be essential considering the theories of sustainability employed in the thesis. For instance, a broad stakeholder perspective

adopted by an innovation lab can benefit the lab in sustaining itself on all three bottom lines on a long-term basis.

Contrarily to Spark CPH, Bespoke and Space10, we have identified Designit, CHI and IIAB as being at the opposite end of the matrix (see fig. 12) that we created to provide an overview of the innovation labs in relation to two criteria: sustainable practices and whether they have established a shared language of sustainability. Designit, CHI and IIAB are quite possibly outside the range of the theories employed to conduct the analysis of the thesis, as they e.g. have yet to realise the potential and importance of sustainability, though, the three labs have been interesting for the overall research as they have clarified the distinctions between the 14 innovation labs, accentuating the specificities of each lab. However, the three labs are within reach to take initial steps into a sustainability transition, as we have discussed in chapter 9.

The Climate Unit, and several of the labs that we positioned in the lower right square of the aforementioned matrix, are quite far into the sustainability transition, though we find that they all lack a holistic perception of sustainability, as they perceived sustainability as having mostly to do with environmental factors. We found, that the environmental considerations by many of the labs might be accredited to a 'Danish context of sustainability'. Our research indicated this to be constituted in the Danish design heritage, Denmark's long history of transitioning into renewable energy, such as wind power, as well as founded in the environmental plans by the Municipality of Copenhagen. We have discussed the notion of 'Danish context of sustainability', which was mentioned by several of the interviewees in the research sample, as it might be a pretext for the innovation labs to take the needed innovative action to transition into or further into the sustainability agenda. Moreover, we found that Hatch & Bloom, Fjord, Smith Innovation, Innovationlab, Area9, Leo Innovation Lab and to some extent the Climate Unit lack a shared language of sustainability that includes all themes of the TBL agenda, as many of the labs do have sustainable practices, but work rather implicitly with sustainability – and in most instances narrowly with environmental aspects of sustainability.

Fairly distinctive from the other innovation labs in our research sample, we found We Love People to have established a type of language of sustainability by adopting the terminology of the 17 SDGs formulated by the UN, without having moved as far into the sustainability agenda as many of the other innovation labs have. Similar to We Love People, we found that Spark CPH, Bespoke and Space10 have adopted terminology for the enablement of a shared language of sustainability. Spark CPH has adopted the terminology of the B-Corp framework; Bespoke and Space10 appear to

have adopted the terminology of the TBL or 3Ps to be able to consider future trends and macro shifts related to sustainability occurring on a global scale.

Having accounted for the innovation labs' perceptions of sustainability, established whether there exists a shared language internally in the labs and whether the labs' practices can be characterised as sustainable, we analysed how the labs might be positioned in relation to the theoretical framework presented in chapter 5. We related the positioning presented in the provided matrix and the qualitative data from conducting semi-structured interviews first to the theory of the sustainability sweet spot articulated by Savitz (2007) (see fig. 13). Incorporating the sustainability sweet spot into our matrix, served as a means to visualize which of the labs operate within the sustainability sweet spot. Operating within the sweet spot is preferable according to Savitz (2007), as it is within this space where the pursuit of profit merges with the pursuit of the desires and needs of stakeholders. For the purpose of the thesis, we have – similar to Savitz (2007) – understood *stakeholders* in a broad sense including e.g. the planet (environment), employees, general society in which the lab operates, shareholders etc. In relevance to the innovation labs in our research sample, we found a correlation between having established a shared language of sustainability and having sustainable practices, considering a holistic notion of sustainability. Improving the shared language and improving the sustainable practices appear to broaden the stakeholder perspective, resulting in the labs moving into the sustainability sweet spot. Accordingly, Spark CPH, Bespoke, Space10, and the Climate Unit are operating within the sustainability sweet spot. On the edge of the sweet spot, we found Hatch & Bloom, Fjord, Smith Innovation, Innovationlab and We Love People since Savitz (2007) argue that firms operating within the sweet spot need to consider a holistic TBL agenda. We found the labs to either perceive sustainability in a rather narrow sense relating to solely environmental concerns or that they were lacking the explicitness of their doings, which seems fundamental to advance into the space of the sweet spot.

In the analysis, we also related the findings of our research to the literature of SOI and the five stages of change articulated by Adams et al. (2012) and Nidumolu et al. (2009) respectively. We found that it seemed fruitful to consider the two theories in relation to the matrix that we created to position the labs. We found a correlation between the upper right square of the matrix and the context of systems building and the last couple of stages in the five stages of change model, where we have positioned Spark CPH, Space10 and Bespoke.

Moreover, we found the context of organisational transformation, including the labs we previously analysed, to be on the edge of the sustainability sweet spot, as this context is fairly broad in terms of sustainability factors that need to be taken into account. For instance, we found that all these labs have become aware of the importance of sustainability, and that moving towards more sustainable practices is a necessary course of action to succeed in the future. Moreover, collaboration is emphasised in this context, which we found the labs, positioned here, to understand and consider in their practices. Similarly, they appear to grasp the level of influence these labs possess over clients, which is essential when operating within this context, as firms should actively use their influence to promote the sustainability agenda – as the sustainability perspective becomes more and more systemic. Overall for the labs analysed to be operating within the organisational transformation context, we found that they can be perceived as being on the third stage of the five stages of change, while some of the labs are touching on elements in the succeeding stages – as the labs all have their specificities. Exemplarily, Smith Innovation is found to be at the third stage, since they focus on designing or re-designing materials and services for the construction industry, yet the lab reaches into the following stage, as they perceive innovating via collaboration in consortiums as beneficial and necessary.

Designit, CHI, IIAB and Leo Innovation Lab are found to be outside of the scope of the five stages of change model, as they have yet to perceive compliance as an opportunity to innovate sustainable solutions that might move them further into the next stages. Quite similar in relation to the contexts accounted for in the SOI literature; we found it somehow difficult to position Designit, CHI and IIAB in relation to any of the contexts, as none of the three labs expressed sustainability concerns in relation to how they operate. Area9 on the other hand is operating in the context of operational optimization, as the lab is working towards optimizing operations in relation to social sustainability parameters.

The analysis of the 14 innovation labs in relation to the theoretical framework, considering the SOI contexts and the five stages of change model, has served as means to identify how the labs have embedded sustainability into their innovation processes, if at all, by looking at the various parameters needed to be considered according to the theories in relation to each of the innovation labs.

Based on the analysis and our research sample, we have provided a discussion where we argue that the establishment of a shared language of sustainability appears paramount in order to

enable the sustainability transition. Underpinning our argument is the matrix and analysis provided, which exhibits the correlation of shared language of sustainability and sustainable practices, all together with a statement made by Peter from IIAB, in which he argued that he lacked tools and means to articulate a sustainability perception, which consequently makes it quite impossible to work with sustainability in projects at IIAB. Furthermore, we argue that to establish a shared language of sustainability within the innovation labs might enable the labs to work more progressively towards even more sustainable practices, as such a language can work as a means assure that employees all possess knowledge of sustainability.

As a result of having positioned the different labs in relation to the previous mentioned theoretical framework, we discussed various actions that could be taken by the labs to move towards more sustainable practices. Besides proposing different actionable themes, these suggestions also work as a provider of indicators of how sustainability might be embedded into innovation processes – specifically the design thinking approach. Having analysed how some of the labs embed sustainability into their innovation processes, the discussion was for reflective reasons, and functioned as a means to suggest to innovation labs, which have yet to embed sustainability into their processes, how they might undertake it, considering the design thinking approach. Essential to our research has been the design thinking approach to innovation, as all the identified labs employ this approach or some variety thereof. Hence, it appeared appropriate to visualise and discuss how sustainability might be embedded into the design thinking approach considering the TBL agenda, partly because of all the labs employed the method, but also because many of the labs had difficulty articulating how to work with sustainability as a result of its complexities. Consequently, we proposed how innovation labs might embed sustainability parameters into the design thinking approach (fig. 15). Our proposal builds on the human-centred design thinking approach, which appears as a positive trait in relation to sustainability, though, we argue that it is required that the designer ask *appropriate* questions, as to ensure inclusion of either environmental or social sustainability concerns. Themes relating to the economic bottom line are considered by default in the design thinking approach at the latter steps of the approach, which is why we suggest social and environmental concerns to be embedded rather early in the process – and be kept in mind throughout the iterations – as the implementation space arguably will be more successful when one of the two sustainability themes are incorporated from the beginning, and the other embedded e.g. at the prototyping step. In more broad terms, we find the design thinking approach suitable to somehow bridge sustainability and innovation, as the approach allows for reflection and iteration,

which is why, e.g., unintended consequences of innovations can, to some extent, be disclosed as a means to make innovation even more sustainable.

11. Reference list of Interviews

NOTE: The audio files take a few seconds to fully load when 'play' is pressed, and they open optimally using the Google Chrome browser.

Area9 (2017, March 10), Interview conducted with Niels, Audio recording accessible via: https://goo.gl/Lolv8K

Bespoke, (2017, March 24), Interview conducted with Rune, Audio recording accessible via: https://goo.gl/3fAzVj

CHI (Copenhagen Health Innovation) (2017, March 22), Interview conducted with Anette, Audio recording accessible via: https://goo.gl/92FRVL

Climate Unit (2017, March 9), Interview conducted with Per, Audio recording accessible via: https://goo.gl/zZ9xsr

Designit (2017, March 22), Interview conducted with Asger, Audio recording accessible via: https://goo.gl/q0R9NE

Fjord (2017, March 6), Interview conducted with Mikkel, Audio recording accessible via: https://goo.gl/rfCKwd

Hatch & Bloom (2017, April 7), Interview conducted with Mads, Audio recording accessible via: https://goo.gl/OEdHbq

Innovationlab (2017, March), Interview conducted with Martin, Audio recording accessible via: https://goo.gl/onzFTE

IIAB (Is It A Bird) (2017, February 7), Interview conducted with Peter, Audio recording accessible via: https://goo.gl/1vNu4j

Leo Innovation Lab (2017, March 14), Interview conducted with Max, Audio recording accessible via: https://goo.gl/Gv6IuR

Smith Innovation (2017, March 15), Interview conducted with Sofie, Audio recording accessible via: https://goo.gl/yg5AhP

Space10 (2017a, March 7), Interview conducted with Simon, Audio recording accessible via: https://goo.gl/XpybB3

Space10 (2017b, March 21), Interview conducted with Kaave, Audio recording accessible via: https://goo.gl/9tFxsS

Spark CPH (2017, March 17), Interview conducted with Frederikke, Audio recording accessible via: https://goo.gl/kyXGYD

We Love People (2017, March 7), Interview conducted with Gry and Christina, Audio recording accessible via: https://goo.gl/BqF3LX

12. Bibliography

Adams, R., Bessant, J., Jeanrenaud, S., Overy, P., & Denyer, D. (2012). Innovating for sustainability: a systematic review of the body of knowledge.

Afuah, A., & Tucci, C. L. (2012). Crowdsourcing As a Solution to Distant Search. *Academy of Management Review*, *37*(3), 355–375. https://doi.org/10.5465/amr.2010.0146

Ameer, R., & Othman, R. (2012). Sustainability Practices and Corporate Financial Performance: A Study Based on the Top Global Corporations. *Journal of Business Ethics*, *108*(1), 61–79. https://doi.org/10.1007/s10551-011-1063-y

B Corporation. (2014, January 9). What are B Corps? | B Corporation. Retrieved February 21, 2017, from https://www.bcorporation.net/what-are-b-corps

B Corporation. (2017). About the B Impact Assessment (BIA) – B Lab - Using Business as a Force for Good. Retrieved April 9, 2017, from https://b-lab.uservoice.com/knowledgebase/articles/799551-about-the-b-impact-assessment-bia

Baregheh, A., Rowley, J., & Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management Decision*, *47*(8), 1323–1339. https://doi.org/10.1108/00251740910984578

BCG. (2017). Innovation & Product Development Solutions - BCG Tools & Resources. Retrieved April 8, 2017, from https://www.bcg.com/expertise/capabilities/innovation-product-development/solutions.aspx

Bebbington, J., & Gray, R. (1993). Corporate accountability and the physical environment: Social responsibility and accounting beyond profit. *Business Strategy and the Environment*, *2*(2), 1–11. https://doi.org/10.1002/bse.3280020201

Berger, P. L., & Luckmann, T. (1966). *The social construction of reality: A treatise in the sociology of knowledge*. Garden City, NY: First Anchor.

Bespoke CPH. (2017). Academy. Retrieved January 27, 2017, from http://www.bespokecph.com/academy/

Bhattacharya, C. B., & Polman, P. (2017). Sustainability Lessons From the Front Lines. *MIT Sloan Management Review*, *58*(2), 71–78.

Bonini, S., & Görner, S. (2011, October). The business of sustainability: McKinsey Global Survey results | McKinsey & Company. Retrieved January 25, 2017, from http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/the-business-of-sustainability-mckinsey-global-survey-results

Brown, T., & Wyatt, J. (2010). Design Thinking for Social Innovation. *Stanford Social Innovation Review*, *8*(1). Retrieved from http://ssir.org/articles/entry/design_thinking_for_social_innovation

Brundtland, G. H. (1987). *Report of the World Commission on environment and development:" our common future."* United Nations.

C40. (2017, February 6). C40: C40 Office in Copenhagen to Connect Cities and Businesses to Tackle Climate Change. Retrieved February 28, 2017, from http://www.c40.org/blog_posts/c40-office-in-copenhagen-to-connect-cities-and-businesses-to-tackle-climate-change

Callon, M. (1998). An essay on framing and overflowing: economic externalities revisited by sociology. *The Sociological Review*, *46*(S1), 244–269.

Chesbrough, H. (2003). The era of open innovation. *Sloan Management Review*, *Spring*, 35–41.

Clark, G. L., Feiner, A., & Viehs, M. (2015). From the stockholder to the stakeholder: How sustainability can drive financial outperformance.

Clark, J. M. (1916). The Changing Basis of Economic Responsibility. *Journal of Political Economy*, *24*(3), 209–229.

Cooper, C. (1992). The Non and Nom of Accounting for (M)other Nature. *Accounting, Auditing & Accountability Journal*, *5*(3). https://doi.org/10.1108/09513579210017361

Cooper Hewitt. (2012). *Bill Moggridge 1943-2012*. Retrieved from https://www.youtube.com/watch?v=PWkk9sr_GOs

Copenhagen Capacity. (2016). IBM chooses Copenhagen for innovation centre. Retrieved December 12, 2016, from http://www.copcap.com/invest-in-greater-copenhagen/case-stories/ibm-chooses-copenhagen-for-innovation-centre

Copenhagen Municipality. (2016a). Bliv grøn virksomhed. Retrieved December 15, 2016, from http://www.kk.dk/groenneerhverv

Copenhagen Municipality. (2016b). Udvikling af din virksomhed. Retrieved December 12, 2016, from http://www.kk.dk/indhold/udvikling-af-din-virksomhed

Copenhagen Municipality. (2017). *Copenhagen Urban Development*. Retrieved from https://www.youtube.com/watch?v=kUKjzhiT4To

Copenhagen Solutions Lab. (2016). Home. Retrieved December 15, 2016, from http://cphsolutionslab.dk/

Cornelissen, J. (2011). *Corporate communication: a guide to theory and practice* (3rd ed). Thousand Oaks, CA: SAGE Publications.

Creswell, J. W. (2007). *Qualitative inquiry & research design: choosing among five approaches* (2nd ed). Thousand Oaks: Sage Publications.

Crutzen, P. J. (2002). Geology of mankind. *Nature*, *415*(6867), 23–23.

Delmas, M. A., & Burbano, V. C. (2011). The Drivers of Greenwashing. *California Management Review*, *54*(1), 64–87. https://doi.org/10.1525/cmr.2011.54.1.64

Deloitte. (2017). Consulting | Deloitte | Global consulting services, reports, and industry insights. Retrieved March 7, 2017, from https://www2.deloitte.com/dk/da/pages/strategy/solutions/consulting.html

denmark.dk. (2015, November). Wind Energy -The official website of Denmark. Retrieved April 28, 2017, from http://denmark.dk/en/green-living/wind-energy/

DesignThink Movie. (2012). *Design & Thinking Official Trailer*. Retrieved from https://www.youtube.com/watch?v=uilcaXYnluU

d.school Paris. (n.d.). The Design Thinking Process. Retrieved April 8, 2017, from http://www.dschool.fr/design-thinking/

Elkington, J. (1999). *Cannibals with forks: the triple bottom line of 21st century business* (Reprint). Oxford: Capstone.

Elkington, J. (2012). *The zeronauts: breaking the sustainability barrier*. London ; New York: Routledge.

ETUC. (2011, December 8). Renewed EU strategy 2011-14 for Corporate Social Responsibility (CSR) | ETUC. Retrieved March 28, 2017, from https://www.etuc.org/documents/renewed-eu-strategy-2011-14-corporate-social-responsibility-csr#.WNojUVI63GK

Evensen, J. (2015, December 17). Forbes: Denmark World's Best Country for Business - Invest in Denmark. Retrieved December 12, 2016, from http://www.investindk.com/News-and-events/News/2015/Forbes-Denmark-worlds-best-country-for-business-2015

Forbes. (2015, December 16). Best Countries for Business. Retrieved December 12, 2016, from http://www.forbes.com/best-countries-for-business/

Friedman, M. (1970, September 13). The Social Responsibility of Business is to Increase its Profits. *The New York Times Magazine*.

Fuller, C., Griffin, T., & Ludema, J. D. (2000). Appreciative future search: Involving the whole system in positive organization change. *Organization Development Journal*, *18*(2), 29–41.

Gendron, G., & Burlingham, B. (1989). The entrepreneur of the decade. (Cover story). *Inc.*, *11*(4), 114.

Giolla-Møller, T. (2016). Copenhagen facts. Retrieved December 12, 2016, from http://international.kk.dk/artikel/copenhagen-facts

Gormsen, C. (2015, September 1). Regeringen vil spare 340 mio. på klima og miljø. Retrieved February 28, 2017, from http://www.altinget.dk/artikel/regeringen-vil-spare-340-mio-paa-klima-og-miljoe

Hamilton, C., Bonneuil, C., & Gemenne, F. (Eds.). (2015). *The anthropocene and the global environmental crisis*. London ; New York: Routledge.

Hansen, E. G., & Grosse-Dunker, F. (2013). Sustainability-oriented innovation. In *Encyclopedia of corporate social responsibility* (pp. 2407–2417). Springer.

Hatch & Bloom. (2017). Hatch & Bloom | SALONS. Retrieved January 27, 2017, from http://www.hatchandbloom.com/salons/

Hawken, P. (2010). *The ecology of commerce: a declaration of sustainability* (Rev. ed). New York: Harper Business.

Hippel, E. von. (2005). *Democratizing innovation*. Cambridge, Mass: MIT Press.

Hopkins, M. (2007). *Corporate social responsibility and international development: is business the solution?* London ; Sterling, VA: Earthscan.

Huston, L., & Sakkab, N. (2006). Connect and develop. *Harvard Business Review*, *84*(3), 58–66.

IDEO (Ed.). (2015). *The field guide to human-centered design: design kit* (1st. ed). San Francisco, Calif: IDEO.

IIAB. (2016, October 24). IIAB Talks #5 – Finansiel Innovation. Retrieved January 27, 2017, from http://isitabird.dk/nyheder/iiab-talks-5-finansiel-innovation/

Innovationlab. (2017). Events | Workshops, Foredrag, Spil, Strategi & Web udvikling | Innovation Lab. Retrieved January 27, 2017, from https://ilab.dk/events

Jay, J., & Gerard, M. (2015). Accelerating the Theory and Practice of Sustainability-Oriented Innovation.

Karnani, A. (2014). Corporate social responsibility does not avert the tragedy of the commons. Case study: Coca-Cola India. *Economics, Management, and Financial Markets*, *9*(3), 11–23.

Kvale, S., & Brinkmann, S. (2015). *InterViews: learning the craft of qualitative research interviewing* (Third edition). Los Angeles: Sage Publications.

Laszlo, C., & Cooperrider, D. L. (2010). Creating sustainable value: A strength-based whole system approach. In T. Thatchenkery, D. L. Cooperrider, & M. Avital (Eds.), *Advances in Appreciative Inquiry* (Vol. 3, pp. 17–33). Emerald Group Publishing Limited. https://doi.org/10.1108/S1475-9152(2010)0000003006

Laszlo, C., & Zhexembayeva, N. (2011). *Embedded sustainability: the next big competitive advantage*. Stanford, California: Stanford Business Books.

Lehman, G. (1996). ENVIRONMENTAL ACCOUNTING: POLLUTION PERMITS OR SELLING THE ENVIRONMENT. *Critical Perspectives on Accounting*, *7*(6), 667–676. https://doi.org/10.1006/cpac.1996.0075

leoinnovationlab.com. (2017). About – LEO Innovation Lab. Retrieved April 30, 2017, from https://leoinnovationlab.com/about/

Mackey, J. (2011). What Conscious Capitalism Really is: A Response to James O'Toole and David Vogel's "Two and a Half Cheers for Conscious Capitalism." *California Management Review*, *53*(3), 83–90. https://doi.org/10.1525/cmr.2011.53.3.83

Mahoney, L. S., Thorne, L., Cecil, L., & LaGore, W. (2013). A research note on standalone corporate social responsibility reports: Signaling or greenwashing? *Critical Perspectives on Accounting*, *24*(4–5), 350–359. https://doi.org/10.1016/j.cpa.2012.09.008

McCarthy, L., & Muthuri, J. N. (2016). Engaging Fringe Stakeholders in Business and Society Research: Applying Visual Participatory Research Methods. *Business & Society*. https://doi.org/10.1177/0007650316675610

McDonough, W., & Braungart, M. (2013). *The upcycle* (First edition). New York: North Point Press, a division of Farrar, Straus and Giroux.

McKinsey&Company. (2017). Our People | McKinsey Design | McKinsey & Company. Retrieved March 7, 2017, from http://www.mckinsey.com/business-functions/mckinsey-design/our-people

Morhardt, J. E., Baird, S., & Freeman, K. (2002). Scoring corporate environmental and sustainability reports using GRI 2000, ISO 14031 and other criteria. *Corporate Social*

Responsibility and Environmental Management, *9*(4), 215–233. https://doi.org/10.1002/csr.26

NBS. (2016). About NBS. Retrieved January 25, 2017, from http://nbs.net/about/

Nidumolu, R., Prahalad, C. K., & Rangaswami, M. R. (2009). Why sustainability is now the key driver of innovation. *Harvard Business Review*, *87*(9), 56–64.

Norman, W., & MacDonald, C. (2004). Getting to the Bottom of "Triple Bottom Line." *Business Ethics Quarterly*, *14*(2), 243–262. https://doi.org/10.5840/beq200414211

OpenIDEO. (2016). How it works. Retrieved December 15, 2016, from https://challenges.openideo.com/content/how-it-works

Orsato, R. J. (2009). *Sustainability strategies: when does it pay to be green?* Houndmills, Basingstoke, Hampshire ; New York: Palgrave Macmillan.

Oxford Dictionaries. (2016a). innovate - definition of innovate in English | Oxford Dictionaries. Retrieved December 14, 2016, from https://en.oxforddictionaries.com/definition/innovate

Oxford Dictionaries. (2016b). innovation - definition of innovation in English | Oxford Dictionaries. Retrieved December 14, 2016, from https://en.oxforddictionaries.com/definition/innovation

Pedersen, S. B. (2016). User-Centred Design - Invest in Denmark. Retrieved December 12, 2016, from http://www.investindk.com/Clusters/Design/User-Centred-Design

Pisano, G. P., & Verganti, R. (2008). Which kind of collaboration is right for you. *Harvard Business Review*, *86*(12), 78–86.

Polman, P. (2015). Redefining Business Purpose - Driving Societal and Systems Transformation. In *Reframing the Game The Transition to a New Sustainable Economy.* (pp. 9–16). Greenleaf Pubns.

Porter, M. E., & Kramer, M. R. (2011). The big idea: Creating shared value. *Harvard Business Review*, *89*(1), 62–77.

Porter, M. E., & Van der Linde, C. (1995). Green and competitive: ending the stalemate. *Harvard Business Review*, *73*(5), 120–134.

Ramboll & City of Copenhagen. (2014). *Copenhagen: Solutions For Sustainable Cities* (No. 3rd edition). Copenhagen. Retrieved from http://international.kk.dk/sites/international.kk.dk/files/Copenhagen%20Solutions%20for%20Sustainable%20cities.pdf

Rangan, K., Chase, L., & Karim, S. (2015). The truth about CSR. *Harvard Business Review*, *93*(1/2), 40–49.

Reinhardt, F. (1999). Bringing the environment down to earth. *Harvard Business Review*, *77*(4), 149–57, 186.

Richardson, K., Steffen, W., Schellnhuber, H. J., Alcamo, J., Barker, T., Kammen, D. M., … Osman-Elasha, B. (2009). *Climate change-global risks, challenges & decisions: synthesis report*. Museum Tusculanum.

Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, *4*(2), 155–169.

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., … Schellnhuber, H. J. (2009). A safe operating space for humanity. *Nature*, *461*(7263), 472–475.

Savitz, A. W. (2007). The sustainability sweet spot. *Environmental Quality Management*, *17*(2), 17–28. https://doi.org/10.1002/tqem.20161

Schensul, S. L., Schensul, J. J., & LeCompte, M. D. (1999). *Essential ethnographic methods: observations, interviews, and questionnaires*. Walnut Creek, Calif: AltaMira Press.

Schilling, M. A. (2013). *Strategic management of technological innovation* (4th ed). New York, NY: McGraw-Hill.

Schultz, K. (2016, February). Danish labour market - top of Europe - Invest in Denmark. Retrieved February 28, 2017, from http://www.investindk.com/Establishing-a-business-in-Denmark/The-Danish-Labour-Market

Schumpeter, J. A. (1947). The creative response in economic history. *The Journal of Economic History*, *7*(2), 149–159.

Seebode, D., Jeanrenaud, S., & Bessant, J. (2012). Managing innovation for sustainability: Managing innovation for sustainability. *R&D Management*, *42*(3), 195–206. https://doi.org/10.1111/j.1467-9310.2012.00678.x

Simms, D. (2008). Interviews. R. Thorpe & R. Holt (Eds.), *The Sage dictionary of qualitative management research* (pp. 116–118). London: SAGE.

Spark CPH. (2017). We Drive Sustainable Change | Spark. Retrieved January 27, 2017, from http://www.sparkcph.dk/

Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., … de Wit, C. A. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, *347*(6223), 1259855.

Szczepanska, J. (2017, January 4). Design thinking origin story plus some of the people who made it all happen. Retrieved February 1, 2017, from https://medium.com/@szczpanks/design-thinking-where-it-came-from-and-the-type-of-people-who-made-it-all-happen-dc3a05411e53#.3mbtd3q32

Thatchenkery, T., Avital, M., & Cooperrider, D. L. (2010). Introduction to positive design and appreciative construction: From sustainable development to sustainable value. In T. Thatchenkery, D. L. Cooperrider, & M. Avital (Eds.), *Advances in Appreciative Inquiry*

(Vol. 3, pp. 1–14). Emerald Group Publishing Limited. https://doi.org/10.1108/S1475-9152(2010)0000003005

Townsend, M. (2015). *Reframing the game: the transition to a new sustainable economy*. Sheffield: Greenleaf Publ.

Townsend, M., & Zarnett, B. (2013, October). A Journey in Search of Capitalism 2.0 - Part 1 – Blueprints for a Sustainable Economy. earthshine. Retrieved from http://www.earthshinesolutions.com/docs/A-Journey-in-Search-of-CAP2_Clean-Slate_Oct_2013.pdf

Tracy, S. J. (2013). *Qualitative research methods: collecting evidence, crafting analysis, communicating impact*. Chichester, West Sussex, UK: Wiley-Blackwell.

UN. (2016a). Sustainable development goals - United Nations. Retrieved January 25, 2017, from http://www.un.org/sustainabledevelopment/sustainable-development-goals/

UN. (2016b). Sustainable Development Goals: 17 Goals to Transform Our World. Retrieved January 25, 2017, from http://www.un.org/sustainabledevelopment/

WBCSD. (2017). About us. Retrieved January 25, 2017, from http://www.wbcsd.org/Overview/About-us

We Love People. (2017). Approach. Retrieved March 7, 2017, from https://welovepeople.dk/approach/

We Mean Business. (2015). *The Climate Has Changed: Why bold, low-carbon action makes good business sense*.

Wenande, C. (2016, October 5). The Copenhagen Post. Retrieved December 12, 2016, from www.cphpost.dk

Whelan, T., & Fink, C. (2016, October 21). The Comprehensive Business Case for Sustainability. Retrieved December 18, 2016, from https://hbr.org/2016/10/the-comprehensive-business-case-for-sustainability

Whitfield, R., & McNett, J. M. (2014). *A primer on sustainability: in the business environment*. Retrieved from http://site.ebrary.com/id/10821752

Willard, B. (2002). *The sustainability advantage: seven business case benefits of a triple bottom line*. Gabriola Island, B.C: New Society Publ.

Worley, C. G., & Lawler, E. E. (2010). Built to Change Organizations and Responsible Progress: Twin Pillars of Sustainable Success. In W. A. Pasmore, A. B. (Rami) Shani, & R. W. Woodman (Eds.), *Research in Organizational Change and Development* (Vol. 18, pp. 1–49). Emerald Group Publishing Limited. https://doi.org/10.1108/S0897-3016(2010)0000018005

Zedlmayer, G. (2015). Purpose at the Heart of Strategy - Creating a Sustainable Business while Solving the World's Challenges. In *Reframing the Game The Transition to a New Sustainable Economy.* (pp. 120–128). Greenleaf Pubns.

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Innovationlab	info@innovationlab.dk	Vesterbrogade 26 - 1620 København V	https://ilab.dk	2001	Works with both private and public organizations, and with service- and product development, art/culture, process and production. Digital focus. Works with clients via workshops, seminars, keynotes, projects and articles.	Operates in Aarhus, Copenhagen, Stavanger, Dubai, India. Has 25 employees.	Innovationlab is an innovation house that helps organizations think and create in new ways in a world that is constantly changing.	SonyEricsson, Samsung, Mars, B&O, Oticon, AP Møller Mærsk

Contacted	Planned interview	Done interview with
Mads Thimmer, Peter Froberg, info@ilab.dk and Martin Schorling	Martin Schorling	Martin Schorling

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Space10	discover@space10.io	Flæsketorvet 10, 1711 Copenhagen V	https://www.space10.io	2015	Investigates the future of urban living through a series of labs. Each lab sets out to tackle a specific challenge, and unfolds through a number of talks, workshops, pitch nights, design residencies, exhibitions, collaborative projects, and other formats.	Space10 serves as an external innovation hub for IKEA. Space10 is conceptualised and facilitated by Rebel Agency.	Space10 is a future-living lab and exhibition space in the heart of Copenhagen. Their mission is to investigate the future of urban living by detecting major challenges that will impact people on a global scale, and exploring possible solutions. The overall goal is to create opportunities for a better and more sustainable way of living in the future.	Space10 have collaborators such as artists, designers, photographers etc. to take part in various projects.

Contacted	Planned interview	Done interview with
Carla Hjort (referred us to Simon Caspersen), Guillaume Charny-Brunet and Kaave Pour	Simon Caspersen and Kaave Pour	Simon Caspersen and Kaave Pour

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Is It A Bird	info@isitabird.dk	Trekronergade 149C, 2500 Valby	http://isitabird.dk/en	2011	IS IT A BIRD identify patterns in needs, behaviour and aspirations among people. User insights are our starting point and serve as our guideline in the development and innovation of organisations, products and services. We work from an exploratory and inquisitive point of view and always translate our findings into concrete concepts and solutions.	Vision: to become the leading innovation agency in Denmark, where highly intelligent and creative people thrive and leave their mark on the world.	IS IT A BIRD believes that the solutions of the future can't always build on past experience, and so we must be open to new thinking. It takes courage and will-power to break free from recreating what already exists and, instead, create the solutions of the future.	Carlsberg, DSB, DONG Energy, Coloplast, Google, Municipality of Copenhagen, Falck, Usercenter 'Development of cemetaries in Copenhagen'.

Contacted	Planned interview	Done interview with
Peter Nørregaard	Peter Nørregaard	Peter Nørregaard

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Spark CPH	info@sparkcph.dk	Baggesensgade 4C 1st floor, 2200 Copenhagen N	http://www.sparkcph.dk	2009	Spark CPH work with: Company structure and responsibility, e.g. developing a radically different core foundation for private-sector companies, based on the principles of the B-Corporation movement. - Sustainable business models, e.g. in the art and cultural worlds, or in cooperation with voluntary organizations, NGOs and foundations. - Holistic benefits realization and operations management in the public sector, e.g. new user needs and corresponding value propositions.	From growth to value – long-term focus on developing shared ressources. - Spark is about more than being good at change. We also want to create good change.	future. The organizational spirit has a social awareness and their professionalism inspires and mobilizes large groups of people. We take responsibility in society, we take stands and we rethink organizations, solutions and value propositions within a sustainable perspective. Spark is a fourth-sector company driven by a spectrum of values spanning the public, private and social business sectors.	Theater Rio Rose, State Department, Ministry of environment, Danish Social-Liberal Party, University College Sjælland, DONG Energy, Roskilde Festival, Ermenogildo Zegna.

Contacted	Planned interview	Done interview with
Frederikke Aasted and Nille Skalts	Frederikke Aasted	Frederikke Aasted

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Copenhagen Health Innovation (CHI)	(Director) anette.birck@sund.ku.dk	Henrik Pontoppidans Vej 6, 2. 2200 København	http://copenhagenhealthinnovation.dk	Spring 2016	Vi vil udvikle nye sundhedsløsninger i samspil med praksis, innovationsmiljøet og industrien til gavn for patienter og borgere.	Copenhagen Health Innovation wants to be the leading platform for health innovation in Scandinavia.	Partnership between several universities and educational institutions. Department at Copenhagen University	Projects: Health challenges in education. Health dialouge on social media. Quality assurance of colonoscopy

Contacted	Planned interview	Done interview with
Maja Jensen and Anette Birck	Anette Birck	Anette Birck

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Designit	copenhagen@designit.com	Bygmestervej 61, 2400 Copenhagen NV	https://designit.com	1990/2013	Our process is deeply co-creation oriented, involving both our clients and their customers from early insights to final implementation.	Design isn't about beautification, it's about transformation, driving growth and change across industries and societies. Design has the power to spark not only business transformation, but social transformation.	Designit is a global strategic design firm. We lead business transformation projects of all sizes, creating unified product-service experiences that are driven by strategy and deliver bottom-line results.	Call Me, Radiometer, BVC, VoluSense, L'Oreal, Cisco, Audi, Harman, Jyske Bank, EU Commission, Mols-Linien, Novo Nordisk, Tv2, Grundfos, Vestas, Royal Unibrew, Danske Bank, DR, Metroselskabet

Contacted	Planned interview	Done interview with
Asger Østerbæk	Asger Østerbæk	Asger Østerbæk

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Smith Innovation	INFO@SMITHINNOVATION.DK	RØNNEGADE 1, 5. SAL, 2100 KØBENHAVN Ø	http://smithinnovation.dk/vores-tilgang	2009	Smith is the construction industry's problem solver, which is passionate about realizing the vision of a more sustainable, efficient and value creating construction industry. Smith believes that the industry needs a long-term and strategic focus on development, where the opportunities are in the centre - and not the limitations. This demands that several perspectives combine	We know that an idea is no better than its ability to mobilize resources through its entire project run. Our innovation model is because of that fitted to the journey; from idea to solutions that creates value for clients and end users.	Smith has in-depth knowledge about the construction industry and solid experience with innovation management and projects, which in combination creates the perfect conditions for innovation in a transparent framework.	Ny Hospital Hvidovre, Architectural policies for the Municipality of Copenhagen, NærHeden, Ejby Masterplan, Xella, etc.

Contacted	Planned interview	Done interview with
Sofie Stilling	Sofie Stilling	Sofie Stilling

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Fjord	Camilla Evald, Office Manager: camilla.evald@accenture.com	SOHO, Flæsketorvet 68, 1. sal, 1711 København V	https://www.fjordnet.com/offices/copenhagen/	Unknown	Both emotion and logic are used to meld data and creativity. Well-tested methodologies and design thinking deliver strategic breakthroughs. Our cross-disciplinary, cross-cultural and ultra-curious teams help our clients answer critical questions about what their users need and how to organise a service provision around those needs.	By collaborating with Accenture, we bring together all of the components needed for meaningful transformation. - Fjord has innovation labs in several cities around the world.	We put design at the heart.	None visible on website

Contacted	Planned interview	Done interview with
Camilla Evald and Mikkel Rathje	Mikkel Rathje	Mikkel Rathje

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Area9	INFO@AREA9INNOVATION.COM	GALIONSVEJ 37, 1437 COPENHAGEN K	http://area9innovation.com (Information retrieved December 2016)	At least 20 years old	Customer collaboration, sprint methods, specialized in digital services for educational purposes.	Digital Innovation Lab	We are a team of tightly knit experts with a clear vision: To crush difficult problems with science! - "Cut costs by boosting efficiency"	McGraw-Hill Education, Laerdal Medical, The New England Journal of Medicine

Contacted	Planned interview	Done interview with
info@area9innovation.com	Niels Vildbrad	Niels Vildbrad (via Skype)

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
We Love People	Main telephone number: +45 36 93 89 00	Vester Farimagsgade 41, 4. sal, 1606 København V	http://welovepeople.dk	2009	We measure creative slutions in numbers and strong feelings. An efficient creative solution at We Love People involves a well defined problem, strong insights, a space of opportunity, clear goals and an inviting solution. What matters most is that we meet and involve people in ways to make a positive impact.	"Build shit that matters"	Doing better by doing good - It pays to have a purpose, which is higher than profit. We Love People works with sustainable messages and social movements. We take on tasks and narratives, change opinions and behaviour and starts conversations that creates positive change and strengthens the bottom line.	None visible on website

Contacted	Planned interview	Done interview with
Gry Knoop	Gry Knoop and Christina Blak	Gry Knoop and Chrisitna Blak

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Bespoke	hello@bespokecph.com	Trangravsvej 8, 1436 København	http://www.bespokecph.com/consulting/#about-lab	Unknown	Bespoke uses Design Thinking and Foresight methodologies to develop new tangible solutions for the future. They support tackling the creative challenges of your organisation and help you step into the space where real disruptive innovation can emerge. They use this creative energy to imagine, design, develop and test new ideas, products, brands and services that will make your business thrive and stay relevant to your customer.	Bespoke CPH drive growth and development by focusing their work on two fronts: Bespoke Academy and Bespoke Consulting.	Bespoke is a Copenhagen based strategic foresight & design thinking firm obsessed with demystifying the future	Kaospilot, Wooden Spoon, Syndis, The Social Business Company, L'oreal, University of Gothenburg, Aalborg University, Spier, Aars.

Contacted	Planned interview	Done interview with
Rune Toldam	Rune Toldam	Rune Toldam

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Hatch & Bloom	we@hatchandbloom.com	Blegdamsvej 6, 2200 København N.	http://www.hatchandbloom.com	Unknown	Service design, business design, behavioural design, experience design, brand and communication, building innovation capability and design anthropology.		An innovation agency that can help you discover powerful insights, create disruptive ideas and design game-changing solutions.	Boehringer Ingelheim, Municipality of Frederiksberg, Municipality of Aarhus, Ældresagen, Libratone, Ministry of Children and education, Grundfos, Hummel, DSB, Rockwool Fonden, Copenhagen Capacity, Krifa, KL, etc.

Contacted	Planned interview	Done interview with
Jacob Fruensgaard Øe, Mads Kogsgaard Hansen and Lotte Lyngsted Jepsen	Mads Kogsgaard Hansen	Mads Kogsgaard Hansen

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Leo Innovation Lab	troels@leoilab.dk	Silkegade 8, 1113 København K	https://leoinnovationlab.com	Unknown	Involve users from the beginning, which allows Leo IL to validate or discard their hypothesis and to test solutions at a rapid pace. They also ask users to share challenges from their everyday lives and to share ideas if they have suggestions on how to solve them. The most central process in the way Leo IL work is their '100-days' build phase which ensures a minimum viable product or service fast on the market.	As LEO Pharma is owned entirely by the LEO Foundation and has no shareholders, its profits are reinvested in developing new solutions to support the overall mission: To help people achieve healthy skin.	We don't develop medical treatments – instead, we look at all the aspects of everyday life that can affect a person who has a skin condition. The solutions are focused primarily on e-Health and add-on devices	Flaym online community for people with psoriasis - TREAT nutritional coach online - HelloSkin online store for people with psoriasis.

Contacted	Planned interview	Done interview with
Line Lyst and Max Gozal	Max Gozal	Max Gozal

Appendix 1* - Innovation Labs (IL) in Copenhagen

Colour coding:	(1) Private external	(2) Public	(3) Independent hub

*All information in appendix 1 is gathered from the innovation labs' respective websites (links to websites are included in this appendix)

Name of IL	*General contact*	*Adress*	*Website*	*Founded*	*Services*	*Additional information*	*Description of IL based on own website description*	*Examples of Cases (Clients)*
Climate Unit under the City development and strategy department	crlq@tmf.kk.dk	Njalsgade 13, 2300 København S	http://www.kk.dk/artikel/klimasekretariatet	Unknown	Works in collaboration with departments in the municipality, institutions, businesses and citizens to reach the Copenhagen 2025 Climate Plan	Focuses specifically on three themes: Energy consumption; Energy production; and the Municipality of Copenhagen as a business in these regards	The Climate Unit's job is to secure the progress of Copenahgen's Climate plans until 2025	Community Copenhagen, Climate adaption in Copenhagen, Resource and waste plan 2018

Contacted	Planned interview	Done interview with
Per Boesgaard	Per Boesgaard	Per Boesgaard

Appendix 2 - Empirical Findings Scheme

	Perception of sustainability	Is sustainability embedded in their innovation process? (how they work)	Is there a shared internal language? Is sustainability defined by IL?	Quotes
Innovationlab	Finding alternatives to what we are doing today Business models have to be dynamic in order to be successful in the future	Yes more and more. Idealistically driven to make practices sustainable Not part of value proposition Part of some projects	Colleagues discuss sustainability and how it could drive, though not completely defined Revamping principles/philosophies which works as 10 commandments	
Space10	Kaave Pour personal: Today the planet and customers are expecting more than before when it comes to sustainability. Sustainability should be a mindset of all in a firm – all departments should be in sync. It's about designing a healthy company: Good products, processes and employees. It's about being responsible. Pragmatic idealism (be idealistic about ambitions, but be pragmatic about how to get there). Simon Caspersen: for Space10, sustainability is the core of everything.	Sustainability is a mindset in everything that we do. Space10 do explicit sustainability projects. They collaborate with community. Everything that is done at Space10 is open source (publicly available).	IKEA has a 'planet, people, positive' way of measuring sustainability, which Space10 also has as parameters, since they are exclusively reporting back to IKEA. Point of Space10 is to explore what IKEA can do for the world without having to live up to normal expectations of businesses (generating profits as a goal). We do that by providing an outside look on IKEA.	"Innovation is not really about doing anything new, it's about taking what is there and put it onto new contexts." Min. 11.11-11.17 (Kaave Pour)

	The magic happens when you find the cross roads of a sustainable business model and sustainable practices, and something that is design for people's dreams and aspirations, but at the same time represents a business opportunity.			
Is It A Bird	We as a company has no articulated sustainability practice, why we have a very broad perspective on sustainability. We have no tools or means to take an articulated view on sustainability in our projects.	The tools to ingrain sustainable practices are non-existent We need a language and the tools to use sustainability in practice.	The language around sustainability is very weak at the moment Wants to talk more about responsibility. Design – should embody the non-existing language in the tools such as VP canvas, design sprint and so forth.	"Of course, if you want to be sustainable you have to have sustainable practices" min. 4:24-4:29

Spark CPH	Sustainability is environmental practices, procurement policies, supply chain management and energy usage where you are aware of your footprints. Both social sustainability and green sustainability are considered. The two are combined. Considers the 17 SDGs – the B-Corp assessment tool is a good way to reveal how you are doing in relation to the SDGs.	Works with companies who want to change. How to change the business model towards becoming more sustainable. B-Corp – Benefit corporations, global movement disrupting the business of business. More than CSR – designing your business around a specific purpose – to change the world in the direction you want. Design affects, so be aware of how your design affects.	Design your company to have more sustainable practices. Be aware of how you design you company. Ask clients: Why are you in business? Sustainability should be integrated into the core of a business. Profit and impact are equally important. Very explicit about sustainability, and is firm defined since B-Corp standards are adopted.	"yes, we have a responsibility to drive sustainable agenda. Using their core competencies which is facilitating and design. Working on agendas you do not agree with, designing what you believe in. Be aware of what effects your design has. Why not design something that has a great impact." Min. 15.10
Copenhagen Health Innovation (CHI)	Related to the challenges we have in the future in regards to the environment and people.	Do workshops and projects for students and other personnel at universities as to innovate new solutions within health. Sustainability is not obviously part of innovation process, though some projects might work towards more sustainable solutions.	Do not talk much about sustainability at CHI.	

Designit	Sustainability is not really a big thing at Designit. Pragmatic towards sustainability.	Sustainability is mostly considered when clients ask for specific materials that need to sustainable. Processes are very much driven by clients' needs and wishes, and clients find it hard to grasp how to use sustainability. Clients' engineers hold a lot of power in relation to sustainability, as they ensure the appropriateness of products. We often make digital solutions around physical products. The life-time of our products is short (relative to buildings) why sustainability is not at the top of our agenda.	Seldom discuss sustainability	"sustainability is not a big thing here (…) a lot of our design products are digital (…) when it is, it's from our clients" (Designit, 2017, min. 03:12-04:05).
Smith Innovation	Sustainability is a necessity for the future – dependent on visions, it is a necessity because of scarce resources and how to use them wisely. Working with sustainability has been postponed in the building industry, which calls for new partnerships. Sustainability as a springboard to come up with new solutions. Innovating together in consortiums are crucial to address sustainability	Collaboration is a big part the way they innovation as the work in consortiums. Sustainability is not explicitly embedded into innovation processes, though Smith Innovation has been working towards new and better solutions for a long time – that is the main driver. Form partnerships instead of hiring consultants as to enable the emergence of new and better materials.	Sustainability is in some way implicit – it is there, but they do not talk about it.	"working with sustainability in the future needs partnerships between different companies" Smith Innovation, 2017, min. 3:44-3:58). I would say that sustainable products demand collaboration, so the process of working together and innovating together in these consortiums is (…) what you need to do to develop sustainable materials or new

	and innovation. Visions need to be long-term, which is quite normal in the construction industry in which Smith Innovation operates.			solutions (Smith Innovation, 2017, min. 5:31-5:55)
Fjord	How we can create better solutions. What you do all the time when creating consumer experiences. Not a trend, because it is important. It is part of the agenda, but they do not explicitly work with sustainability.	Clients are asking for sustainability – because it is dk (Mikkel). 06.25-06.35 Companies are asking for design that can reduce the use of resources. Sustainability becomes a natural part of what we do, since doing otherwise would create a shit storm. Fjord has different indicators as to measure the implications of their outcomes, such as the 'love index'.	Do not think of sustainability normally. Talks about unintended consequences. Design and design thinking can help reduce those unintended consequences. Need to think ahead – in order not become unsustainable. Hence unintended consequences. View sustainability as a buzz word.	”We don't talk about it, because it is just ingrained in what we do, because it is not good for us or society if we do not work with sustainability. It is just not something that is high on our agenda. “ 5.30 – 06.05 “it has some unintended consequences in terms of rising housing prices” (Fjord, 2017, min. 8:26-8:32).
Area9	For Area9 sustainability is about providing both education and opportunity to people through the digital systems that we develop. This can make sustainable systems within e.g. healthcare So our digital systems basically enable the sustainability of the	Work through collaborations to optimize efficiency of people working with systems. Focus on end users in combination with subject matter expertise. We only work with 'valuable problems', which means that we do	Do not have a written document stating their ethical, sustainability or similar position. Though the founders simply agreed that this is the way we work (by only trying to solve 'valuable problems')	

	systems that we already have today.	not work with e.g. gambling firms, weapon producers etc. We primarily work with projects concerning healthcare, education and in other areas where we believe we can make a positive impact. Staying loyal to the development model that we have is important, why integrating sustainability into it might no result in more sustainable outcomes.		
We Love People	Sustainability is highly specialized, and the language is very introvert. We need a positive language around talking about sustainability – should be more about dreams and cool stuff. We need to innovate the language for sustainability – we are driven by lust, and we need to make sustainability	Sustainability is built in, in our mind-set, so in that sense do we work with sustainability in our processes.	Not a CSR company. CSR is not purpose, CSR is compliance and risk eversion. Look at purpose and the 17 SDG's.	"We don't see ourselves as advertisers, but as 'solvertisers'" min. 6:50-6:55 Christina Blak from We Love People mentions: "we are not a CSR agency (…) CSR is not purpose, CSR is compliance and risk aversion" (We Love People, 2017, min. 07:23-07:45). "The 17 SDG's is an opportunity platform for thinking ahead – a compass if you may" (We Love People, 2017, min. 08:10-08:17).

Bespoke	Personal: It is important that he leaves the planet in the same shape or better. Bespoke: Care about the planet and the 17 SDGs. Consider becoming a B-Corp. Care mostly about people, but do think about how much they use of resources (fly, print etc.)	They are trying to influence their clients with their value proposition Work with the Triple Bottom Line Everything that we do is trying to push clients into becoming more sustainable. Though it is very rare that they actually have a conversation about sustainability with clients.	Have a manifesto from which their work is based on. We act on sustainability, though we do not talk much about it among ourselves. We do sort of have a language for sustainability when we do talk about it, though we might not mean the same when using the same words. SDGs are interesting also because it provides a common reference point.	In Bespoke, we actually started working with the three Ps – People, Planet and Profit, so that all our work could kind of live up to both creating value for people, creating value for the planet and also profits in a way of actually making a sustainable business (Bespoke, 2017, min. 5:27-5:51). Look at how much they are flying and so forth. 07.00

Hatch & Blooom	Sustainability is very broad, but try to implement circular economy principles. Personally, focuses on materials and product components, because of being an engineer by training. Solutions need to be better and smarter Sustainability is not integrated into the firm, but the culture is idealistic and the founders care about social innovation.	Employ design thinking, which can eradicate unintended consequences. Design thinking is human centred, which is important, and also that it entails rapid prototyping. Considers purpose driven innovation as to make positive change. Mads is hired to help the firm become more sustainable in its processes, as his tasks are inter alia to share insights etc. to colleagues.	No written definition or shared language of sustainability, which is a challenge. Mads Hansen (interviewee) is on a mission to make clients experiment, since normal way of doing business is out-dated. Though we have not succeeded in promoting sustainability as a growth parameter.	"it has been one of my challenges as well to try to change the culture of the company" (Hatch & Bloom, 2017, min. 38:51-39:01).
Leo Innovation Lab	Personal: Two folded: Relates to ecology (are you producing in a sustainable way) and in relates to running a business in a sustainable manner as to ensure its existence in years to come. In terms of ecological sustainability Leo Innovation Lab does not consider sustainability because we are mainly digital.	Leo Innovation Lab makes digital solutions as a means to enhance the quality of life for Leo Pharma's customers who have skin conditions. Leo Innovation Lab also works as a means to sustain Leo Pharma in the future. Since we haven't really defined sustainability it is hard to say whether our process is sustainable.	No. No indication of any shared language or proof of definition within the IL. Interviewee seemed to only consider sustainability as ecological (environmental) and economical.	

Climate Unit under the City development and strategy department	Sustainability is everything within waste, energy, consumption, transport, and social. We also talk about liveability. We are past the point of a narrow view. Every department might have different focus points, but the departments need to work across to make the city work, and therefore a broad view.	Sustainability is always part of the innovation processes in the climate unit. The majority of the partners have the same overall perception of sustainability We will see more and more work across sectors. Citizens will be increasingly involved.	Sustainability is a very broad term – we need the broad approach. Where are the differences between sustainability and liveability in a city? Why are we here?	