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Corporate Venture Capital on Sustainability-oriented Innovation: A Norwegian perspective

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Contents

ABSTRACT	7
1. INTRODUCTION.....	8
2. LITERATURE REVIEW.....	12
2.1 CVC Background	12
2.2 CVC, Sustainability, and Innovation.....	13
2.3 CVC strategy alignment	14
2.4 Startup funding criteria in CVC.....	17
2.5 Industrial and geographical diversification in CVC.....	19
2.6 The role Knowledge Management in CVC	22
3. THEORETICAL FRAMEWORK.....	24
3.1 Ambidexterity Framework	24
3.2 SOI Framework	26
4. METHODS.....	28
4.1 Research Design	28
4.2 Database design	29
4.3 Case study design	31
4.3.1 Primary Data	31
4.4.2 Secondary Data	33
5. FINDINGS	34
5.1 Findings from Norwegian CVC Database.....	34
5.1.1 Startups	34
5.1.2 Industry	37
5.1.3 Additional directions.....	39
5.2 Findings from case study.....	42
5.2.1 Representative Case study Interviews.....	42
5.2.2 Report Analysis.....	62

6. DISCUSSION	64
6.1 Norwegian CVC through ambidexterity framework	64
6.2 Norwegian CVC through SOI Framework	65
6.2.1 Strategy	66
6.2.2 Process	66
6.2.3 Learning	67
6.2.4 Linkages	68
6.2.5 Innovative Organization.....	68
7. CONCLUSION	69
8. RECOMMENDATIONS AND CONTRIBUTIONS	70
9. REFERENCES	71
10. APPENDICIES	78
Appendix 1- UN Sustainability Goals	78
Appendix 2 - Case Studies Background	79
Appendix 3 – CVC and startups interview questions.....	87
Appendix 4 – Database of Norwegian CVC	89

List of Tables

- Table 1. Activities of SOI 27
- Table 2. Description and source of information for the database 30
- Table 3. Definition of industries 30
- Table 4. CVC communication channels and response status..... 31
- Table 5. Interview schedule 32
- Table 6. Head companies with their CVC in Norway..... 34
- Table 7. The number of startups in each area and in each country 35
- Table 8. The number of startups in each CVC, based on the area. 37
- Table 9. Overview of the interviewed CVC..... 43
- Table 10. Analyses of CVC interviews on the topic “Focus on financial or strategic objective”.
..... 44
- Table 11. Analyses of CVC interviews on the topic “CVC Process of engaging with startups.”.
..... 47
- Table 12. Analyses of CVC interviews on the topics “Benefits from the collaboration and
investment” and “Measurement of outcomes”..... 48
- Table 13. Analyses of CVC interviews on the topic “Challenges and conflicts of interest”... 48
- Table 14. Analyses of startup interviews on the topic “Objectives”..... 51
- Table 15. Analyses of startup interviews on the topic “Projects”..... 52
- Table 16. Analyses of startup interviews on the topic “Level of autonomy and changes”..... 54
- Table 17. Analyses of startup interviews on the topic “Sustainability and Innovation Impact”.
..... 56
- Table 18. Analyses of startup interviews on the topic “Benefits from collaboration”..... 57
- Table 19. Analyses of startup interviews on the topic “Measuring outcomes of collaboration in
attaining sustainability and innovation”..... 59
- Table 20. Analyses of startup interviews on the topic “Challenges and conflicts”. 61
- Table 21. UN sustainability goals according to CVC 62
- Table 22. CVC impact on sustainability. (DNV Ventures - DNV, n.d.; Eviny Ventures, n.d.;
Yara Growth Ventures, n.d.) 63

List of Figures

- Figure 1. Models for Business Strategy versus CVC strategy 16
- Figure 2. The startup life cycle, startup needs and funding instruments..... 18
- Figure 3. Framework on Strategic objectives of CVC, Ambidexterity Orientation and Autonomy of the CVC Unit 25
- Figure 4. Mapping of CVC objectives versus operation 26
- Figure 5. Distribution of investment around the world 35
- Figure 6. Industry distribution by country. 37
- Figure 7. Distribution of CVC investments by industry 38
- Figure 8. Share of an additional direction of startups 39
- Figure 9. Distribution of startup's additional direction by area..... 40
- Figure 10. Distribution of startup's additional direction by CVC 40

ABSTRACT

This master's thesis investigates Norwegian Corporate Venture Capital (CVC) in terms of attaining sustainability and promoting innovation. The work's significance is maintained by the fact that, according to the literature, CVC plays a key role in assuring sustainability for both corporates and startups, and such research has not been undertaken in Norway.

To investigate Norwegian CVC, we employed the ambidexterity analytical framework, as well as CVC and SOI models. We established a database to investigate the state of collaboration between corporations and startups around the country. To undertake case studies for the purpose to explore the practical aspect of the partnership more thoroughly, we conducted interviews with three active Norwegian CVCs and their startups.

This is because, despite the fact that there are strategic objectives of partnership with startups in each of the three CVCs that we analyzed, they are not measured and evaluated. As a result, determining the efficacy of CVC from a non-financial standpoint is challenging. In terms of financial contribution, CVC's input pales in comparison to the head company's overall performance. Furthermore, there is no clear approach for dealing with startups.

Based on this, we provide recommendations. To begin, there is an urgent need for the development of a measurement mechanism for evaluating the performance of CVC. Second, it is vital to develop a transparent and understandable strategy for interacting with startups. Taking these guidelines into consideration, firms will be able to maximize the benefits of such collaborations with startups, since companies are now losing most of their non-financial advantages. It will be able to contribute not only to their personal growth, but also to the development of the industry.

1. INTRODUCTION

Sustainability and Innovation have become topics that have gathered interest in both academia and the corporate world. Academic research has increasingly focused on understanding the drivers and outcomes of corporate startup collaboration. One key driver is the need for established companies to stay competitive in an increasingly dynamic business environment. By partnering with startups, established companies can gain access to new technologies, markets, and customer segments, and remain at the forefront of innovation.

The high uncertainty, resource constraints, and high competition require companies to be more agile and mindful of how to create value for their customers and society. Although met with broad critics as being more of hype rather than doing the right thing there is a clear call that companies cannot continue to Operate by “Doing what we know best” as this will lead to their demise. Corporate startup collaboration has emerged as an important trend in the business world, with established companies increasingly partnering with startups to drive innovation and growth.

Strategic partnerships that involve corporate-startup collaboration are gaining popularity (Weiblen & Chesbrough, 2015; Steiber & Alänge, 2020). Powell et al. (1996) raised the issue that external collaboration may require different kinds of organizations and organizational practices to access the external community, and further, their entrepreneurial ecosystems (Drori & Wright, 2018). Steiber (2020), utilizing a case study and a well-established framework for the spread of innovations, looked into a corporate startup’s partnership model as an organizational innovation. The three sets of elements—external factors, internal factors, and organizational innovation characteristics themselves—were shown to have an impact on the spread of the "FirstBuild" cooperation model.

High technology strategic alliances can provide large firms with access to technologies as a complement to internal R&D (Clauss & Spieth, 2017; Roth et al., 2017; Aggarwal & Kapoor, 2018). On the other hand, small technology companies' ability to quickly create new ideas and test them with early adopters is one of their primary strengths as a component of the ecosystems of large firms. On the other hand, one of their main weaknesses is their limited capacity to scale up for high-volume operations. Large companies generally have polarized strengths and weaknesses. Because of this, several writers have proposed types of collaboration in which the businesses take on complementary and interactive responsibilities (Rothwell & Dodgson, 1991; Prashantham & Birkinshaw, 2008). Most startups see corporate connections as having several

facets and having the ability to produce a range of advantages over time. Some entrepreneurs believe that collaborating with incumbents could help them reach markets faster than doing it alone, or learning from them could help lead to better success and mutual benefit for both (Imaginaik & Masschallenge, 2016). This is an alternative to trying to disrupt an entire sector.

Sustainable startups are cutting-edge, young businesses that widely disseminate solutions with long-term net gains. They play a significant role in the sustainability transition as well as in introducing and spreading sustainability innovation. However, there is little research on the factors that affect entrepreneurial companies' attempts to develop sustainable innovation (Horne & Fichter, 2022). Since accelerating sustainable transitions and scaling sustainable innovations to realize the SDGs are significant undertakings, this constitutes a significant research deficit.

Norway's dismal performance in global assessments of innovation capability, such as the extensive Community Innovation Survey (CIS) and Innovation Union Scoreboard (IUS) conducted by Eurostat, has raised questions. Norway's economy has consistently expanded recently, but the nation has not performed well on measures of its ability for innovation. One explanation is the unique business structure of Norway, which is heavily reliant on raw commodities among other things. The most recent statistics from [Statistics Norway](#) demonstrate that some of Norway's bad performance can be attributed to the methodologies used in earlier polls and that the situation is not as dire as those surveys implied. Up until now, information for Norway has been gathered through a survey that includes details about businesses' R&D and innovation efforts. These are measured in two distinct polls in several other nations. Even though they may still engage in innovative activities, businesses that don't engage in a lot of R&D may have a propensity to understate those efforts in their reporting.

Stakeholders in the Norwegian market have recently placed a greater emphasis on environmental, social, and governance (ESG) compliance. The issue has become a top priority for the Norwegian government, as well as bigger companies, investors, and financial institutions. Although most Norwegian corporations have up to now been exempt from official ESG-reporting and due diligence obligations, there has recently been a noticeable transition from soft law to hard law.

Forward-thinking businesses are realizing more and more how critical it is to communicate ESG implementation, compliance monitoring, and reporting. These metrics are viewed as the foundation for such organizations' strategies and corporate governance frameworks, which are interwoven with sustainable and responsible business principles. Different environmentally

sustainable economic activities are categorized under Regulation (EU) 2019/2088 on Sustainable Finance Disclosure (SFDR) and the accompanying Regulation (EU) 2020/852 (EU Taxonomy).

To contribute to this research, we formulated the below Research Questions which will form the basis of our study and analysis.

RQ1. How do Norwegian CVCs strategize their startups investment?

RQ2. How do Norwegian CVCs leverage their interaction/relationships with the startups in driving sustainability and innovation?

A qualitative study was done using creation of CVC database in Norway and Case study interviews for the CVC and relevant startup. Three CVC were studied and represent different industries with impact on Sustainability and Innovation. We also additionally reviewed The Open Innovation Report 2023 - Surviving the storm with key trends identified as

- The desire to discover unknown business opportunities is the most popular objective driving corporates to work with startups (46%).
- The biggest blockers to collaboration were perceived incompatibilities between corporates and startups due to legal and regulatory issues (14%) and low risk tolerance (13.7%).
- Sustainability, Artificial Intelligence and Cybersecurity are the top three topics corporates aim to explore in collaboration with startups.

From this report we seek to identify comparison on trends within Europe and specifically Norway. The findings from this research give perspective from both the CVC and startup. We identified setting of clear strategic objectives as a key driver in setting the scene for collaboration. A strategic fit between the two players was continuously identified being of key importance. Other common themes were benefits of knowledge and start up autonomy. Interestingly most of the CVC have Sustainability as a core of their collaboration requirements however there is minimal evidence to demonstrate how this is leveraged in the collaboration and later to the parent company. The parent company view the CVC as more financial investment with less impact on Sustainability and Innovation and we hope our study will highlight the opportunities of broadening this view and optimising the use of the CVC to drive Sustainability and Innovation.

This study is therefore structured as follows Section 2 we provide literature background and overview of CVC and process followed Section 3 we introduce theoretical frameworks for

Ambidexterity and Sustainability Oriented Innovation to be used in our analysis Section 4 we discuss the methodologies of research and how we collected the data to create the database and use of case study representative interviews Section 5 we present our findings and analysis Section 6 present a discussion based on the two theoretical frameworks, Section 7, 8, 9 we conclude our thesis and provide limitations, recommendations and contributions for future research.

2. LITERATURE REVIEW

2.1 CVC Background

Corporate venture capital (CVC) has emerged as an increasingly popular way for established companies to invest in startups. The purpose of "corporate venture capital" funds, also known as "industrial venture capital funds," is for a parent firm to participate in a startup company that is inventive and provide capital equity as well as industrial input through a fund specifically dedicated to industrial innovation. Corporate venture capital can be viewed in this context in one of two ways: as an alternate source of funding for creative startups, or as an external risk taking for the company (Gompers & Lerner, 2000). The incentive for industry entities to participate in CVC includes Technological Interest, Increasing the value of internal research and development, Market tracking and the experience effect, Putting new practices into practice and Financial Interest.

Corporate venture capital (CVC) has a long history that dates to the 1940s, when large corporations began to invest in startups as a way to gain access to new technologies and markets. However, it was not until the 1980s that CVC became a prominent feature of the corporate landscape.

In the 1980s, CVC began to gain widespread acceptance as a means of promoting innovation and driving growth. Many large corporations, such as Intel, IBM, and AT&T, established CVC programs to invest in startups and gain access to new technologies and markets. These programs were initially focused on investing in technology startups, but over time, they expanded to include other sectors, such as healthcare and energy.

The 1990s saw a decline in CVC investment activity, as many corporations focused on divesting non-core assets and restructuring their businesses. However, CVC experienced a resurgence in the 2000s, as many corporations looked to invest in startups as a way to promote innovation and drive growth.

Academic research has extensively studied the history and evolution of CVC. For instance, a study by Mergel & Tech (2021) examines the historical development of CVC and identifies the key factors that have shaped its evolution over time. The study highlights the importance of

organizational factors, such as corporate culture and leadership, in driving CVC investment decisions and outcomes.

2.2 CVC, Sustainability, and Innovation

Researchers (Haldar, 2019; Horne et al., 2020), reiterate that innovation-driven entrepreneurship promotes sustainability because of the direction provided by leaders who integrate the triple bottom line principles into their corporate missions to achieve financial, environmental, and social objectives. (Elkington, 2008).

The motivation of many companies to become more sustainable and innovative has come into question especially with high level of market uncertainty and competition. According to several studies (Dillon & Fischer, 1992; Lampe, Ellis, & Drummond, 1991; Lawrence & Morell, 1995; Vredenburg & Westley, 1993; Winn, 1995), there are several reasons why businesses "green", including regulatory compliance, competitive advantage, stakeholder pressures, ethical concerns, critical events, and top management initiative. There is widespread agreement on the value of legislation in promoting business ecological responsiveness (Lampe et al., 1991; Lawrence & Morell, 1995; Post, 1994; Vredenburg & Westley, 1993). Increased fines, penalties, and legal fees have highlighted the need of following the law (Cordano, 1993). Keeping up with legislative changes will also help businesses avoid costly capital refits (Lampe et al., 1991). Examples of regulations that have led to the companies adapting their business models include UN Sustainable Development Goals ([Appendix 1](#)) and the Corporate Sustainability Reporting Directive (CSRD). According to the commitment made under the European Green Deal, the EU commission announced the approval of the Corporate Sustainability Reporting Directive (CSRD) on April 21st, 2021.

Another motivation is that corporate ecological responsiveness is also driven by economic opportunity. Businesses can minimize input costs and waste disposal expenses while reducing their environmental impacts by intensifying their manufacturing processes (Cordano, 1993; Lampe et al., 1991; Porter & van der Linde, 1995). Green marketing, the selling of waste products, and outsourcing a company's environmental knowledge can all increase revenue (Cordano, 1993). Rent-earning firm-based resources can be generated through corporate ecological activities, including corporate reputation (Hart, 1995; Russo & Fouts, 1997),

learning capabilities (Bonifant, Arnold, & Long, 1995; Hart), and product quality (Shrivastava, 1995).

Academic research has extensively studied CVC, examining the factors that drive CVC investment decisions, the impact of CVC on innovation and financial performance, and the potential risks and benefits of CVC. For instance, a study by Lockett et al. (2017) found that CVC investments were associated with higher levels of innovation performance. One key driver of CVC investment is the need for established companies to stay competitive and innovate in an increasingly dynamic business environment. By investing in startups, established companies can gain access to new technologies and markets and develop innovative products and services. Another study by Phan et al. (2020) examines the role of CVC in promoting innovation and driving growth. The study highlights the importance of strategic alignment between the CVC program and the parent company's business strategy, as well as the need for effective management of the CVC portfolio to ensure that investments align with the parent company's goals and objectives. However, CVC investments also involve risks and may not always lead to successful outcomes. By carefully considering the potential risks and benefits of CVC, established companies can effectively leverage CVC to promote innovation and drive growth.

2.3 CVC strategy alignment

Because of managerial uncertainty regarding how CVC might be operationally connected to the firm's overall strategic process and agenda, businesses have historically had difficulty successfully utilizing CVC for long-term growth and corporate renewal purposes (Birkinshaw, van Basten, Batenburg, & Murray, 2002; Buckland, 2003). The relationship between CVC activities and a firm's strategy formation processes may be particularly significant in predicting the effects of CVC activities on firm performance, according to theoretical and empirical evidence (Baden Fuller, 1995; Burgelman & Sayles, 1986; Lovas & Ghoshal, 2000; Meyer & Heppard, 2000; Thornhill & Amit, 2001)

From relevant literature 5 Models were proposed to demonstrate this relationship:

Model 1: CVC and BS Are Weakly Linked or Unrelated CVC - activities and Business Strategy(BS) may occur within organizations as mostly or completely autonomous phenomena. This would be the case, for instance, if the organization overlooked or discouraged the firm's

venturing efforts because they were merely emergent (i.e., not induced or supported by BS). As a result, CVC would not be influenced by BS and vice versa.

Model 1 is a theoretically undesirable circumstance that can eventually harm an organization's ability to compete. According to the literature, CVC and BS can occur as separate phenomena, which is consistent with Model 1 (Carrier, 1996; Donahoe et al., 2001). According to Brazeal & Herbert (1999), this is categorized as “entrepreneurially challenged firms.”

Model 2: BS Drives CVC - The main issue with Model 2 is that businesses may not recognize and accept the necessity for sporadic company redefinitions if they restrict the scope of their activities to what can or will be planned. In the new competitive environment, where industries are merging and strategic responsiveness is seen as a necessary organizational capability, such redefinitions are becoming more and more important (Bettis & Hitt, 1995; Burgelman & Grove, 1996; Covin & Slevin, 2002; Eisenhardt & Brown, 1999).

Model 3: CVC Drives BS - It's also possible for CV to cause BS in the causal relationship between CVC and BS. In other words, the BS might in fact develop in reaction to the company's independent risk-taking. Similar to the previous model, one or more variables might stand in the way of CVC and BS, or this link might be tempered by, yet another variable related to the organizational system. Purely opportunity-driven tactics, like those proposed by Model 3, would be problematic for a variety of reasons.

The investments required to develop the deep core competences necessary to maintain competitiveness would also be unlikely to be made by such a corporation. However, even if strategy is considered as a pattern rather than a plan, a corporation whose approach is constantly being redefined runs the risk of losing any trace of a strategy over time (Mintzberg, 1987). While a temporary lack of strategy may be acceptable (Inkpen & Choudhury, 1995), a persistent lack of strategy can easily endanger an organization's ability to survive (Mintzberg, 1987). Additionally, it would be challenging to maintain competition based on a CVC driving strategy because this form of operation necessitates constant reinvention of the firm's business.

Model 4: Reciprocal Causality Underlies the Interaction of CVC and BS - When an organization is willing to acknowledge and support emergent, self-generating innovations, the BS is opportunistically redefined in those companies that function in this way. For new endeavors whose existence may not have been planned, strategy rationalizes and offers a meaningful and

purposeful context. Additionally, strategy outlines prospective future areas for innovative activity, highlighting fields in which the firm might have a competitive edge.

Through what has been referred to as dynamic strategy (Markides, 1999) or directed evolution (Lovas & Ghoshal, 2000), the fusion of strategic and entrepreneurial processes enables organizations to opportunistically reinvent themselves for the aim of creating or sustaining competitive advantage.

Model 5: The Business Strategy Is the CVC - The CVC efforts supported under the CVC as BS model would be those that address the innovation imperatives originating from the firm's selected operating environment. This would probably result in a company that has a clearer mission and more direction for its business.

Organizations that exhibit deep entrepreneurialism are probably ones where CVC is the BS. Such groups may exist, according to studies by Miller & Friesen (1982), Karagozoglu & Brown (1988), and Covin (1991).

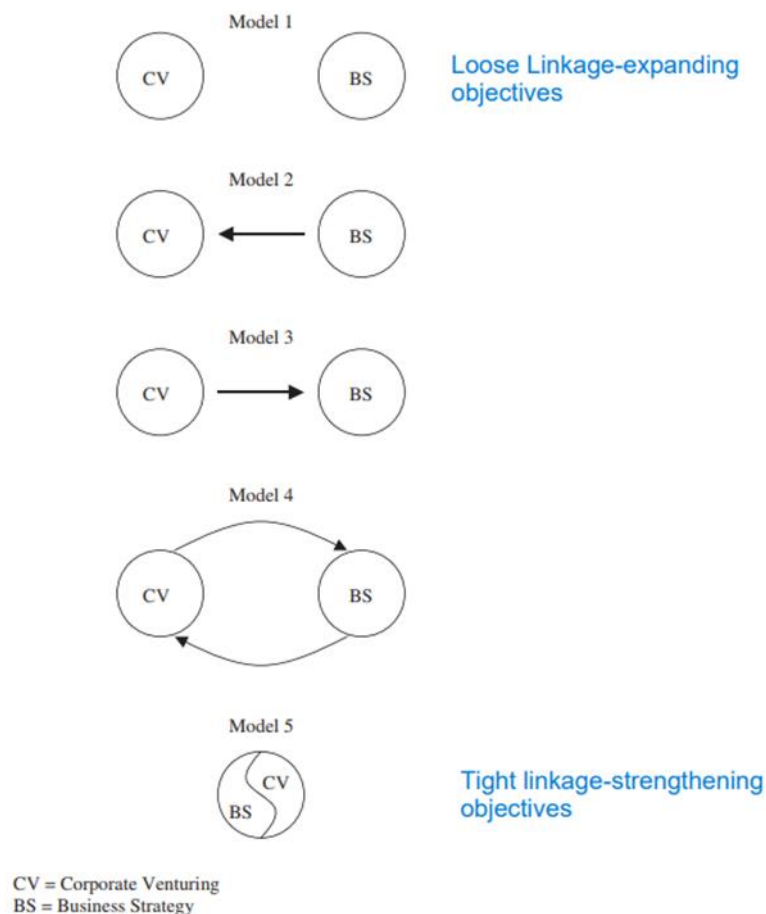


Figure 1. Models for Business Strategy versus CVC strategy

2.4 Startup funding criteria in CVC

According to a review of prior studies by Luger & Koo (2005), startups are distinguished by three key interdependent factors: novelty, activeness, and independence. By extending Luger & Koo (2005), we find additional traits that are typically mentioned when defining startups. First off, most companies start out tiny since they conduct their commercial operations on a modest scale. According to Montani et al. (2020), the startup process is accompanied by early costs with little to no return, which creates a significant requirement for outside funding. Secondly, startups are also distinguished by poor financial outcomes. Third, because there is no information or data accessible to construct business scenarios, the launch process is coupled with substantial uncertainty (Thies et al., 2019). In addition, a lot of new, creative businesses struggle because of their inability to raise money (Neuhaus et al., 2022; Thies et al., 2019). Startup funding problems are mostly characterized by limited cash flow capabilities, high levels of unpredictability, and agency challenges (Block et al. 2018; Hatzijordanou et al. 2019; Ismayil & Tunçalp, 2023).

Venture Capital (VC) provide growth-oriented startups with crucial resources to aid in their development and eventual success, frequently working in syndicates of multiple VCs rather than alone (Lerner, 1994; Wright & Lockett, 2003). Consequently, VCs have an impact on new ventures in two different ways: directly by providing financial capital and management expertise (human capital) to the startups they finance, and indirectly by granting them access to their network and assuming the role of information and resource brokers (social capital) (De Clercq et al., 2006; Dimov & Shepherd, 2005; Pratch, 2005; Sapienza et al., 1996).

A startup's demands vary depending on where it is in its life cycle and go beyond simple funding (see Figure 2). Early-stage businesses are characterized by negative cash flow, a lack of experience, and an inadequate partner network (Pasquini et al., 2019; Thies et al., 2019). According to Cumming & Johan (2017), a prospective financial partner should be able to meet the requirement for capital. The demands of startups are divided into three categories by Baum & Silverman (2004) based on the functions of venture capitalists' offerings: surviving, scouting, and coaching. Startups try to remain functioning and maintain their existence, hence the drive to survive predominates in every stage of the life cycle (Block et al., 2018).

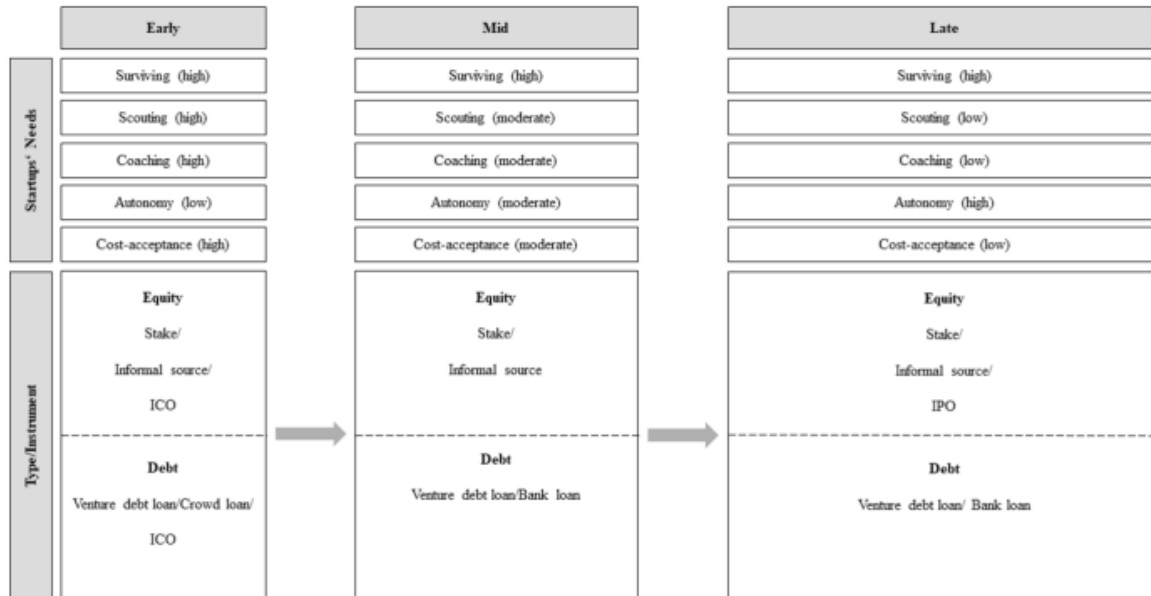


Figure 2. The startup life cycle, startup needs and funding instruments.

Scouting is the process by which investors search the market for promising investment opportunities to find companies with untapped value and potential (Baum & Silverman, 2004). Due of their small partner networks, startups have a particularly high requirement for scouting throughout their early stages (Amit et al., 1998). Scouting becomes less necessary when startups build their own networks and competencies through capital flow (Berger & Udell, 1998).

Additionally, to overcome their lack of knowledge and prevent blunders in critical business decisions, early-stage businesses require intensive mentoring (Fraser et al., 2015; Quas et al. 2021). We do not treat the need for coaching and the need for autonomy as being at opposite ends of a continuum, even though it appears that they are negatively correlated. Instead, we add the factor of a startup's willingness to accept autonomy trade-offs because it must weigh the costs of its partner decisions and adapt to the current environment throughout its life cycle. Autonomy trade-offs in this context allude to a startup's readiness to forgo a portion of its autonomy in exchange for finance (Berger & Udell, 1998; Thies et al., 2019). This connection between autonomy and financing considers both constants like shifting ownership rights and variables like obvious capital expenses like interest rates and profit-sharing (Colombo et al., 2022). Most entrepreneurs are prepared to tolerate greater autonomy during the early and mid-stages in exchange for finding the necessary finance partners to secure their survival (Gras et al., 2017; Vaznyte & Andries, 2019). Because of this, a startup becomes less ready to accept

autonomy trade-offs as it grows older and pushes for increasing levels of autonomy. The sections that follow review and talk about financing sources and partners.

Corporate venture capital funds can help startups survive in the short term by providing fresh funding, but this could come at the expense of future earnings and value. CVC funds struggle to incorporate the expertise they learn into their established firms as a result of the difficulty in locating suitable startups (Jeon & Maula, 2022). So, according to Block et al. (2018), corporate venture capitalists are only considered late-stage investors. These businesses also struggle to identify emerging external technology (Benson & Ziedonis, 2010). Compared to traditional venture capitalists, corporate venture capitalists provide their investees with less authority (Block et al., 2018).

CVC firms have trouble operationalizing suitable technology even when they do find one (Benson & Ziedonis, 2010). CVC funds are accused of causing conflicts that could harm the partnership while providing additional services comparable to those of conventional venture capitalists (Hallen et al., 2014). A conflict of interest may arise when seasoned managers coaching nascent firms choose to highlight either internally developed or externally purchased technologies (Benson & Ziedonis, 2010; Jeon & Maula, 2022). In conclusion, CVC funds can meet the financial needs of companies (high survival rate). Additionally, they offer various non-monetary services and search the market for fresh prospective outside prospects. However, several of their actions, including scouting, coaching, and autonomy, are restricted due to the inherent potential conflicts of interest and tensions. CVC funds therefore appear to be useful exclusively for the survival of late-stage firms.

2.5 Industrial and geographical diversification in CVC

When searching for new technology, a parent company usually invests in several startups, forming a so-called CVC portfolio. Diversification of the CVC portfolio is the practice of distributing the CVC investments among startups in various industries.

To date, CVC portfolio diversification has become an important model adopted by most large parent companies in CVC activities. Yang et al. (2014) analyses the impacts of CVC portfolio diversification on the value of CVC parent companies from the perspective of real options, while Wadhwa et al. (2015) investigate how CVC portfolio diversification influences parent companies' technological innovation from the perspectives of knowledge spillover and asset complementarity.

A parent business typically invests in several startups, creating a so-called CVC portfolio, when looking for innovative technology. As of now, most significant parent businesses engaging in CVC activities have adopted CVC portfolio diversification as a key paradigm. Wadhwa et al. (2015) explore how CVC portfolio diversification affects parent companies' technological innovation from the perspectives of knowledge spillover and asset complementarity, while Yang et al. (2014) analyses the impacts of CVC portfolio diversification on the value of CVC parent companies from the perspective of real options.

A less diverse CVC portfolio may be advantageous to the parent firm for several factors. First, synergies are created by the interconnected resources of cross-business units (Tanriverdi & Venkateraman, 2005), which allow for scale and scope economies as well as the sharing of common strategic resources across business units. In a similar vein, CVC investments in startups in the same or related industry encourage resource sharing and resource reallocation in these portfolios (Vassolo et al., 2004). A "1 + 1 > 2" portfolio effect on the parent firm can be produced by the fungible inputs from the parent company to the portfolio in addition to synergies from economies of scale and sharing experience. Second, CVC investment in comparable industries accelerates learning and facilitates corporate investors' ability to synthesize and distinguish information in comparable situations (Haleblian & Finkelstein, 1999). The success or failure of a CVC investment event can anticipate that of other such investments in the same sector environment, making it simpler for investors to manage comparable investments (Smith & Thompson, 2008). The benefits mentioned above, however, will eventually disappear when a CVC portfolio is gradually diversified. Third, excessive diversification challenges the cognitive abilities of CVC managers, creates confusion and information overload, and lowers the resource configuration efficiency of diversified resource allocation when there aren't enough free cash flows or when resources are scarce (Harris et al., 1982).

On the other hand, CVC diversification might increase the parent firms' stock prices. Due to their complementarities, diversified investments can firstly present great growth potential. For instance, CVC managers may look for alternate technology-evolution trajectories in other industries if a certain industry lacks a certain type of new technology, which could open new growth opportunities (Wan, 2015). Managers can identify more chances and approaches that are not specific to one business by using a diversified CVC portfolio with cross-industry diversified knowledge stocks, according to Matusik & Fitza (2012). As a result, greater levels of diversification promote resource complementarity, knowledge expansion, and the

investigation of varied investments, all of which are favourable to business expansion. Second, CVC managers may vary their asset allocation skills while keeping the projected level of return on investments and managing the degree of risk thanks to the diversified CVC investment expertise (Wan, 2015). businesses and project teams with broad experience are better able to recognize, take advantage of, and absorb new R&D opportunities than standalone independent venture capital (IVC) businesses in the same industry. They are also more effective at reducing risk. Additionally, due to the threshold problem, learning results can only be produced if a specific critical level of variety has been reached (Haleblian & Finkelstein, 1999).

Greater engagement, exchange, and cooperation of knowledge, skills, and information are made possible by a less physical distance between parent firms and the startups in which they have invested (Torre & Gilly, 2000). This further encourages the spillover of organizational expertise.

The barriers to information sharing brought on by geographic distance have, to some extent, been diminished by the advancement of modern communication technology; however, the trend of geographic clustering in the high-tech sector suggests that co-location close to the source of knowledge flow is important (Agrawal et al., 2006). According to Jonsson (2002), as ICT advances, businesses can now engage in long-distance marketing and communication, but he also emphasizes that ICT cannot take the role of interpersonal communication.

Greater communication between investors and investees can result from tighter physical closeness, which also increases the likelihood of face-to-face interactions. By monitoring industry trends and technological advancements promptly and building more trust-based partnerships, businesses can lessen information asymmetry. In fact, a parent firm finds it harder to learn from outside sources the farther away they are geographically. The detrimental effects of CVC portfolio diversification on parent company value are exacerbated by transaction costs and information asymmetry. The closer a location is, the more readily available complementary resources are when CVC portfolio diversification is strong. According to Catalini (2018), it is advantageous to vary the exploratory behavior of developing technologies and offer additional growth chances for the future development of parent firms because it is more likely that researchers will make a breakthrough discovery when they are close to one another.

Industry similarity, or product market similarity, is another crucial element in long-distance CVC investment. A corporate investor is first better equipped to look for and spot a possible target in its own industry and other connected sectors. As product market relatedness between

exchange partners increases due to the similarity of products and technologies, previous studies of alliance and acquisition suggest that information costs and the risk of adverse selection when forming an inter-firm relationship decrease. This may improve the firm's ability to identify and judge the various characteristics of its exchange partner efficiently and effectively. Similarly, engineers and business unit managers in their parent businesses can refer investors to more intra-industry acquisitions. These possible targets are typically businesses that have been suppliers or partners and require support to expand. The executives at headquarters, who ultimately decide whether to proceed with a deal, are also better informed about potential targets in similar commercial sectors. Contrarily, it is more challenging to comprehend the contributions and assertions made by businesses in other industries. The detrimental impact of geographic distance on interactions and trust-building will be increased since miscommunications between partners may damage the collaborative atmosphere.

2.6 The role Knowledge Management in CVC

CVC has been identified as a key driver of knowledge creation and diffusion for both startups and CVC. According to the knowledge-based view of the firm, knowledge is a company's most important resource from a strategic standpoint (Grant, 1996; Spender, 1996). The knowledge-based perspective asserts, knowledge can also provide a long-lasting competitive advantage (Grant 1996; Kogut & Zander, 1992; Spender, 1996).

Knowledge relatedness, or how well new knowledge is related to existing knowledge (Grant 1996; Lane & Lubatkin, 1998), and knowledge-sharing practices (Dyer & Singh, 1998) are other factors that can affect successful knowledge acquisition or transfer. The depth and effectiveness of mutual information sharing is increased when two people have sufficient social capital to access each other's knowledge resources (Kogut & Zander, 1992). Through interactions with other organizations, organizations can both discover new information and use that which already exists (Dyer & Nobeoka, 2000; Zacharakis, 2002).

Young technology firms can benefit greatly from a CVC by gaining access to special and complementary external resources, as well as time and money savings (Yli-Renko, Autio, & Sapienza, 2001). These resources inclines, and customized production lines, which are nearly impossible to obtain on their own. Experience suggests that young technology firms can benefit greatly from a CVC by gaining access to special and complementary outside resources, in

addition to time and money savings (Yli-Renko, Autio, & Sapienza, 2001) which are nearly impossible to create on their own.

When a corporation or one of its business units acquires knowledge that it recognizes as potentially helpful for the organization, we adopt Huber's (1991) model and consider knowledge transfer and creation within or across organizations to exist. Both the idea of organizational learning and the idea of absorptive capacity are strongly tied to knowledge transfer and creation.

According to Katz & Allen (1983), the issue is known as the Not-Invented-Here (NIH) syndrome, which is a literal opposition to anything created abroad. More recently, Lichtenthaler & Ernst (2006) claimed that other "syndromes" that can hinder the discovery and application of new information should also be recognized in addition to the NIH condition. Hussinger & Wastyn (2015) note that resistance to outside knowledge is more likely if the organization has seen success since the employees will have a stronger sense of company loyalty. Additionally, resistance is more pronounced if the information originates from rival companies or other similar groups, as opposed to suppliers, customers, or academic institutions.

Cohen & Levinthal (1990), developed the hypothesis of absorptive capacity which gained widespread acceptance. According to their definition, a firm's absorptive capacity is its capability to perceive the value of fresh, outside knowledge, assimilate it, and use it for its own economic gain. People are more likely to accept external knowledge when they already have a basic understanding of it (Cohen & Levinthal, 1990). Adding to this perspective, van Wijk et al. (2011) show that a firm's capacity to recognize the value of external information and to take advantage of it depends not only on the firm's and its employees' prior knowledge, but also on organizational work processes, employees' capacity to see new connections, and incentives in place to lessen inertia in knowledge flows. The fundamental justification is that external knowledge "should reach the right individuals at the right time" in order to be assimilated (Volberda et al., 2010). George & Zahra's (2002), according to their proposal, external knowledge may be categorized into three groups: (1) new technologies (knowledge absorption on the supply-side); (2) new markets (knowledge absorption on the demand-side); and (3) new regions (knowledge absorption on the geographical side) (Sidhu et al., 2007).

First, an expanded search scope increases the number of knowledge elements that the firm can access (Fleming, 2001). The larger the set of knowledge elements searched, the greater the chance the firm would learn from search activities.

3. THEORETICAL FRAMEWORK

3.1 Ambidexterity Framework

There are different models of CVC, including strategic and financial CVC. Strategic CVC involves established companies investing in startups with the aim of gaining access to new technologies and markets and developing innovative products and services. Financial CVC, on the other hand, involves established companies investing in startups with the aim of generating financial returns. While both models can be effective in promoting innovation and driving growth, research has shown that strategic CVC can be more effective in generating long-term value for established companies.

According to Burgelman & Valkangas (2005), Chesbrough (2000), Gompers & Lerner (1998), and others, one issue with CV units is that they are frequently considered as being overly experimental and investing in activities that are either too far from the firm's core business or too difficult to integrate into its operations.

A strong emphasis on exploitation tends to drive out exploration, which over time leads to stagnation and profitability issues (Leonard-Barton, 1992; McNamara & Baden-Fuller, 1999; Davis, Eisenhardt, & Bingham, 2009). This has been demonstrated in previous research using empirical data and modeling techniques (Davis, Eisenhardt, & Bingham, 2009). As a result, a large portion of the literature on ambidexterity focuses on approaches to support businesses in increasing their capacity for exploration without compromising their exploitation capabilities. As suggested by Gibson & Birkinshaw (2004), Tushman & O'Reilly (1996), and Tushman, Smith, Wood, Westerman, & O'Reilly (2010), some suggested strategies include creating a separate "exploration" unit (such as a research lab or new venture operation), encouraging a culture that welcomes innovative ideas, and strengthening top management's capacity to allocate resources toward exploration-oriented opportunities.

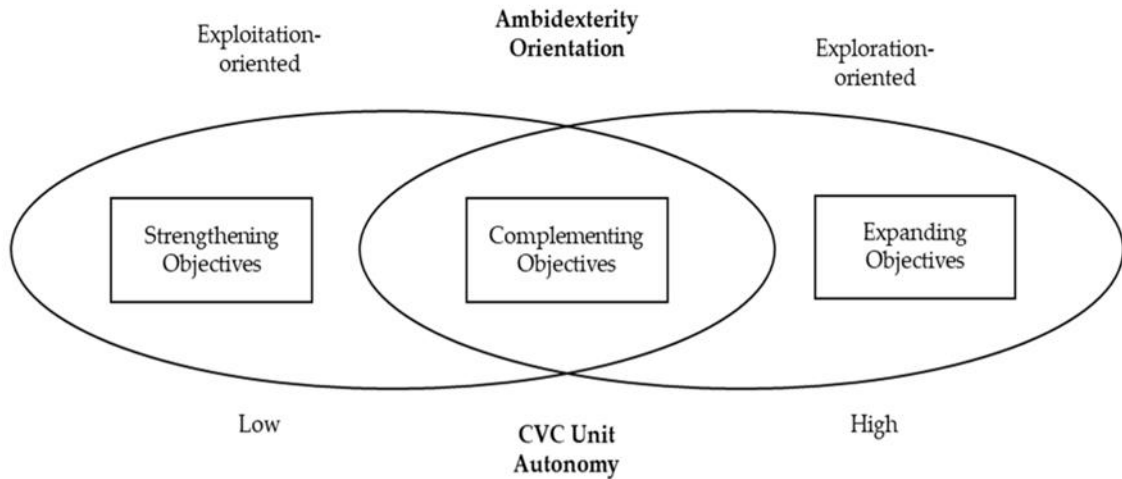


Figure 3. Framework on Strategic objectives of CVC, Ambidexterity Orientation and Autonomy of the CVC Unit

According to Chesbrough, CVC are defined in terms of the goal and degree of linkage between operations and startups as well as the degree of linkage between the companies in the investment portfolio and the investing company's current operational capability — its resources and processes.

Naturally, a company's internal processes and resources can become liabilities rather than assets, particularly when it comes across new markets or innovative technologies. An external venture may offer the investing firm the chance to build novel and distinctive capabilities that could endanger the profitability of current corporate capabilities. By being placed in a separate legal organization, these skills may be safeguarded against internal attempts to undermine them. The corporation can choose whether and how to change its own operational procedures to mirror more closely those of the startup if the business venture and its operational procedures are successful.

Chesbrough provides a framework for firms to consider their investment plans by identifying four categories of CVC investments. They are, in brief:

Driving Investments: This, however, becomes a disadvantage when the company wants to access disruptive strategies which are beyond its current capabilities in an uncertain and dynamic environment.

Enabling investment: This type can only be justified if CVC can capture a substantial portion of the market's they rely on an eco-system.

Emerging Investments: Such a new enterprise can suddenly turn out to be strategically useful if the business environment changes or if a company's strategy changes. This provides it with a strategic upside option in addition to any financial benefits it may receive.

Passive Investment: The pitfall of this type is that if the value of the investment decreased there is no remaining benefit which might be captured if there was a strategic objective.

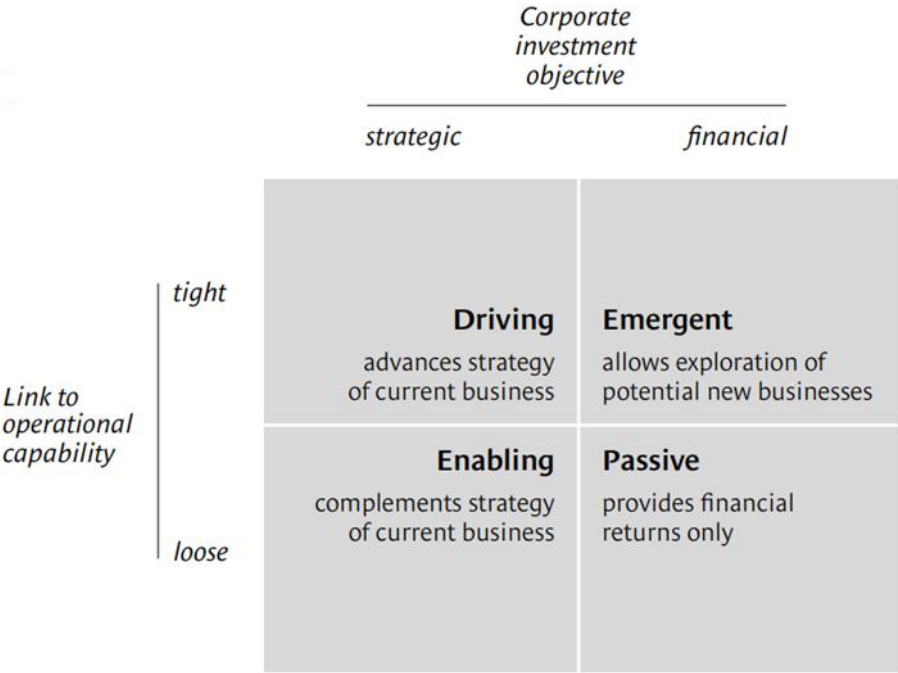


Figure 4. Mapping of CVC objectives versus operation

3.2 SOI Framework

A company's philosophy, values, products, processes, or practices may all be changed intentionally as part of sustainability-oriented innovation (SOI) in order to produce and realize social and environmental value in addition to financial gains. Operational Optimization ("Eco Efficiency"), Organizational Transformation ("New Market Opportunities"), and System Building ("Social Change") are the three steps that make up John Bessant's suggested SOI framework. Operational optimization refers to a "doing the same things but better" strategy aimed at decreasing harm by reactive, incremental improvements driven by compliance or proactively pursuing efficiencies. It shows an internally focused perspective on sustainability.

Organizational transformation signifies a significant shift in perspective and goal from "doing less harm" to "doing good by doing new things," or "doing good by doing new things." A redefining of internal and external interactions that is increasingly conceived in terms of

environmental and social impacts characterizes the situation. Going back to the SOI framework's three pillars, activities tend to be less exclusive, more focused on people, and more fully integrated with sustainability. Although it extends to immediate stakeholders as well, it continues to be primarily internally focused, suffusing, and diffusing sustainability throughout the business.

Reframing the aim of business in society as "doing good by doing new things with others" demands another dramatic shift in philosophy as a result of systems building. The environment is characterized by a shift toward networks of relationships in which sustainability value is produced collaboratively rather than individually (del R'o et al., 2010), and firms shift from existing in isolation and in competition to integrated collaborations, with the potential to bring systems-shaping innovations (Gulbrandsen, 2005; Taylor, 2005): "interconnected set[s] of innovations, where each influences the other, with innovation both in the parts of the system (Mulgan & Leadbeater, 2013).

	Operational Optimization: doing more with less	Organizational Transformation: doing good by doing new things	Systems Building: doing good by doing new things with others
Strategy	<ul style="list-style-type: none"> Comply with regulations or pursue efficiency gains 	<ul style="list-style-type: none"> Embed sustainability as a cultural and strategic norm in a shaping logic that goes beyond greening 	<ul style="list-style-type: none"> Logic of wide collaborations and investing in systems solutions to derive new, co-created value propositions
Process	<ul style="list-style-type: none"> Focus on internal and incremental innovation facilitated by use of tools 	<ul style="list-style-type: none"> Adopt new values and platforms (e.g. reverse innovation) and new ideation practices (e.g. biomimicry) 	<ul style="list-style-type: none"> Adopt new collaborative process platforms with diverse stakeholders
Learning	<ul style="list-style-type: none"> Exploit existing knowledge management capabilities to identify and access relevant knowledge 	<ul style="list-style-type: none"> Engage with key stakeholders of the firm – internal and external 	<ul style="list-style-type: none"> Develop ambidextrous skills enabling 'shadow tracking' and learning from experimentation with multiple new approaches
Linkages	<ul style="list-style-type: none"> Recruit external domain experts for new knowledge 	<ul style="list-style-type: none"> Shift focus from intra-firm linkages to collaborations with immediate stakeholders 	<ul style="list-style-type: none"> Get the whole system in the room to diagnose problems, understand system complexity, build trust and identify levers for change
Innovative organization	<ul style="list-style-type: none"> Exploit existing innovation capabilities 	<ul style="list-style-type: none"> Embed SOI culture through the organization 	<ul style="list-style-type: none"> Adopt new business paradigms (e.g. B-Corps)

Table 1. Activities of SOI.

By engaging in CV, corporations can leverage the power of startups and early-stage ventures to drive sustainability-oriented innovation across different aspects of the SOI framework, ultimately leading to positive environmental, social, and economic outcomes.

4. METHODS

4.1 Research Design

We used a qualitative method in our research. Due to the scarcity of information on the website on the activities of CVC firms, it became evident that multiple techniques of analysis would be required. Furthermore, the qualitative method promotes the development of deep listening between the researcher and the object of study (Hesse-Biber, 2010).

However, a qualitative approach does not preclude the use of database analysis to provide a more comprehensive picture of what is occurring. In our situation, a systematic technique - Web scraping - was employed to acquire data from numerous publicly available databases (Zhao, 2017). Because just eight CVC were to be analyzed, it was determined that the database would be compiled manually.

Because our master's thesis will investigate the phenomena of CVC in Norway and we want to analyze cooperation from both sides - the CVC side and the startup side we used the case studies technique (Starman, 2013). We chose the Disciplined configurative style of case study in our instance because we compare the outcomes of the investigation with the validated theory (George & Bennett, 2005).

It is required to collect data to do the analysis. It is typical to divide the primary, or material gathered by the researcher, from the secondary, or information gathered by someone else (Jilcha Sileyew, 2020).

We obtained secondary information by analyzing publicly available websites and corporate reports. This is required to have a broad understanding of how corporations and startups collaborate. However, as previously said, the sites only provide limited information.

As a result, gathering primary information is required to fill in the gaps in secondary information. An in-depth interview is one way that may be used for it. This is a one-on-one interview with a corporate representative based on a pre-planned scenario. It normally takes around 40 minutes and can be done both offline and online, depending on the respondent's preference. When compared to other approaches, this method has the benefit of providing more precise information on the thing under study. However, this strategy has a significant drawback: it is prone to prejudice. Employees at firms may wish to demonstrate that their approach to work is the best, therefore their responses may be biased. As a result, it is critical to design the interview in such a way that prejudice is minimized (Carolyn Boyce, 2006).

4.2 Database design

To undertake a comprehensive analysis of CVC in Norway, it was determined to construct a table containing startup information for each company. The list of participants was derived from the [Norwegian Venture Capital Association's](#) website. The participant roster contains both CVC and VC. Since CVC is the primary focus of our research, it was decided to only include them in the table. In addition to the companies listed on the website, the table also included DNV Ventures.

We encountered limitations when collecting data. CVC websites do not provide detailed information on their portfolios. Some websites lack a description of the startup, its industry, year of establishment, and place of origin. Others include no links to startup websites. And therefore, we had to rely on third-party databases like CrunchBase and Pitchbook. Proff.no was generally utilized to determine the year of establishment as well as the industry of the primary firm and its CVC. The collected information is shown in Table 2 below, along with an explanation of the information contained inside them and their source. The complete database can be found in Appendix 4.

#	Collected information	Description	Sources/references
1	Head Company (HC)	Head company name	Head company website
2	HC description + Year	Description of the head company and the year of its foundation	Head company website Proff.no
3	CVC	CVC name	Head company website
4	CVC description + Year	Description of the CVC and the year of its foundation	CVC Website Proff.no
5	CVC focus	Description which startups CVC is considering for investment	CVC Website
6	Startup (ST)	Startup name	CVC Website – Portfolio and News
7	ST area	Geographical location of the startup	-
8	ST country	The country where the startup is located	Startup Website
9	ST description	Description of startup activity	Startup Website CrunchBase
10	ST type	Startup Industry	CrunchBase Pitchbook
11	ST year	The year the startup was founded.	CrunchBase Pitchbook Proff.no
12	Number of employees	Number of startup employees	CrunchBase Pitchbook Proff.no

13	Seed round funding	The latest investment round of a startup.	CrunchBase Pitchbook
14	Additional direction 1 lvl.	The operations of the startup are focused on sustainability, digitization, the Internet of Things, and artificial intelligence.	Startup Website
15	Additional direction 2 lvl.	Because it might be a mix of various directions at the same time, we designate three columns to account for this.	
16	Additional direction 3 lvl.		

Table 2. Description and source of information for the database

However, because Crunchbase and Pitchbook do not have a single list of industries, it was decided to use a generalized list, designed by us. We merged numerous categories under one industry. The industries included in our database are detailed in Table 3 below.

#	Industry name	Description
1	AgTech	The firms' operations are focused on developing agricultural technology and offering agricultural services.
2	Business Software	The company's operations are geared towards developing software that aid in management.
3	CleanTech	The operations of the firms are geared at producing cleaning gadgets or offering cleaning services. It comprises a carbon footprint reduction service as well as raw material cleaning.
4	Cyber Security	The actions of the firm are targeted at delivering a service to ensure cybersecurity.
5	E-Commerce	The firm serves as a point of sale for online purchases. Forwarding services, such as the resale of secondhand products are also included.
6	Electrical Equipment	The firms' activities are targeted at producing various types of electrical equipment.
7	Energy Management	The activities of the enterprises are centered on energy management and transportation.
8	Energy Production	The activities of the enterprises are centered on energy generation. The majority of the firms on the list are involved in the generation of renewable energy.
9	Energy Storage	The firms' efforts are geared towards the development of energy storage facilities.
10	Financial Services	The operations of the firms are geared at providing financial transaction services. For example, a new mobile bank or facilitating the financial part for farmers.
11	Logistics	The firms' efforts are geared towards moving products not just by land, but also via drone.
12	MarineTech	The operations of the firm are dedicated to maritime technology, whether hardware or software.
13	Property Management	The firms' operations are focused on dealing with real estate or offering services for real estate upkeep.
14	VC	Venture capital.

Table 3. Definition of industries

4.3 Case study design

4.3.1 Primary Data

We used interviews and reports as primary sources of information for the case studies. We began contacting them in a methodical manner since we had a CVC list. At that point, we encountered a constraint in the absence of a contact person or email address on various CVC websites, such as the Nordea Startups and Growth website. We basically contacted them via email or LinkedIn profiles. Following our contact with CVC, we moved on to contact startups. We generally requested a CVC representative to link us with companies that we could work with. As a result, there is a guarantee of dialogue. Yara Growth Ventures (YGV) is an exception; we independently contacted firms in its portfolio but received no response.

#	CVC	Way of connection	Responded?	Startups	Way of connection	Responded?
1	Bring Ventures	LinkedIn	No	-	-	-
2	DNB Ventures	Email	No	-	-	-
3	Evinny Ventures	Email	Yes	Amina Charging	Via supervisor contact	Yes
4	Nordea Start up and growth	No contact	-	-	-	-
5	Lyse Vekst	Email	No	-	-	-
6	Equinor Ventures	LinkedIn	No	-	-	-
7	Yara Growth Ventures	Email	Yes	Plant Response Tarfin Sabanto Jai Kisan Hydrogen Mem-Tech H2PRO Boost Bioms Agrofy Boomitra Apollo Agriculture	LinkedIn	No
8	DNV Ventures	LinkedIn	Yes	Umotif Raptor Maps ScoutDI Provision	Via DNV contacted person	Yes

Table 4. CVC communication channels and response status

The interviewees were contacted via email to schedule the interviews and they had a Teams interview. They were informed that the information would be published as part of this thesis. We did 13 interviews, and each one took between 30 minutes and an hour, on average. During that time, we were able to get through the whole list of questions, but there was also the chance of a second interview where we could talk in more depth about some issues and requirements.

The transcribe for each interview is stored in the UIS Teams and the correction made to the transcribed data. Below in Table 5 you can see the schedule of interviews with dates.

#	Date	CVC/Startup	Purpose of the interview
1	21.02.23	YGVs	Collecting primary information about CVC
2	23.03.23	DNV Ventures	Collecting primary information about CVC
3	23.03.23	Varda	Collecting primary information about Startup
4	28.03.23	Yara	Interview with the Sustainability Department
5	29.03.23	DNV Ventures	Details about requirements
6	03.04.23	YGV	Additional interview about the collaboration process
7	14.04.23	DNV Ventures	Additional interview about the collaboration process
8	20.04.23	Umotif	Collecting primary information about Startup
9	20.04.23	Raptor Maps	Collecting primary information about Startup
10	21.04.23	ScoutDI	Collecting primary information about Startup
11	24.04.23	Provision	Collecting primary information about Startup
12	08.05.23	Amina Charging	Collecting primary information about Startup
13	12.05.23	Eviny Ventures	Collecting primary information about CVC

Table 5. Interview schedule

We called a representative of the Sustainability department to complement the information regarding YGV, however it was revealed during the discussion that the Sustainability department does not engage in the activities of CVC in any manner. We also reached out to the startup Varda. It was established by Yara. However, because this scenario differed from the link between CVC and startups that we researched, it was decided not to utilize it.

Interview questions were designed in line with SOI and CVC framework of an Ambidextrous organization. There are two sets of questions: one for CVC and one for startups. Nonetheless, both groups of questions enabled us to collect the same information, although from two opposing perspectives.

The themes on which questions were generated are listed below. It will be covered in greater depth in Section 5.2.1 Representative Case study Interviews.

- The CVC background.
- Focus on financial or strategic objectives.
- CVC process of engaging with startups.
- Benefits of collaboration and investment.
- Measurement of outcomes.

- Challenges and conflicts of interest.

We have chosen the following themes for the examination of Startups in addition to the already mentioned:

- Level of autonomy and changes.
- Sustainability and Innovation Impact.

The second aspect is also included in the CVC analysis, but it has its own section - 5.2.2 Report Analysis.

Appendix 3 contains a set of questions for CVCs and startups.

4.4.2 Secondary Data

CVC does not have separate reporting on its operations. As a result, we examined the head businesses' annual reports and reports on sustainability in order to better understand the role of CVC in the company's strategy. It's also worth noting that there's not a lot of information about the CVC section on the main company's website. The yearly reports include only basic information about CVC and do not include any financial reporting or other statistics that may be used to assess the department's success. The interviews revealed why CVC data is not published in the main company's annual report. CVC's contribution is insignificant in comparison to the overall return of the firm. Despite the limited information, we were able to identify material for analysis, which will be reported in section 5.2.2 Report Analysis.

5. FINDINGS

5.1 Findings from Norwegian CVC Database

There are eight CVC firms in Norway operating by enterprises from diverse industries. Except for Equinor Ventures, which was founded in 1991, all companies were founded between 2017 and 2021.

#	Head company	Industry	CVC	CVC year of establishment
1	Posten	Postal services	Bring Ventures	2021
2	DNB	Banking	DNB Ventures	2017
3	Eviny	Energy supply	Eviny Ventures	2017
4	Nordea	Banking	Nordea Start up and growth	2017
5	Lyse	Energy supply	Lyse Vekst	2021
6	Equinor	Energy supply	Equinor Ventures	1991
7	Yara International	Agriculture	YGVs	2021
8	DNV	Risk Management	DNV Ventures	2020

Table 6. Head companies with their CVC in Norway

Below is an examination of the database provided inside the startup, industry, and additional direction.

5.1.1 Startups

Despite the fact that we are only observing Norwegian CVC, it is evident that corporations invest in businesses in other countries as well. The map below depicts the countries where the startups being invested in are located.

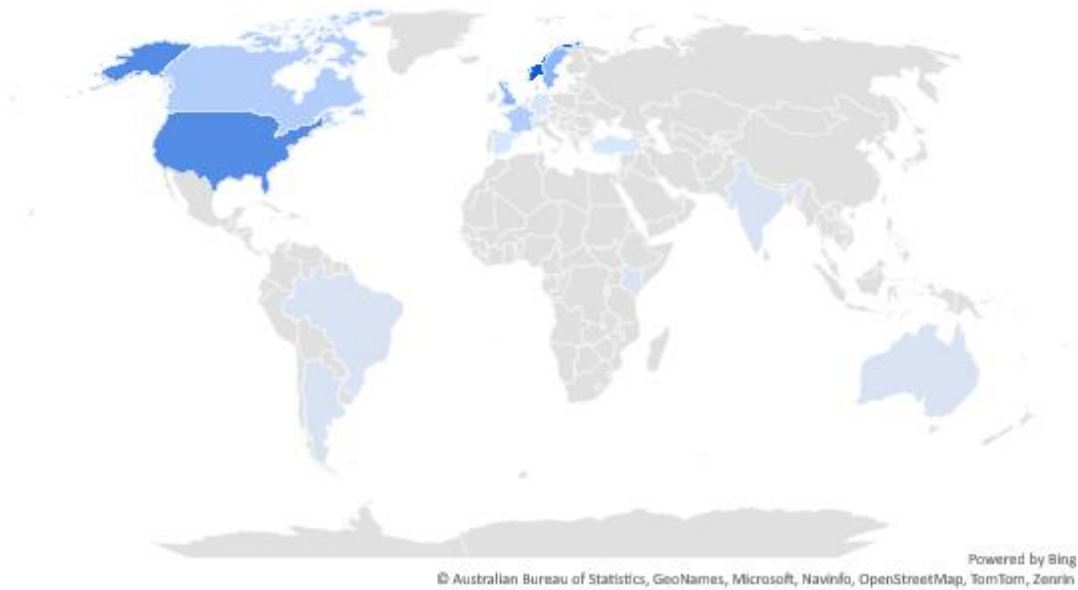


Figure 55. Distribution of investment around the world

#	Area	Number of startups in the area		Country	Number of startups in the country	
1	Norway	51	48%	Norway	51	48%
2	North America	24	23%	US	22	21%
Canada				2	2%	
3	UK+Europe	13	12%	UK	7	7%
France				2	2%	
Germany				1	1%	
Netherlands				1	1%	
Spain				1	1%	
Switzerland				1	1%	
4				Scandinavia	9	8%
Denmark	2	2%				
5	Asia	5	5%	Israel	2	2%
India				1	1%	
Singapore				1	1%	
Turkey				1	1%	
6	South America	2	2%	Brazil	1	1%
Argentina				1	1%	
7	Africa	1	1%	Kenya	1	1%
8	Australia	1	1%	Australia	1	1%

Table 7. The number of startups in each area and in each country

As can be seen from the map and table, Norway is a leader in startup investment. Following that is North America, where they invest in 23% businesses, 21% of which are in the United States. Europe is ranked third with 12%, with the UK ranking first in terms of investment when compared to other European countries. Scandinavia is much behind – 8%. Despite its proximity to Sweden, the organization invests in just 7 Swedish and 2 Danish companies. Israel is the top in Asia, with two firms in which Norwegian CVC invests. Companies in South America invest in one company apiece, with headquarters in Brazil and Argentina. The same applies in Africa and Australia, where just one startup gets funded.

In addition, we underlined the relevance of geographical location between a CVC and a startup in 2.5 Industrial and geographical diversification in CVC section. The shorter the distance, the simpler it is to establish contact. As a result, we believe it is critical to include this in our study. The firms under consideration can be classified into two types:

Equinor Ventures, DNV Ventures, and YGV are examples of global corporations. These organizations have branches on every continent and a diverse investment portfolio, making it easy to stay in touch with entrepreneurs on the other side of the world.

Lyse Vekst, Eviny Ventures, Nordea Startup and Growth, DNB Ventures, and Bring Ventures are examples of local enterprises. These firms' operations are either confined to the Norwegian market or to the nearest foreign nations - Scandinavia and Europe. So, this is validation of what was said in the theory above. It is common for firms to form partnerships with startups that are based relatively near to the head company or in the region where they have a branch.

#	CVC	Area	Number of startups in the area	Total
1	Lyse Vekst	Norway	13	13
		Norway	10	
2	Equinor Ventures	North America	16	38
		UK+Europe	9	
		Asia	2	
		Australia	1	
3	Eviny Ventures	Norway	9	10
		Scandinavia	1	
4	Nordea Start up and growth	Norway	6	6
5	DNB Ventures	Norway	6	8
		Scandinavia	2	
6	Bring Ventures	Norway	6	13

	Scandinavia	6	
	UK+Europe	1	
7	DNV Ventures		
	Norway	3	
	North America	4	9
	UK+Europe	2	
8	Yara Growth Ventures		
	Norway	2	
	North America	4	
	Asia	3	13
	South America	2	
	UK+Europe	1	
	Africa	1	

Table 8. The number of startups in each CVC, based on the area.

From a business standpoint, Lyse Vekst invests the most in Norwegian startups. At the present, all of the startups in which they invest are based in Norway. Equinor Ventures comes after that. Despite ranking second in terms of the number of companies invested in, the majority of their investments are directed towards North America. DNV Ventures and YGV exhibit a similar tendency.

5.1.2 Industry

If we analyze CVC from the point of view of the industry, then we can consider the following picture.

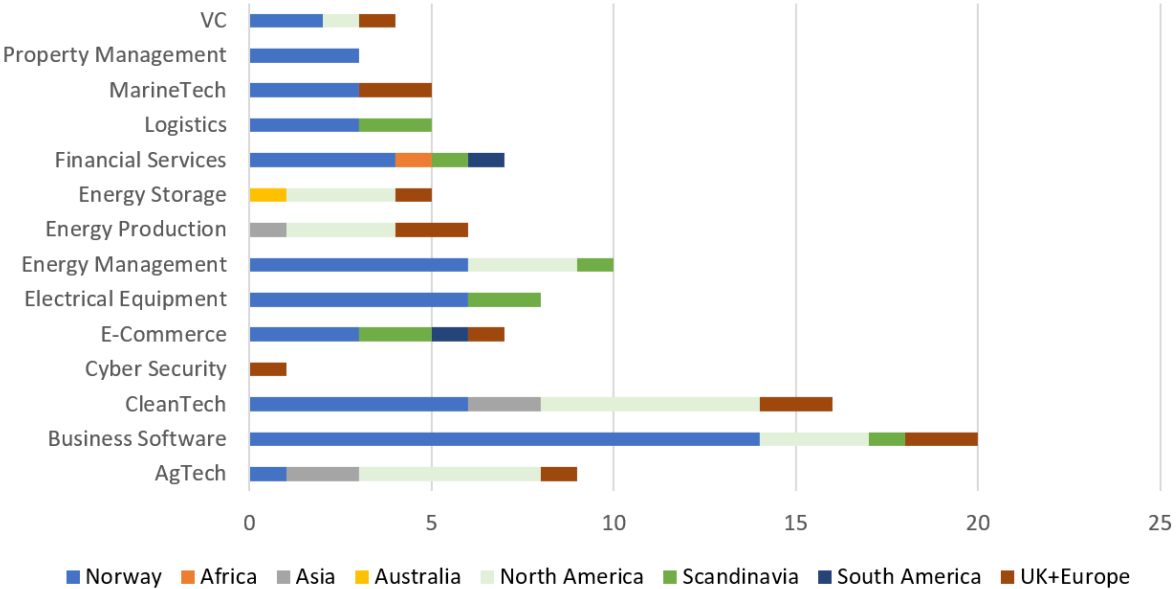


Figure 66. Industry distribution by country.

The top three industries in terms of investment are business software, CleanTech, and energy management. Furthermore, the number of startups from Norway is highest in business software

and energy management, whereas the number of companies from North America is equal to the number of startups from Norway in CleanTech. Furthermore, according to our study, CleanTech is the most invested in sector in North America. In terms of other areas, there is just one African company in financial services and one Australian business in energy storage. There is one South American startup in financial services and e-commerce. Two Asian startups are active in the CleanTech and AgTech sectors. The leading industries in the Scandinavian area include logistics, electrical equipment, and e-commerce. Top industries in Europe and the UK are distributed as follows: business software, CleanTech, energy production, and MarineTech. It is notable that Norwegian entrepreneurs are present in nearly every industry. Energy production, energy storage, and cybersecurity are excluded. In the energy production and energy storage industries, the majority of investments are made in North America -based firms, whereas the only cybersecurity investment is made in UK+Europe area.

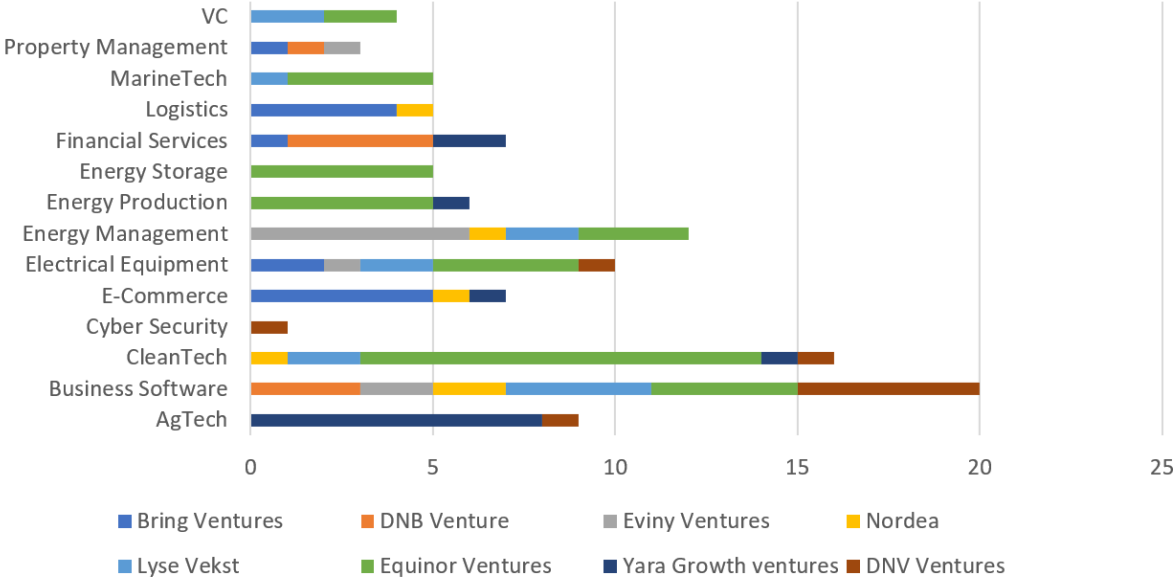


Figure 77. Distribution of CVC investments by industry

The CVC distribution is seen above. Bring Ventures makes the biggest investments in e-commerce and logistics. DNB Ventures in the financial services sector. Eviny Ventures makes an investment in energy management. The leading industry for Nordea is business software. The same thing happened to Lyse Vekst. Equinor Ventures invests the most in CleanTech, and only among the analyzed firms invest in energy storage, and if we consider the preceding graph, Equinor Ventures invests in startups in this field from many nations. AgTech is the most

important industry for Yara. And for DNV Ventures, it is business software, and they are the only ones who invest in cybersecurity.

5.1.3 Additional directions

Also worthy of consideration are the Open Innovation Report 2023's analysis data, which examined the interaction between corporate and entrepreneurs. According to the findings of the study, corporations attempted to collaborate with entrepreneurs in three areas: sustainability, artificial intelligence, and cyber security (The Open Innovation Report 2023, n.d.). In the analysis of this study, we decided to also take this into account.

In addition to defining the sustainability defined in the 3.2 SOI Framework, we also wish to define digitalization.

Digitalization is the use of digitization methods as a socio-technological process, where digitization is the technical process of converting analogue information into a digital version (Bican & Brem, 2020).

And based on them, startup activities were divided into these categories. The tables below display the distribution's results.

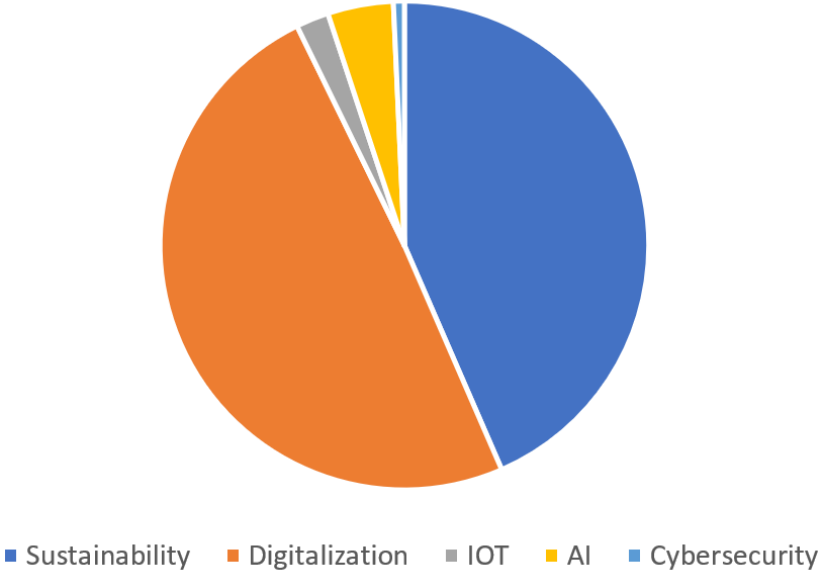


Figure 88. Share of an additional direction of startups

As the pie chart above shows, the majority of startups' operations are geared towards digitalizing processes, with a smaller number focusing on sustainable economic development. It should be noted, however, that these shares are contiguous; that is, even if a business specifies

sustainability as its emphasis, it almost certainly includes some form of digital solution for analytics or management.

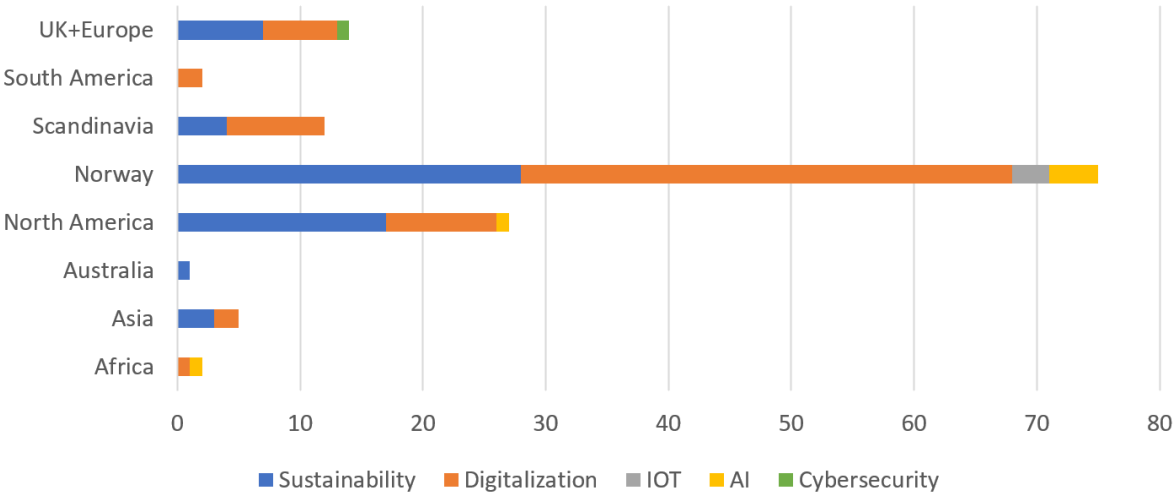


Figure 99. Distribution of startup's additional direction by area.

The distribution of startup emphasis by region may be seen above. We already know from the study above that Norwegian startups invest the most. All further starting directions may be seen in Norway, according to the graph. Except for cyber security, which is exclusively available in the UK+Europe zone. It is also worth emphasizing that, despite the fact that these regions require assistance for sustainable development, the direction of sustainable development is lacking in regions such as South America and Africa. (Bárcena et al., 2021; Ogunyemi et al., 2022)

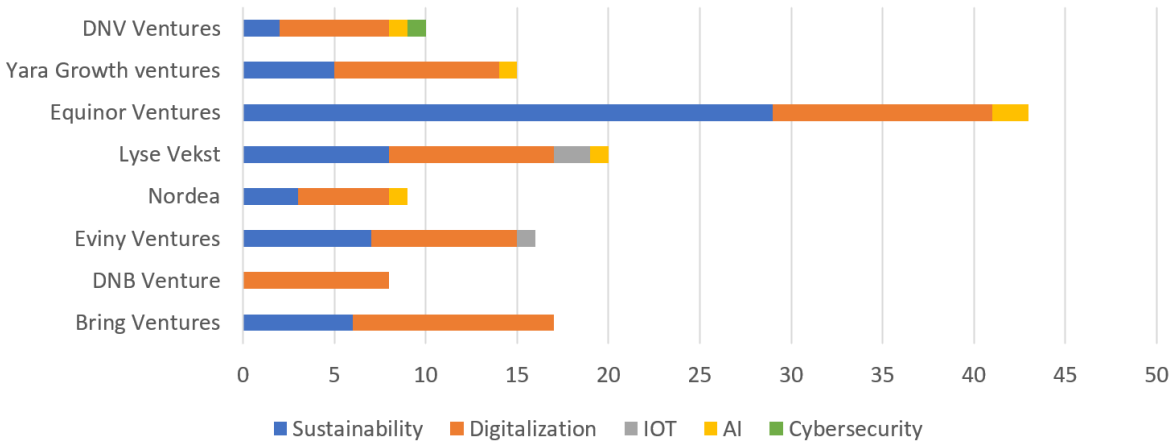


Figure 1010. Distribution of startup's additional direction by CVC

We also believe it is critical to examine the allocation of startup emphasis depending on companies. Equinor Ventures invests the most in sustainable startups, however, keep in mind

that this corporation is also the top in terms of the number of companies financed. Furthermore, none of the businesses seem to focus exclusively on any one aspect of the starting business. In addition to DNB Ventures, all businesses in which they invest are geared towards digitalization; nevertheless, this is justified by the company's preference for startups in the financial services and business software industries.

5.2 Findings from case study

5.2.1 Representative Case study Interviews

The representative case interviews were done for DNV Ventures, Eviny Ventures and YGV. DNV Ventures was able to provide 4 startups to be interviewed providing a more holistic analysis from both perspectives. Eviny Ventures provided 1 startup and None from YGV. Below Table 9 provides an overview of the interviewed CVC and their relevant startups.

CVC	Background	Related startup	Background
DNV Ventures	We invest responsibly, in alignment with ethical and sustainable investment guidelines, into startups aiming to tackle challenges arising from global transformations. In return for a 1% - 20% equity share, we provide access to our body of experts at the cutting-edge of new digital solutions across our core industries; facilitate connections to our 100,000 customers and partners; and open access to our global distribution network.	Umotif	UMotif provides the next generation eCOA/ePRO and engagement platform designed to power clinical, post-marketing and real-world research.
		Raptor Maps	Raptor Solar is a sophisticated solar lifecycle software-as-a-service platform. Raptor Solar optimises PV assets, standardises data, analyses insights, and collaborates using our industry-leading data model. Increase asset efficiency, personnel effectiveness, and financial return.
		ScoutDI	Offers a tethered drone system designed for inspection of confined spaces and indoor industrial assets.
		Provision	A single platform to capture and analyse all food safety and quality data.

Evinity Ventures	Evinity Ventures is an active early-stage investor in companies with great potential that help accelerate the energy transformation. Amina Charging	EV charging hardware made to integrate with energy ecosystems.
YGV	The team invests in food and agricultural entrepreneurs and venture capital funds that combine science and technology. We fund startups and venture businesses. Startup investments let us collaborate with entrepreneurs. We partner with experienced venture capitalists with strong networks in our key areas to expand our reach into local startup ecosystems through fund investments. To achieve sustainability through broad adoption, we seek enterprises with a high effect, minimal effort, and price parity or better with present practises.	-

Table 9. Overview of the interviewed CVC.

5.2.1.1 CVC Representative Interviews

The interviews conducted are analyzed in the Tables 10 - 13 below with the topic themes of the interview questions used as guidelines.

CVC	Topic	Summary of representative response	Representative quote
Eviny Ventures	Focus on financial or strategic objective	Has both strategic and financial objectives	<i>Eviny representative reiterated that ensuring a good fit with the startup was of utmost importance. They hope to invest in the company as it is the right thing to do and not to be coerced into collaboration. Also, they try to ensure that the startup does not change its offering or try to fit in the mandate of the CVC. The investment committee has a strategic rationale on the strategic reasons for investing. However, they try to find a balance between being strategic and trying out different things. Although the strategy is not measured, they have a clear hypothesis on why they should invest. They invest in the energy transition, and this is aligned to their mandate.</i>
YGV		Focus is mostly financial with minimal focus on strategic	<i>Yara representative reiterated that the main investment objective was financial and there was minimal focus on the strategic objectives. However, one of the representatives mentioned that when deciding to invest there may be a strategic interest in the long term.</i>
DNV Ventures		Has both strategic and financial objectives. Place higher priority on strategic	<i>DNV representative strongly supported that all CVC has a strategic rational and cannot be purely financial. VC tends to grow more and more independent from the modern company overtime, a lot of them are doing that, not all of them, but some. From a financial point of view there are a lot of investments opportunities that I'm not able to do which I would like to be done, which is taken claim is within the realm of our strategy. if I'm not able to provide significant value than just our capital through our portfolio company and then in return get this potential partnership going. every corporate has a negative impact on their investment so if somebody takes our capital it's going to be more difficult to sell their services to our competitors or attract our competitors as they are key kind of our partners or stuff like that so not sending back up we have luckily for us very often we are independent so we their focus is not the type of companies that we are as a customer as a partner maybe more as a partner. The focus for DNV strategically was to increase their value proposition to the customers they are serving and not to use the product per se.</i>

Table 10. Analyses of CVC interviews on the topic “Focus on financial or strategic objective”.

CVC	Topic	Summary of representative response	Representative quote
Eviny Ventures	CVC Process of engaging with startups	<p>Follows normal deal flow process.</p> <p>Focused on ensuring autonomy of the startup.</p> <p>Need to engage with startups which can scale</p>	<p><i>Eviny representative said process of engagement starts off with deal flow and that our mandate is within energy transition. They have found many companies as part of their subcontractors and invest in them if they think it is something the company or the industry requires. They don't have one size that fits all criteria for startup selection and the major part is if they can make money and fits their mandate. If the team is behind it and timing is right with a big enough market that can scale, then that will create a lot of value for their customers.</i></p> <p><i>Once we have invested, we invite the company to Bergen, and we have the day where we set up different meeting the different departments to ensure that they can connect to the different parts of the organization without us being intermediate intermediary and then in addition to that we always take board seats. They also want to ensure that companies have an easy way into the organization without us having to you know act as intermediary or slowing them down.</i></p> <p><i>Eviny Ventures wants to be independent and not coerce any company into working together. The startup should focus on getting a standardized product which can be scaled and its great if it fits in one of Eviny projects, but they don't need to customize anything to fit into their project. They are keen on ensuring there is no start up distraction.</i></p>
YGV		<p>Follows normal deal flow process.</p> <p>Have a thesis which formulates their investment guidelines.</p>	<p><i>Yara follows a standard flow of engaging with startups (see Appendix 2). The types of investments that they do can be usually range from 1 to \$5 million that we're investing, and it is usually you know a Series A or later and so that is a term related to like what stage the company is in their investment cycle usually that means it's a company that's like post commercialization, they're already started to commercialize a product. But even that is a bit of a guardrail but not a rule because there are a lot of biotech companies that take a long time to commercialize. And then related to like how we build our funnel and do investments obviously core part of what we do is building a</i></p>

network with startup founders and companies you know like building a top-down thesis perspective on one of the areas that we feel as of interest to shaping the future of agriculture and reconcile that relative to you know potential relevance to Yara. They also follow specific hypothesis. From the hypothesis they get the idea of what areas are relevant and find startups in this space. This could be done through attending conferences, inbound requests from the startups or referrals from employees. After the due diligence is done to check viability with 5 executives representing different business units and perspectives. Once approval is made term sheets are sent out and depending on the agreement, they will have a board seat and an equity stake. They don't have a continuous relationship with the start up after that, however they are ready to offer assistance if required and play a silent role. They hang on to the companies until the lifespan until liquidity of the shares or it goes public and then evaluate the position.

Yara is not working on any projects with the startups.

DNV
Ventures

Follows normal deal flow process.
Works with some startups on projects to increase their value proposition.

DNV representative said they source their startups in different ways. One of the methods also seen on the website was the use of submitting a video, however this will be removed in future as it was difficult to manage. They screen and find relevant companies in the investor network, desktop screening and relevant references and sometimes take part in a lot of networking events. If the company is complementary, then they do some sculpting exercises which take few months, and this can also be done through google to come up with a list and then the venture team narrows down to what is relevant. It is important for them to have a fit between the two companies. They also engage the relevant business Units and the Innovation department to see the strategic value. Due diligence is also done to figure out investment potential and a bit of customer interview. Once successful it is brought up to the investment committee, which is the board and CEO, and they make the formal investment decision. Later is the signing of the deal and portfolio management. Agreement on equity and board seat is done case to case.

DNV has an equity frame which is 500million or 100 million per year and this doesn't affect the balance sheet of the parent company unless they lose money. They invest in a stake of between 1 to 20% and this is negotiable from case to case. They also have board members to oversee the collaboration and sometimes the board member can be from a different location to ease access.

DNV works with some of the startups in projects, however it is more to add value proposition to the customers they serve. The process they follow in engaging with startups is also not a formal process and they are eager to have a formal process in place and measurement metrics. In the meantime, they engage relevant business units from time to time whenever required and may even connect them with the startups.

Table 11. Analyses of CVC interviews on the topic “CVC Process of engaging with startups.”.

CVC	Topic	Summary of representative response	Representative quote
Eviny Ventures	Benefits from the collaboration and investment	Cultural change and new ways of thinking. Learning opportunities. Sharing of resources and competence with the startups	<i>Eviny representative said from the collaboration there are new ways of working which push the organization in using new technology. He hypothesized that it also creates a cultural port where learning culture and marketing benefits can be accrued. They also help the start up by providing resources, for example financial modelling, hiring, technical discussions etc. They are keen on engaging with startups that already know where they are going. They don't interfere with the startups but only serve to give guidance where required.</i>
YGV		Learning opportunity	<i>Yara identified that learning from the start ups was one of the most important benefits they got from the collaboration.</i>
DNV Ventures		Increased learning and value proposition	<i>DNV identified that the benefit as increasing their value proposition and learning.</i>
Eviny Ventures	Measurement of outcomes	Normal KPIs Mostly financial metrics. No strategic metrics	<i>Eviny measured in terms of how many news articles to measure if they are getting their names to the company. Apart from that all other measurements are mostly financial. As for sustainability there are no requirements from the CVC to the parent company. That's true we do measure it so OK we do have some KPIs that are kind of how many news articles are we getting our name out how many companies have we introduced to the to the corporation there are there are a few but most important our financial return.</i>

YGV	Mostly financial metrics. No strategic metrics	<i>Yara only used financial metrics to measure its funds. As for sustainability there are no requirements from the CVC to the parent company.</i>
DNV Ventures	Mostly financial metrics. No strategic metrics but focused on creating a measurement for their strategy in future	<i>DNV metrics for the portfolio company are mainly the kind of growth metrics which are used. The financial performance is measured as per the total fund. There are no metrics for strategy established but are eager to create some type of metrics. As for sustainability there are no requirements from the CVC to the parent company.</i>

Table 12. Analyses of CVC interviews on the topics “Benefits from the collaboration and investment” and “Measurement of outcomes”.

CVC	Topic	Summary of representative response	Representative quote
Eviny Ventures	Challenges and conflicts of interest	Convincing the startups, they are not right fit	<i>Eviny faced the challenge sometimes to convince the companies if they are not the right fit, especially in terms of longevity and validity. Since the fund will be locked up for a long time, they needed to follow their mandate.</i>
YGV		Moving guidelines. Compensation of members. Long period for assessment	<i>Yara identified the challenges as just the regular things related to investment and sometimes there can be moving guidelines related to what you are looking for or the success criteria. Other issues can be compensation for team members. In general, these were normal problems. However, identified that generally startups have complained about CVC taking too long for the assessment. However, it is beneficial if the parent company already has an established collaboration tie to work within the specific window quickly.</i>
DNV Ventures		Slow pace of the CVC. Ensuring to create trust. Different time zones with startups	<i>DNV identified similar challenges of startups generally complaining of slow pace of the CVCs. In addition, since they have companies in different time zones this can also be a challenge. Also ensuring to create trust with the companies they invest in as there is a lot of confidential information, and the companies may be wary of their ideas being taken. However, DNV is focused on creating a trusting relationship and where applicable they sign Non-Disclosure Agreements.</i>

Table 13. Analyses of CVC interviews on the topic “Challenges and conflicts of interest”.

5.2.1.2 Startups Representative Interviews

We interviewed representatives from 5 startups namely Amina charging (Eviny Ventures) and Umotif, Raptor Maps, ScoutDI and Provision (DNV). The areas covered were Overview, Objectives, Projects, Level of autonomy, Sustainability and Innovation Impact, Benefits, Measurement of outcomes, challenges, and conflicts of interest. The responses were reviewed according to the areas across all the startups to determine similarities and differences in Tables 14 - 20.

Startup	Topic	Summary	Startup representative quote
Amina charging	Objectives	Both strategic and financial objectives	<i>Has both strategic and financial objectives. Since Lyse is also an energy provider this is also a strategic motive. They believe energy providers will be crucial in EV charging and would like firsthand knowledge on their business model and being a professional company their knowledge and know how on commercialization and production. Also, a strategic objective is with Lyse owning Altibox this will be a great opportunity to expand within Norway.</i>
Provision		Both strategic and financial objectives Good strategic fit with the CVC Aim to access the clients in the food ecosystem. Client access in different locations Adopting sustainability	<i>Financial objectives were important however DNV also is a good fit strategically not only being the second largest investor in the US but as a consulting or audit entity they have access to 60% of Europe food market and over 20,000 clients within the food chain which is a long-term consideration. They also fit into DNV portfolio so even with a long-term consideration for the short terms is to access the clients in the food ecosystem which can help them pipeline the sales. Secondly with DNV 5-year plan 2020-2025 on digitizing as much as possible food safety included and that also includes sustainability. EU green rule and a few other things but the whole sustainability now starting to get adopted providing a good opportunity to work with the DNV. Thirdly is location because the end is so big it's going to take a while like we've been working on the partnership now for a year and a half it's going to take a while but when it starts moving now, we've got support in different time zones different languages and client access and different geographics in Europe.</i>
Raptor maps		Both strategic and financial objectives Good strategic fit with the CVC Integration of technologies and techniques Getting credibility in the solar industry	<i>Has both financial and strategic objectives and for an early-stage company it is important to have alignment of the roadmap and objectives. The collaboration is mutually beneficial as DNV is good at aggregating different technologies and techniques in their solar ecosystem and Raptor helps facilitate using their system record which has a lot of inputs and outputs enabling an MVP to fit in well. Another reason is credibility in the solar industry from DNV as having come out of MIT from Y combinator this is important. This type of investment also lays the foundation for similar potential investment and gives a chance to test the relationship further for future collaboration.</i>
ScoutDI		Both strategic and financial objectives	<i>Finance is important as without cash it is not possible to do anything. However, it was important to secure capital from a sensible partner who they align and share values. In</i>

	Good strategic fit with the CVC Aligned in values and culture	<i>addition, there is a big strategic alignment in values and culture. It is important to have proper due diligence to avoid misalignment.</i>
Umotif	mostly financial objectives however with minor hints of strategic interest Shared long term view	<i>Mostly financial objectives, however with minor hints of strategic interest as well. As for DNV it is a 50/50 balance as the investment although delivers return DNV is keen in where Umotif is going bridging the gap in healthcare and research and this helps DNV to move into healthcare. The motivation was to have an investor who shares longer term view.</i>

Table 14. Analyses of startup interviews on the topic "Objectives".

Startup	Topic	Summary	Startup representative quote
Amina charging	Projects	Invest and are a customer	<i>We treat them like any other customer. We have a setup of key account managers that handles the deal with Lyse the agreement and then also they tag along the marketing team to make sure that our marketing people speaks with Lyse marketing people and the key government directs us the project leader for the agreement. They are a customer on the same basis as other customers who haven't invested in in Amina.</i>
Provision		Negotiating different project possibilities	<i>In process of negotiating different deals for now but it is very slow they take up very long time like one of them we've been talking for a year and a half another one we've been talking for like 4 months and then the most recent one we been working on for about 3 months.</i>
Raptor maps		No project yet however there is prospective chance for further collaboration	<i>The most important thing is to map out the other organization because especially with a large organization you've got lots of different initiatives. An example when working with the head of solar in the US that initiative looks different than working with green power monitor on their SCADA platform right and that may look different than something else so first it's understanding you know mapping out the organization mapping out some of their key initiatives beyond just like the mission understanding where there's alignment with that and then focusing down on kind of the two or three that make the most sense because you know there's a lot of excitement there probably 10 or 15 ways you could engage but as a startup right you don't have those resources to do that so you've got to pick the highest value opportunities for both organizations.</i>

ScoutDI	Have multiple projects from the beginning with the parent company	<p><i>We have a portfolio of R&D projects, so we are now in into our second project with DNV. The first project we got when we started the company that ran for three years and then we got a follow up project that we run out this year very similar in in in style and type and both funded by the Norwegian Research Council, and we have maybe four or five projects like that now. In one project we are the project owner of the product we have with DNV. The project owner includes several project partners including the chief scientific officer. He's in the top management team and he owns the R&D project portfolio who interface with DNV and all other project partners. ScoutDI is the project owner providing governance .There is however no dedicated R&D team because the focus is on creating the product which is in R&D and can provide funding to our product development meaning that they have to be very much aligned with our product road map so when we engage in R&D project you know it's either because we can it is aligned our product road map or two we are part of the application process so we write them according to our product road map because we cannot do very diverse things that are not aligned with our product road map because very important thing in our startup is that you focus the good thing about R&D project is that they provide you funding which is always good right. The negative side is that it can take away focus on and make you do things that you could have done unless you have the project so we are trying to minimize that and we also tried to minimize that we kind of label people with OK you are the R&D engineer you just work on this project we are probably just used the product in and they focus on making the product right but at the same time comply with the things we just have to do in our only projects like for instance field test some but I think we have been quite good in aligning the R&D project scopes with what we are doing.</i></p>
Umotif	No projects as no potential fit identified	<p><i>No projects as for now. There is however a potential as DNV as an independent third party in data brokering and sharing could benefit from the data Umotif generates. This could widen the value proposition in terms of broadening the solution offered to clients. Potentially we as I say we haven't quite done found the right project cause the companies been through some tricky times which has made it difficult for us to explore some of these other areas I think there is definitely the potential in the future but that wasn't the biggest driver.</i></p>

Table 15. Analyses of startup interviews on the topic "Projects".

Startup	Topic	Summary	Startup representative quote
Amina charging	Level of autonomy and changes	Autonomous operation	<i>We haven't done any changes yet but the kind of is still in the early phase the investment was one year ago and we probably want to work even closer with Lyse going forward there could be changes coming in the next couple of years, but we haven't done anything yet influenced by Lyse.</i>
Provision		Autonomous operation	<i>DNV does not have an official board seat so they can't they can't specifically control the direction of the company the second thing is we will try to accommodate any introductions that client intros that they give us but only to a certain extent they've already made three or four requests so we just said no we can't do that an example is one of their teams wanted us to do integrations to temperature sensors and we just said look there have been 25 different companies that have done this in the past we're not going to go and build something that's already been built by somebody else so there's a bit of that and then the last thing is we know that we're the experts so all of the research that we do internally we try as much as possible to condense that and provide feedback when some of these topics come up. Changes are minimal and not impacting the operations as they only include reporting.</i>
Raptor maps		Autonomous operation	<i>Autonomy may shift we're not going to do something we weren't already going to do anyway right because then they would be dictating a road map however maybe there are certain things that you make a higher priority so a great example is that you know we are integrated with green power monitor which is one of the large scale platforms it's owned by DNV you know that became you know we know we wanted to do that anyway but that became a higher priority for us and kind of deepening our collaboration with that team as a result.</i>
ScoutDI		Autonomous operation Have different CVC also investing. Changes on priority focus Have board seat	<i>We have a mix so owners right so DNV the up until recently they had 5% of the shares so not a dominant shareholder we had a capital raise round becoming the second largest shareholder after Equinor ventures .We need to align to actually Equinor and DNV because they are the main shareholders but luckily we are we are well aligned with it's not something that we have focused a lot .You need to have the mandate to operate the on a daily basis not asking your owners from day-to-day what to do and this is also how we operate. Some things you have to do is one is you need to present plans and budgets you get support for you kind of you bring them into the boardroom to get approval for how you want to spend on it which is of course very important and then also the strategy</i>

for the company that this is something that the board of directors can stand behind and then you you've worked the plan you execute the plan and this is very important but not this CEO the company creates that space for operating the company on a daily basis because the board members they would just drop in every eight weeks or so and that's it's maybe the difference between the governance and management but the management team is managing the company and but the board will start to provide governance .If you can get that to work in a good way then the management team can feel freedom to operate they can feel that they have the trust from the board of directors but also the board can provide governance which is can be a valuable input and feedback to the management team that is kind of the ideal scenario you want to be in where you have enough freedom to operate but you also you get good guidance from the board and you're well aligned because securing mandates is important.

Changes are made as you're challenged on your priorities. DNV for instance maybe made us focus more on the software part like on the business model around that and that's been challenging us how to how can we increase the value we get out of that offering and how can we price it differently and some nearly as DNV being the strongest voice pushing us in more in that direction.

Umotif

Autonomous operation
CVC doesn't have any
board seats.

They are completely separate, and this was important for DNV and for us which is when they made their investment it was knowing that you know there could be some areas where we could work together but the company the U MOTIF needs to have its own its own direction it's not all you know affected by DNV so the goals and objectives of the two organizations are completely separate. DNV motives just like the other investors they purchased equity they've got an observer seat on our board. There's no requirement on DNV to do anything with us or for us and that's why I think this is effective because we're it would be different if we had done a deal with a pharmaceutical company who would be our client and if we did a strategic thing with them we would want actually something contractual that they were going use us .DNV as a different type of investor this arrangement is the best one because you know it's exploratory you know nobody's going into this kind of not really knowing whether the two companies should or will could work together. DNV receive information as an investor and they're observer to our board, so DNV and we value having their input in that way but no corporate structural changes.

Table 16. Analyses of startup interviews on the topic "Level of autonomy and changes".

Startup	Topic	Summary	Startup representative quote
Amina charging	Sustainability and Innovation Impact	No impact as of now but focused on sustainability trends	<i>I don't think you'll have accelerated it yet, but we are working on different kind of EU calls for funding and the horizon projects so that's something we want to have Lyse together with us working on innovation and especially within this EU calls setup project teams working on new technologies for EV charging. Using Lyse past experience with such projects and also going forward kind of using Lyse energy provider and having their expertise within such a project will with them definitely bring a lot of value.</i>
Provision		No significant value from CVC	<i>We haven't got any further value from DNV, yet I believe as the needs for sustainability and the structure around that whole topic comes to life, I think that'll drive some value but probably we'll be the ones giving them value because large companies they don't innovate. In central Mexico last week and I heard so there's one food safety standard called FSSC 22,000 they just announced that they have launched a formal sustainability program or certification so that's the first one that we've heard of that is actually a formal standard for sustainability.</i>
Raptor maps		Value adds in terms of risk management in the solar industry	<i>One of the things that DNV is good at that was involved in is whenever there's a significant transfer of risk in the end and there's always a transfer risk in the solar history right whether it's the developer you know selling a project to the owner maybe it's a construction company handling a project you know back after it's completed and so anything you can do to mitigate that risk but make that process as fast as possible you know that that is going to accelerate the amount of solar that can be installed it's going make the market more functional and that in turn is going to have a direct impact on carbon offset so you know that's where I see the highest impact. We track our ESG metrics and then specifically we publish a report to our investors about how much carbon offset we were able to incremental carbon offset we were able to generate with our technology and so what I mean by that is you know let's say we were able to remediate 2% of the solar farms that we've digitized 2% of that power production that translates to a certain amount of carbon offset we published.</i>
ScoutDI		Focus on supply chain ensures more sustainable practices	<i>Suppliers because this is a very international business where we source from I don't have the list of all the countries but it's quite a few ranging from China of course but also from Eastern Europe the US on the one thing that has kind of come up and been more and more clear course on we've been more conscious about this is that we have our responsibility for instance the working conditions for employees that work for this service</i>

suppliers and also how they corporate producing things. We are working for certification for the product so CE certification and in that certification, there are you have this I think it's called OHS which forces us to document that the components we use and ensure a certain standard when it comes to emissions and dangerous materials.

Umotif	No significant impact	<i>At the moment we don't consider that we're a small business, we're 85 people. We have done some carbon foot printing in the past and we probably will as we start moving into sort of generating profit, we will do more. We are a completely virtual organization with a small London office and hardly any travel and our carbon footprint are really low we you know. We're actually a very sustainable company so we don't measure that yet and then in terms of innovation again we're small fast moving innovative software company it's at the heart of what we do we don't measure it and we look to make sure that we're generating new stuff as quickly as we can new software and delivering that to our clients and our kind of measure is are they happy are patients using the tech and are people buying from us.</i>
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Table 17. Analyses of startup interviews on the topic "Sustainability and Innovation Impact".

Startup	Topic	Summary	Startup representative quote
Amina charging	Benefits from collaboration	Credibility in the market	<i>I think credibility in the market as least as seen as a kind of known actor and a big company and they definitely bring a lot of credibility to us as a startup when customers see Lyse as an investor on our page so that's kind of a major benefit for us having them on board.</i>
Provision		Brand recognition and brand attribution	<i>Brand recognition and brand attribution you know a lot of value by putting DNV's logo on your website or on your marketing materials when we go to conferences and everything else now we've got DNV beside us one of one example is last year in Barcelona we went and did the global food safety so GFSI is the largest governing body for food safety we went to that global conference in Barcelona and our booth and our materials was in the DNV booth so you have a company that is about 2.6 billion of annual US revenue and then little us and our brand is beside them so it makes us look way bigger than we are.</i>
Raptor maps		Knowledge exchange possibilities	<i>A good example is I participated in you their innovation Day that in Oslo and give a give a talk there and you know it's just really exciting to see a lot of a lot of the talent</i>

		<i>that they're developing and that was worthwhile for both of us both Raptor maps and DNV and so that's a concrete example of some of the other benefits.</i>
ScoutDI	Resource sharing and knowledge	<i>Resource sharing and knowledge for important topics.</i>
Umotif	Possibility of projects CVC broad reach in market opens more possibilities to grow	<i>So you know having a name of a quite a known company more known in Scandinavia than elsewhere but you know being able to talk about you know that strategic coming on board rather than just a financial investor that that's been that's been useful in some conversations and there have been some good conversations that we've had with the DNV team and a slightly broader group none have resulted in projects yet but it gives us some useful other conversations to have and I think another partner around the table you know to help the company to be a sounding board and so I think I think there are definitely some. Other benefits are the biggest ones of that strategic alignment in big projects we haven't been able to news yet, but you know potentially in the future that's whereas we're actually they'll be even more useful than they have been.</i>

Table 18. Analyses of startup interviews on the topic "Benefits from collaboration".

Startup	Topic	Summary	Startup representative quote
Amina charging	Measuring outcomes of collaboration in attaining sustainability and innovation	No identifiable measurement criteria.	<i>Well, we don't do any kind of concrete measurements on the outcome of course end of the day it's about the sales for us of course. We see this as a as a customer and we measured them by the number of charging stations they have bought from us and sold to end customers that's kind of the t ultimate number we see and then of course Lyse as an investor day they measure us on the investment and the return on investment from their perspective, but we don't do too much on kind of the investor side towards these. We don't have any concrete plans on measuring anything on the strategic side.</i>
Provision		Use of different measurement metrics but nonspecific to sustainability and innovation	<i>For now, we are measured on the number the amount of subscription revenue generated by leads from DNV and so far, they've given us a number of leads but no closed contracts in two years so right now. I would say that it's largely from a pure tangible standard I think it hasn't been successful yet. We've got partnerships with all our 35 companies globally so Canada the US Mexico and DNV in Europe through those 35 we rank and measure them on a different metrics every quarter.</i>

Raptor maps	Use of different measurement metrics but nonspecific to sustainability and innovation	<p><i>Well, it's actually easier as a startup right because you know our timelines are so short, so we have to be pretty ruthless with our prioritization so if it's not beneficial you know part of it too is having investors and partners that are understanding right like again this goes back to setting that expectation up front. There's the qualitative and the quantitative so the quantitative is if we're doing something and collaboration can also mean you know one party is a customer to the other. I think you know they have some innovative products that we might be interested in incorporating and vice versa they could just be a good customer because they have applications directly for Raptor maps. Actually, that's how a lot of these taking a step back from our store that's how a lot of these relationships come about is that you have a champion within an organization that has used the product deployed the product is excited about it sees where it's going sees the pace of innovation and might alert the venture team so that kind of can go hand in hand. For example DNV does have firsthand and second hand experience with our product because people add DNV engineers who our platform so that's kind of one way to measure it and then the other is you know when you're first discussing the partnership there are certain kind of things that you lay out and it's not an it's not a concrete road map where you have to sign up to it right things change but you do look back and you say OK I'll do the things that we set out to accomplish how many of them did. A great example is you know this what we did with green power monitor you know that was great we put out a press release we both got you know commercial benefit from that.</i></p>
ScoutDI	Use of different measurement metrics but nonspecific to sustainability and innovation Mostly financial metrics	<p><i>I think that could be improved to be because it's often it's about the financials I guess every start a company or any company will report financials to the board and to the owners so that's the bare minimum that we set kind of goals for revenue and we report on that and for sort of this of course you want to see good progress right especially when you're under the commercial phase so the main focus on kind of KPI reporting has been on sales numbers. Typically, how we start our meetings by giving feedback on that and then maybe the rest of the reporting is a bit more unsystematic where we kind of we describe progress on especially on the technology and but also on organization right how we develop the organization with new positions and HSC, but we are among we the strategy itself is more like discussion. I would say maybe that is where we could firm things up a bit by having more company goals that they are going to use both internally and when we report to the board, we have started this work, so we are now into our second quarterly. Where we are using the OKR framework. So, we</i></p>

now I will say we are very aligned in enabling the solar industry to scale at the highest quality and that will not change I don't think for certainly not for Raptor maps I doubt for DNV as well so I'm feeling very good about that. The second thing is more tactical though I mean this these are conversations that need to be had up front during the investment stage and during the term sheet stage to make sure everyone is very aligned because you want to go into this you know knowing you know they're just having kind of those assurances in both ways. If you look at where is the industry drilling, going right digitization transparency scale you know all that that is incredibly similar.

ScoutDI

Having the CVC parent company onboard as a customer
Additional reporting requirements but not significantly affect operations

Typical thing that you might um get into one when you have a corporate VC is that some companies are hoping for input to strategy funding off course but also that not this corporate VC will be a big customer buying a lot of your products unless maybe in some cases if you're able to achieve all these three things maybe it's great right but I think it in many cases it will not end up like that .You will get the funding but in many cases you will not get the feedback you want that and they will not be your client. We have the input strategy side we have the funding side but DNV is not a customer they're not using our product themselves and this is not because they don't believe in the product but it's not aligned with their business model and typically there are inspection companies doing this more technical work gathering data and that data is brought to the DNV for their assessment um but maybe that could be really for us it would be that DNV say that but it's like it's so easy to use our surveyors can start to use it instead of using all this inspection companies it can be a DNV thing and that's we believe that that could be possible but that is a challenge to change this big companies to check their work methods and I'm deployed this at scale. It has been a joy working with this companies some has been basically zero no reporting sometime because some corporate VC they will just throw you through there the month you need to comply with any quarterly or monthly reporting they would like to see but like from DNV that has been zero. Actually normally we have this quarterly reporting which is kind of an extra thing we need to do which we wouldn't have done unless they asked us so that's some extra administration but that are very comfortable levels it's we're not breaking our backs on that but I think that could be in a general speaking that could may be the challenge for some sort of companies that they don't have any systems or structures and then the corporate VC will kind of demand similar things as they do from their departments that you need to report this and that and maybe you don't have systems for that or people that can do it.

Umotif	No significant issues	<i>They were very good. They are new Venture arm. No Challenges of being quite smooth.</i>
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Table 20. Analyses of startup interviews on the topic "Challenges and conflicts".

5.2.2 Report Analysis

The Sustainability Annual reports were also analyzed to identify the role of the CVC in the company Sustainability strategy. In general, the details included in the report were similar to the content that was available on the website and did not include the direct impact of the CVC on Sustainability and Innovation. However, on the websites there is mention for all on their focus on sustainable and innovative startups.

The company strategy for all the CVC is based on the UN Sustainability Goals. For Eviny Ventures and YGV there was a mention on how they are utilized to achieve the goals. However, for DNV Ventures there was no mention of the impact on the goals.

CVC	UN sustainability goal	CVC link to UN sustainability goal
Eviny Ventures	7, 8, 11, 12, 13, 17	17
YGV	2, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17	9
DNV Ventures	Priority-3,7,13,14	No link to the CVC

Table 21. UN sustainability goals according to CVC

5.2.2.1 Eviny Sustainability and Innovation Strategy

“The corporate strategy is built around three strategic dimensions: We will take responsibility for the development towards the zero-emission society, we will put the customer at the center of our development, and we will ensure positive value development in the portfolio. industries, as quickly as possible. According to the GRI standard, Eviny's sustainability reporting has been based on a materiality analysis. The results of the analysis are used as a basis for prioritizing risks and opportunities that Eviny chooses to report on. Contribution of CVC to sustainability and in line with UN Sustainability Goals.” (Bærekraft i Eviny | Eviny.No, n.d.)

5.2.2.2 Yara Sustainability and Innovation Strategy

“We want to be a leading partner to farmers and food companies by providing sustainable solutions that help them thrive and meet their goals and commitments. We will continue to improve our fertilizer production and competitive edge – what we have – but we are increasingly aiming to expand our reach and offerings – tapping into the opportunities emerging in our business environment – how we can contribute.” (Sustainability Report 2022 | Yara International, n.d.)

5.2.2.3 DNV Sustainability and Innovation Strategy

“Our sustainability strategy is twofold. Firstly, we want to become the most sustainable organization we can be and have set ambitious targets to deliver on this, especially relating to climate change. Secondly, we aim to maximize how we help our customers and partners achieve their sustainability goals. This is the area where we can have the biggest impact; using our expertise to deliver products and services that make a difference to our customers’ safety and sustainability performance.” (DNV Annual Report 2022 - DNV, n.d.)

CVC	Website Information
DNV Ventures	<p>We are investing to support our purpose of safeguarding life, property and the environment.</p> <p>We aim to shape the next generation of data science applications and digitalized services.</p> <p>We strive to balance DNV's internal innovation effort by strengthening our core business areas and by exploring new areas aligned to our business and R&D efforts.</p> <p>We invest responsibly, in alignment with ethical and sustainable investment guidelines, into startups aiming to tackle challenges rising from global transformations.</p>
YGV	<p>Our core thesis is that we believe in "no compromise farming." By that we mean that we don't believe that the majority of farmers, advisors, or agriculture companies are going to be willing to compromise on yield, quality, profitability, and time effort in order to meet sustainability demands. As such, we are looking for companies which have a high impact with low effort required and price parity (or better) with current practices in order to get sustainability to massive adoption. With this in mind, we invest in the following verticals, themes, and business models.</p>
Eviny Ventures	<p>Eviny Ventures is an active early-stage investor in companies with great potential that help accelerate the energy transformation.</p> <p>We are hands-on with founders, from seed to venture to growth. As you drive your business forward, we’ll help you prepare for the biggest possible outcomes by leveraging our solid expertise and network from 100+ years in the renewable energy industry.</p>

Table 22. CVC impact on sustainability. (DNV Ventures - DNV, n.d.; Eviny Ventures, n.d.; Yara Growth Ventures, n.d.)

6. DISCUSSION

6.1 Norwegian CVC through ambidexterity framework

The SOI and Ambidexterity framework aided us in being able to critically analyze collaboration with startups in sustainability and Innovation.

From Chesbroughs framework DNV Ventures and Eviny Ventures are focused on enabling investments that drive their current strategic interest. Although the parent company is focused on the leading transformation within their selected industries this may lock them up in not being able to access disruptive technologies which can transform the industry. YGV is purely focused on having a financial investment with minimal strategic interest. However, unlike Passive investment they ensure a fit with the industry as per their hypothesis.

All the CVC display an autonomy from the parent company and hence a form of ambidextrous organization. They also mention ensuring the startups are autonomous from the CVC and this is echoed by the startup who mention that this is one of the important building blocks of why they collaborate with the CVCs. There is very minimal to no interference with the startup and the CVC plays more of a supportive role in providing resources and guidance where required. To build this mutual trust some CVC like DNV Ventures have even the NDAs where required. Due diligence and initial relationships with the startups also ensure that the collaboration establishes a more trusting collaborative set up.

All the CVC have complementary objectives and a strong emphasis on ensuring that the startup fits into the parent company core. Unlike Burgelman & Valkangas (2005), Chesbrough (2000), Gompers & Lerner (1998) they are not overly experimental and focused on remaining near to the core and investing in activities which can be integrated within the operations. They are all focused on exploration with minimal focus on exploitation even though from example they mention being transformational meaning there is focus on exploration and this is the very essence of the engagement with the startups. A fine balance between exploration and exploitation is the building block of the ambidextrous organization, and this is seen at the collaboration. Although there is minimal evidence of exploration the strategy is more focused on the transformation of the industry, and this could be a foundational base.

All the CVC had a strategy which is linked to the parent company and a type of synergistic objective with the CVC strategy derived from the parent company. This also trickles down to the startups being the right fit with the CVC as the strategies align and this also makes the

collaboration much smoother. One of the startups, however, identifies the need to continuously monitor the strategy as a change in management can also mean a change in the strategy. This may either create conflict or lead to early exits. However, another startup saw the change in a positive light as an opportunity and had constant communication and check ins to ensure that re-alignment can occur.

In summary the strategic fit within both the CVC and the startup seems to be the driving force in ambidexterity as this ensures that the collaboration is aligned. The CVC is very keen on ensuring the fit is detrimental and although sometimes identified as a challenge it is seen as necessary. A point to consider however is to be more explorative. There will be a need to further diversify their portfolio into different types of startups which may which is still in line with their core.

6.2 Norwegian CVC through SOI Framework

With regards to the SOI framework this aided in analyzing the Sustainability and Innovation claims in the strategy of the CVC. From the company websites these were some of the focuses when sourcing the startup for the CVC.

All the CVC display as being in the system building cycle of SOI by using the CVC as an enabler of doing new things with others. Sustainability and Innovation seems to be in their core of the parent company, and this also determines the type of startup that they invest in. In general, all the startups interviewed also demonstrated to be sustainable and innovative. However, the measurement was not required or done. CVCs relied on the Sustainability Metrics from the parent company or are not focussed on all in the measurement. From the company's sustainability report the CVCs have been briefly mentioned however their impact on sustainability is not mentioned. The parent companies however have a strong focus on Sustainability, and this can be derived to have a positive effect on the decision of the CVC as their strategy is mainly focussed on the parent company. An additional motivating factor could be the CSRD requirement for all the corporates. The CVC interviewed are still very young and have a long way to go in demonstrating value and measuring their impact on the parent company. The startups mentioned that the financial support is detrimental in making them accelerate their process of innovation. However, with the slow process of working these collaborations may be affected in terms of further incorporating the technologies to the parent company and hence slowing down the acceleration to the parent company.

6.2.1 Strategy

Being a systems builder entails eschewing the dominant economic paradigm in order to redefine the firm's role in society as one that is both a part of and distinct from it. Effectiveness is achieved, moving beyond efficiency (McDonough & Braungart, 2002). To have a positive influence, the approach supports a logic of extensive collaborations and investing in systems solutions to derive new, shared value propositions from the full sociotechnical and ecosystem network. Business is uniquely positioned to lead on this, more so than government or civil society, because the ultimate goals of sustainability lie outside the reach of individual firms to achieve (Hart, 2010). As a result, the role of Systems Builders shifts to one of initiating, mobilizing, inspiring, and guiding change.

The CVC demonstrate having shared strategic interests and building trust as an important factor. They invest in companies which fit into their mandate so that they can have a more positive influence. They provide the startups with required resources, and this is also echoed by the startups as one of the motivating factors is the support offered while still maintaining their autonomy. The CVC plays more of a coaching and mentoring role. However, since all the CVC invest in different stages of the startup lifecycle their role tends to change in the type of assistance or role they play. A shared strategic fit and enhancing of value proposition is seen as important and this also culminates to projects for some of the CVC.

6.2.2 Process

Diverse collaborations can help collectively define the problem and look for solutions in situations where the sustainability challenges are so large that there is no single "owner" of the problem and there is a need to implement transformations in line with the demands of a more environmentally sustainable development (Mirata & Emtairah, 2005). The idea of ambidexterity (Turner et al., 2012) is a useful framework for understanding how successful firms fully experimented with and learned from multiple new approaches to sustainability in a "shadow track" study by Loorbach et al., (2010) of inter-firm relations among Dutch industrial collaborators.

The diverse portfolio in the CVC demonstrates there is different stakeholders involved in solving the sustainability and innovation challenge. Having organisation that balances exploration and exploitation is also at the foundation of how the CVC operate. Although there are informal processes in place on getting access to resources and shareholders within the parent

company which further slows down the process, there was a positive outlook from the startups that they feel the CVC tries to do their best to connect them to the right people. Some CVC have mentioned the importance of having a formal structure in place which will ease the collaboration and ensure a more efficiency in the process meaning this has been identified as an issue which they are willing to tackle. Another important factor is lack of metrics for measuring strategy and SOI. Although the CVC mentioned this may be due to low impact that they have on the parent company they are still interested in having additional metrics apart from financial to truly measure their portfolio value.

6.2.3 Learning

Through these innovative partnerships, shared value is being promoted, in which the causes of eco- and social systems are advocated as equivalents to economic rewards (Porter & Kramer, 2011). However, if companies lack the internal knowledge management procedures to turn these chances into innovation, they may not materialize (Ayuso et al., 2011).

All the CVC identified Learning as an important benefit and strategic interest for the collaboration. As the startups are more agile, they can create knowledge which the CVC are interested in. The startups also learn from the CVC on important topics although some identified there was not so much learning from the CVC. There is however no clear process mentioned by all the CVC on how this knowledge is diffused through to the parent company. The absorptive capacity of the company also comes into question as even though they are willing to learn this has not been identified. It is also important that the portfolio fits into the parent company Business units or sectors that they are serving. This ensures that the knowledge that they are getting is in line with what the company needs.

An important consideration would be to determine to what level the knowledge is similar or different to maximise the learning opportunity. The CVC can also be a sort of a hub to diffuse the knowledge to other startups which is mentioned by one DNV Venture's startup receiving some important training from the CVC which they would usually not have access to due to limited resources. This also ensured that the startup was also updated on the latest Sustainability trends and ensure that they are not involved in cases where there may be a conflict in their actions which may affect the CVC. However, since they are not required to report on sustainability issues this could pose to be an issue in future therefore the CVC should consider this more in detail.

6.2.4 Linkages

According to Del R'o et al. (2010), systems building places businesses in an industrial ecology characterized by mutually reinforcing interactions between numerous stakeholders embedded in networks, communities, and collaborative partnerships. To address sustainability concerns, industrial ecology advocates for a drastic transition from businesses operating independently and in rivalry to integrated cooperation and new frameworks for teamwork. (Rondinelli & Berry, 1998).

All CVC are characterised by a diverse portfolio of startups. In order to enable their networks, they collaborate with startups even beyond their physical location. By having Business units and board member to aid and oversee the collaboration this creates a link between the CVC and the startup and ensures a continuous communication and collaboration. The portfolio also serves an impact within the supply chain of the company ensuring that this trickles down to all the levels of the parent company operation which further legitimises their Sustainability claim.

6.2.5 Innovative Organization

The concept of business's place in society has been reframed in various ways, and the scholarly and grey literature bring innovative vocabulary around this. For instance, Chang (2010) proposes avoiding metaphors of conflict and competition, which might (inappropriately) influence executives' decision-making, and instead to metaphors that depict enterprises as being a part of a cooperative community based on relationships.

The CVC is used as a vehicle to source for innovative startups which can be used in the parent company to accelerate their innovation and sustainability. As a result of their focus on sustainability and innovation transformation the parent company Business model has shifted to include this at the core of its business. CVC is then used to further accelerate this model.

7. CONCLUSION

The above study raises the question of what the value of CVC is for the firm.

In terms of industry, most corporations invest in startups that are in the same or a comparable area. YGV, DNB Ventures, Bring Ventures, and Eviny Ventures, for example. This is because, as stated on their website, the company's purpose is to either construct its own services or explore further into this area to unearth novel opportunities. Also, some CVC's aim is to invest in sustainable startups. And despite the fact that startups aimed at digitalization occupy a large share in the analysis above, we can conclude that CVC meets this requirement.

Based on Ambidexterity, it can be argued that if a firm invests in an area that is not their own, such as Lyse Vekst, which invests in business software as well as startups in the energy sector, they want to expand their own functionality and research a new market for themselves. Which can also be thought of as providing collaborative duties.

Based on the case study and our research question most of the CVC seem to follow similar process of collaboration with a dead flow process of selection till exit albeit with different variation of models. Strategic fit seems to be of utmost importance for both the CVC and the startups with the CVC however although strategic objectives are aligned, they are not measured to ensure that the outcomes are met to ensure that greater value and performance impact of sustainability and innovation are captured.

All the CVC have a Sustainability and Innovation focus when engaging in startups however this is not also measured or captured in detail by the head company as captured in the reports. There however seems to be a view of the minimal impact of the CVC and mostly used as a financial investment initiative. However, the head companies seem to be committed to pursuing the goal of Sustainability and Innovation and therefore should consider leveraging the CVC more to attain their corporate and CVC strategy.

8. RECOMMENDATIONS AND CONTRIBUTIONS

The following contributions can be identified as a result of our master thesis.

- We provide a database of Norwegian CVC. This allowed for a comprehensive examination of the situation.
- We examined real cases from both sides - the CVC side and the startup side. As a result, we uncovered gaps between the current scientific research on CVC and how collaboration occurs in practice.
- To assess CVC, we created an analytical framework based on SOI and ambidexterity.

However, to undertake additional study, the next limitations of this work must be considered:

- We were unable to reach all CVC representatives in Norway. As a result, our study is confined to three CVCs and a few startups from their portfolio.
- There are no similar case studies in Norway, hence no comparison analysis of CVC at various periods or with other firms is conceivable.

And last, in conclusion, we would like to recommend the following ways in which CVC operations in Norway may be more productive:

- It is vital to provide a credible foundation for monitoring the strategic objectives, sustainability, and innovative outcomes of CVC initiatives. This will aid in evaluating the return and value of the investments made.
- It is critical to have a well-defined and transparent approach to interacting with startups, including criteria for successful knowledge exchange and partnership management. This strategy to deal with startups will maximize the benefits for both sides.

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10. APPENDICIES

Appendix 1- UN Sustainability Goals



Appendix 2 - Case Studies Background

Startup representative overview

Amina - Founded in 2021 and partnership started via SpareBanken in Stavanger who initially introduced them to Lyse Vekst. They also have other investors including Nyso and Eviny. Commercial discussions with Lyse Energy about selling electricity and products to end customers although this was a separate discussion under the assistance of Lyse Vekst to introduce the right people.

Provision - has been in business for 5 years and developed software to digitize food safety quality compliance, regulation and all types of paperwork and process in the food chain that was initially done manually therefore simplifying the process. Representative submitted a proposal entry to a contest in Copenhagen so the world's largest shipping company where they move 40% of the world's food by volume and they were looking for any entrepreneurs that had unique ideas on reducing food loss. Applied to that very long-winded position on why we think that blockchain is not the best option and ended up getting their attention becoming 10 winners out of 450 applicants and moved to Copenhagen for two months to learn and start the company. Introduction to DNV started when former global head of food safety and quality for Coca-Cola via LinkedIn who was consulting for DNV and working with the CEO and DNV. It took six or seven months and then DNV ended up investing alongside some of our other investors when we closed 4.75 million US in November 2021.

Raptor Maps - building the system of record for large scale solar so that's you know utility scale and commercial and industrial we work with a wide variety of stakeholders that's everyone from asset owners' operations and maintenance companies' construction companies and very importantly independent engineering groups including DNV. Introduction to DNV was through a mutual network of clients with mutual interest who enabled the collaboration. This was also made possible by aligned focus with DNV on climate tech which was through head of solar and eventually venture capital DNV Ventures.

ScoutDI - idea for the company is to make industrial inspection safer for humans. After observing the dangers of these activities, a solution to apply automation and digitalization was used. The solution also had to consider the larger amount of data collection required in the process. In addition, navigation in the required areas had no GPS reception and purely illuminated areas was also another problem solved with their solution. ScoutDI drones are twofold providing hardware for the drone which can be flown inside the confined spaces and

software with subscription for the Scout Portal for data collection and review. As DNV has a long history in maritime this piqued their interest.

Umotif - a company was founded in 2012 in the UK and initially focused on helping patients capture and track data for their own health and well-being. The first 6 years focused on Angle funding and eventually pivoted to pharmaceutical research which has a large budget and has real need for the technology. Initially took venture capital investment from a fund in the UK called Albion and that helped them start moving into the pharma area. A few years later did another round where they met DNV at a conference and had the conversation and in 2020 with DNV. The reason was motivated by the fact that DNV was looking to move into healthcare and research and had the right approach and global reach. There was also a good connection with the DNV Ventures representative.

CVC Overview

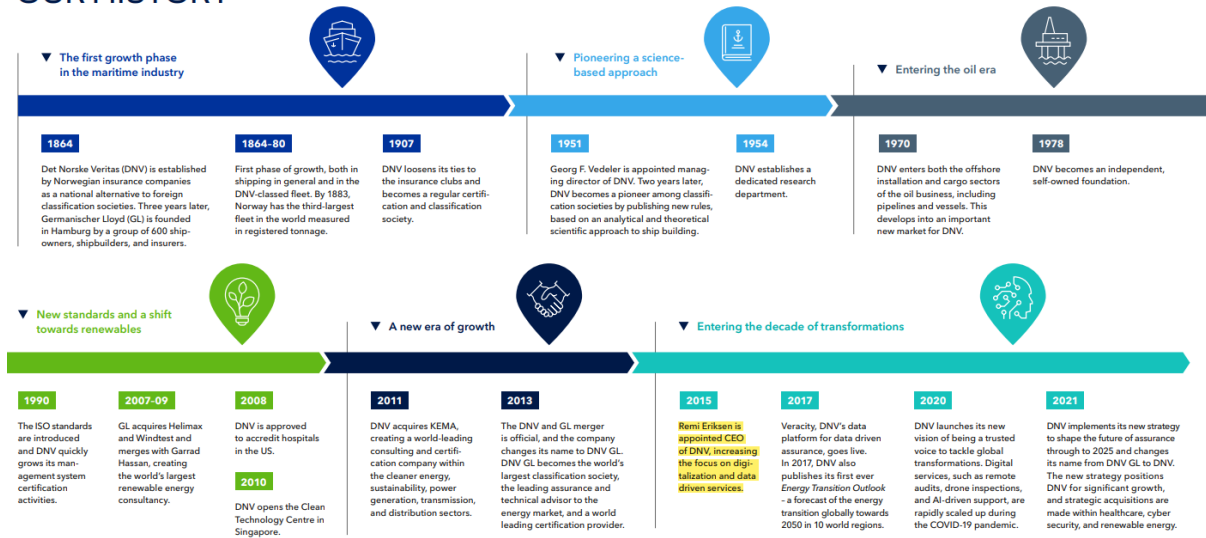
DNV Ventures

The goal of DNV Group AS was to ensure "reliable and uniform classification and taxation of Norwegian ships" when it was founded in 1864 by marine insurance groups. Det Norske Veritas Holding AS ("DNV Holding") currently owns it in full. Stiftelsen Det Norske Veritas is the sole shareholder of DNV Holding, a private limited company with its headquarters in Norway. By 2022, the equity ratio had increased steadily to 56.7%.

DNV is motivated by a purpose to protect life, property, and the environment in its capacity as an independent expert in assurance and risk management. The company has been further inspired by this to pursue sustainable innovation as its main driver to address global transformation in addition to expanding its business segments.

The role of leadership in driving innovation and technology began with Georg Vedeler was appointed DNV's managing director in 1951 who introduced a scientific approach to ship construction. In 2015 fleet was still predominantly Norwegian, but internationalization was taking off. Remi Eriksen is appointed CEO of DNV, increasing the focus on digitalization and data driven services.

OUR HISTORY

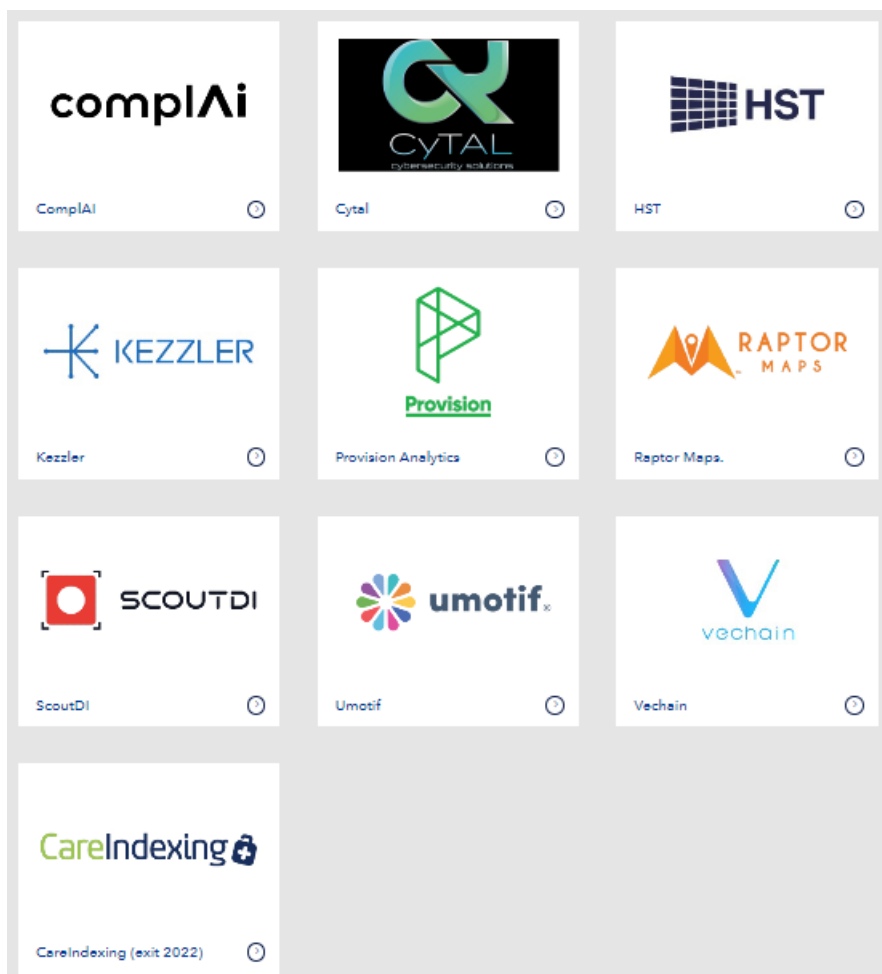


Alliances, mergers, and acquisitions became a strong strategic driver in the late 2000s. The acquisitions of Advantica (UK) in 2008 and Trident (Malaysia) in 2009 broadened GL's service scope to consultancy services in the oil and gas sectors. The merger with Noble Denton in 2009 further expanded its activities in offshore technical services. This was supported by the acquisitions of PVI (Canada) in 2007, MCS (US) in 2008 and IRS (Singapore) in 2009, which advanced the inspection business.

In 1954 they established a dedicated research department and currently invest 5% of our revenue every year in research and development. This has led to an innovation focus which led to the acceleration of Digital Focus in 2015 and the formation of Veracity data platform. In 2020 DNV launches its new vision of being a trusted voice to tackle global transformations. Digital services, such as remote audits, drone inspections, and AI-driven support, are rapidly scaled up during the COVID-19 pandemic.

Due to the focus on digitalisation this in turn led to searching externally for innovations leading to the formation of DNV Ventures in 2020 in response to the energy transition and digital transformation. In 2021 DNV implements its new strategy to shape the future of assurance through to 2025 and changes its name from DNV GL to DNV. The new strategy positions DNV for significant growth, and strategic acquisitions are made within healthcare, cyber security, and renewable energy.

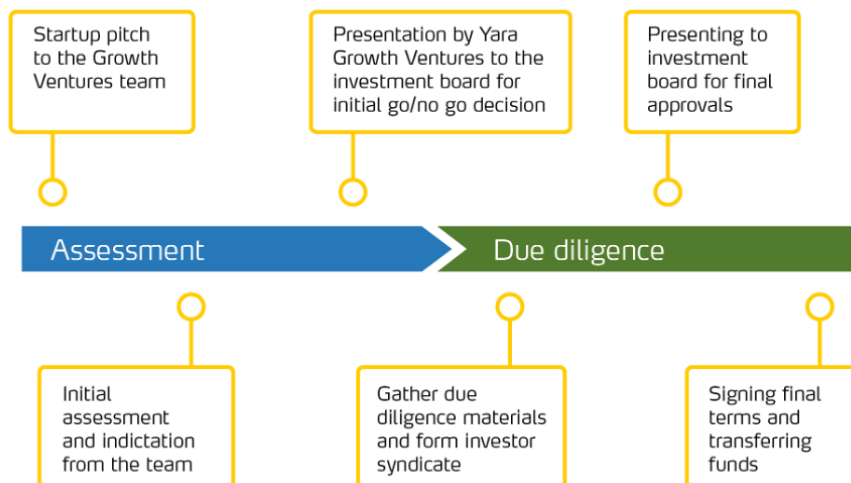
The DNV portfolio reflects the new strategy.



Yara Growth Ventures

YGV, the corporate venture arm of Yara, is at the forefront of fostering sustainable innovation in the agricultural industry. It serves as Yara's strategic investment arm, dedicated to identifying and investing in startups and growth-stage companies that offer innovative solutions aligned with Yara's vision of sustainable agriculture. By leveraging its industry expertise, global network, and financial resources, YGV aims to accelerate the development and adoption of technologies and business models that can transform the agricultural sector.

The process of investment



YGV Porfolio



Digital Farming and Precision Agriculture: YGV actively seeks investments in startups that leverage digital technologies, data analytics, and artificial intelligence to optimize farm management practices. These innovations enable farmers to make data-driven decisions, enhance crop yields, minimize resource inputs, and reduce environmental impacts. By supporting startups in this field, YGV is driving the digital transformation of agriculture, fostering resource-efficient and sustainable farming practices.

Climate-Smart Solutions: YGV recognizes the urgent need to address climate change and its impact on agriculture. The venture arm invests in startups that develop climate-smart solutions, such as advanced nutrient management techniques, precision fertilization technologies, and greenhouse gas reduction strategies. These innovations help farmers mitigate greenhouse gas emissions, adapt to changing climatic conditions, and build resilience in the face of climate-related challenges.

Sustainable Crop Nutrition: YGV focuses on startups that offer sustainable alternatives for crop nutrition. This includes investments in companies developing bio-based fertilizers, organic soil amendments, and innovative nutrient delivery systems. By supporting these startups, YGV aims to reduce the environmental footprint of crop production while ensuring optimal plant nutrition and soil health.

The initiatives driven by YGV align with the United Nations Sustainable Development Goals (SDGs), particularly Goal 2 (Zero Hunger) and Goal 12 (Responsible Consumption and Production). By investing in sustainable agriculture startups, YGV is contributing to increased food production, improved resource efficiency, and reduced environmental impact. This supports Yara's broader commitment to sustainable agriculture and responsible business practices.

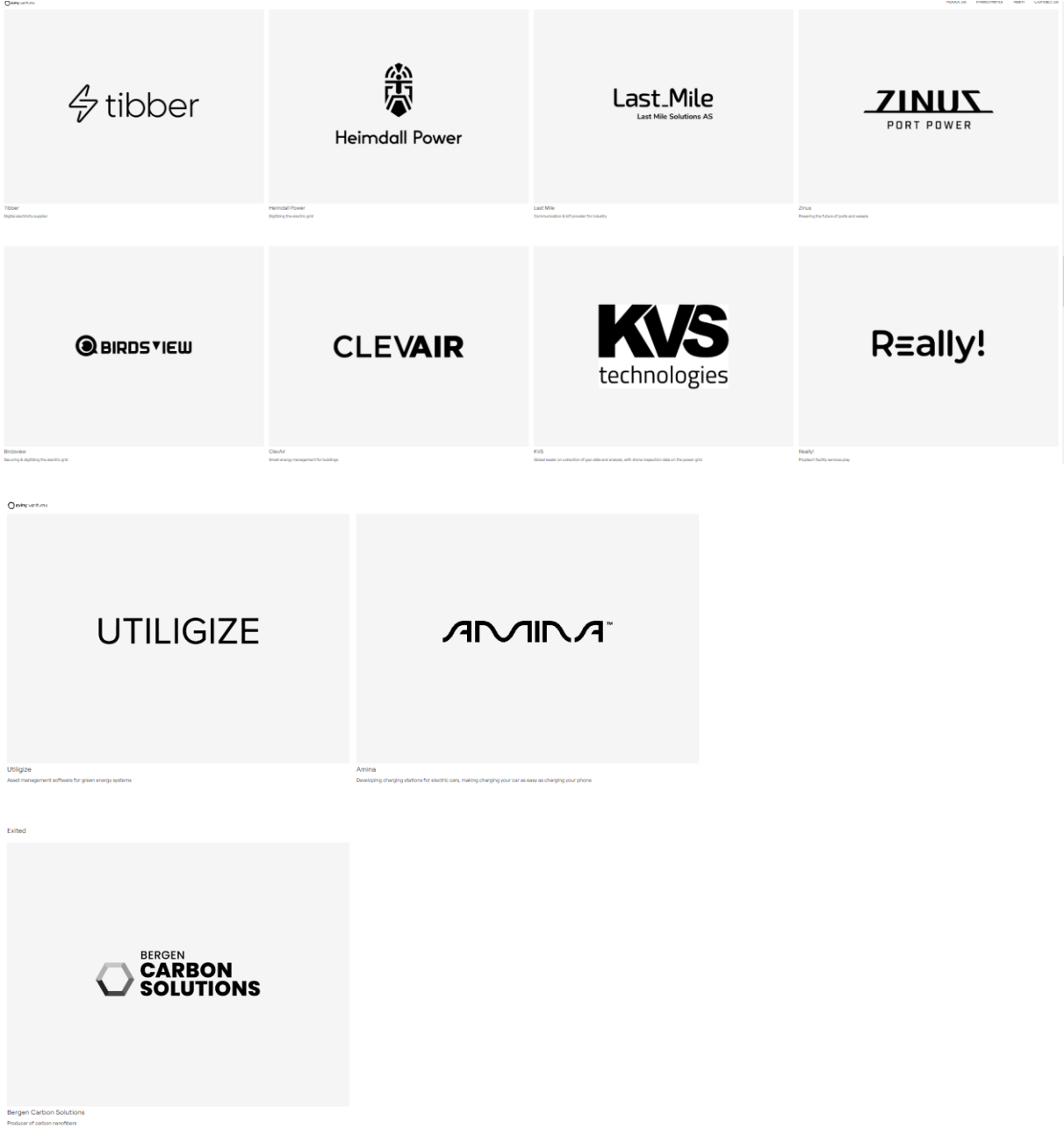
YGV plays a vital role in driving sustainable innovation and transforming the agricultural sector. By investing in startups that offer innovative solutions for digital farming, climate-smart practices, and sustainable crop nutrition, YGV is accelerating the transition to a more sustainable and resilient agriculture industry. Through collaboration, knowledge sharing, and strategic investments, YGV is making a significant positive impact in fostering sustainable agriculture practices, ensuring food security, and contributing to a greener future.

Eviny Ventures

Norway has emerged as a global leader in sustainable transportation, and Eviny Ventures is at the forefront of this green revolution. This innovative venture capital firm is driving the adoption of electric vehicles (EVs) and clean energy solutions, aiming to reshape the future of transportation in Norway and beyond. Through strategic investments and partnerships, Eviny Ventures is not only supporting the growth of the electric mobility sector but also actively contributing to Norway's ambitious climate goals.

Eviny Ventures recognizes the urgent need to transition from traditional fossil fuel-powered vehicles to electric alternatives. The firm strategically invests in companies that are developing cutting-edge electric vehicle technologies, charging infrastructure, and related solutions. By providing financial support, mentorship, and industry expertise, Eviny Ventures helps these companies accelerate their growth and bring their innovations to market.

To further catalyze the electric mobility ecosystem, Eviny Ventures actively seeks partnerships with industry leaders, municipalities, and organizations in Norway. By collaborating with government entities, EV manufacturers, charging network providers, and energy companies, Eviny Ventures fosters an integrated approach to electric transportation. This collaborative effort helps create synergies and drive the widespread adoption of EVs across the country. Below is their portfolio



One of the critical challenges in EV adoption is the availability of a robust charging infrastructure. Eviny Ventures invests in companies that focus on building and expanding charging networks throughout Norway. By ensuring convenient access to charging stations,

they aim to alleviate range anxiety and encourage more people to embrace electric vehicles. This commitment to infrastructure development complements the Norwegian government's initiatives to increase the number of charging stations across the country.

Beyond EVs, Eviny Ventures recognizes the importance of clean energy solutions in achieving sustainable transportation. The firm supports investments in renewable energy generation, energy storage technologies, and smart grid solutions. By integrating clean energy sources and optimizing energy management, Eviny Ventures aims to create a holistic ecosystem that minimizes the carbon footprint of electric mobility.

Norway's success in electric mobility can be attributed to various factors, including supportive government policies, financial incentives, and a high level of public awareness. Eviny Ventures aligns its investments with Norway's vision of a sustainable future by actively participating in the country's clean transportation revolution. By capitalizing on Norway's conducive environment for electric mobility, Eviny Ventures contributes to the country's goal of phasing out fossil fuel vehicles and achieving carbon neutrality.

Eviny Ventures is playing a pivotal role in accelerating the transition to electric mobility in Norway. By investing in cutting-edge technologies, supporting infrastructure development, and fostering partnerships, the venture capital firm is driving innovation and creating a sustainable transportation ecosystem. As Norway continues to lead the way in electric vehicle adoption, Eviny Ventures stands as a key player, actively shaping the future of transportation towards a greener and cleaner tomorrow.

Appendix 3 – CVC and startups interview questions

CVC's questions

1. Can you say a bit about your role and an overview of the CVC?
2. How have you come up with the idea to work with startups? What was the problem?
3. Is the collaboration only on investment or also focus on company strategy especially sustainability? What are your strategic objectives?
4. How does startup fit into the corporate strategy?
5. Do you only invest or collaborate in projects and is there a process? Is it managed by the Venture or specific department/team in [Name of head company].
6. How is the process of collaborating with startups coordinated in the company?
7. How do you select startups to work with? Is sustainability and innovation a key theme in the challenges you consider?
8. Which teams in [Name of head company] do you collaborate with for investing in startups? What kind of support do you get from them?
9. What benefits do you get? Do these collaborations make [Name of head company] more sustainable?
10. Do you face any challenges during collaborations right now? How do you solve them?
11. How do you measure the outcome of a collaboration?
12. Which metrics do you use to measure sustainability and innovation goals/objectives?
13. Do you ask startups to make any changes in the working process or organizational structure?
14. What type of information do you require startups to report to you?
15. Do you provide any additional services in addition to financial support to the startups?
16. Did some collaborations fail? What was the reason?

Startups questions

1. Provide a brief overview of Startup background and collaboration with [Name of CVC] - when, what is the objective or motivation?
2. What are your objectives for collaboration - strategic or financial? What are your strategic objectives?

3. How do you ensure that your start up works autonomously while aligned with [Name of CVC] as a strategic goal? Were the goals similar or did you have to change them? Do you follow [Name of CVC] process for innovation or is it independent?
4. What are the changes that have happened in the business as a result of collaboration, for example organizational structure, process change, methods of reporting or changes to organizational processes?
5. Are you working with [Name of CVC] on any project? What is the process you follow in working with projects?
6. How has the collaboration with [Name of CVC] enabled you to accelerate your sustainability and innovation?
7. Are there specific requirements on sustainability and innovation that you should follow?
8. Do you get any other benefits from [Name of CVC] apart from funding for example reputation, knowledge?
9. How do you ensure mutual benefits?
10. How do you measure the outcome of a collaboration?
11. Which metrics do you use to measure sustainability and innovation goals/objectives? Are they like [Name of CVC] or different?
12. What are some of the challenges faced in collaborations?
13. How do you deal with conflict of interest?

Appendix 4 – Database of Norwegian CVC

Head company	HC description	CVC	CVC description	CVC Focus	Startup	ST area	ST country	ST description	ST type	ST year	Number of employees	Seed round funding	Additional direction 1 lvl.	Additional direction 2 lvl.	Additional direction 3
Posten	Postal services 1647 Posten delivers parcels and letters to private individuals throughout Norway.	Bring Ventures	2021 Bring Ventures is the Corporate Venture arm of the Norway Post Group investing in sustainability and digitization.	<ul style="list-style-type: none"> invest in disruptive and ambitious seed and early phase companies within sustainability and digitalization. Promoting and exploring new solutions that can contribute to Norway Post group, but also to the logistics industry's change towards a more sustainable future. 	Wanda	Norway	Norway	A circular logistics & tech company providing easy access to space and logistics enabling the circular economy	Logistics	2020	11-50 p.	Seed	Sustainability		
		Bring Ventures		<ul style="list-style-type: none"> We are looking for companies trying to change current rules and positions to enable a future position in a landscape where digital is first. 	Two.	Norway	Norway	Making it easy for businesses to buy	Financial Services	2020	51-100 p.	Series A	Digitalization		
		Bring Ventures		<ul style="list-style-type: none"> Though case dependent, this often involves a capital investment, but it can also mean access to our ecosystem, active board work, conducting pilots together with parts of our organization, or entering a commercial partnership. 	Crossborderit	Scandinavia	Sweden	Crossborderit makes global shopping easy. They offer a great customer experience for global cross border shopping.	E-Commerce	2019	11-50 p.	Seed	Digitalization		
		Bring Ventures			Elonroad	Scandinavia	Sweden	The Electric Road	Electrical Equipment	2014	1-10 p.	Series A	Sustainability	Digitalization	
		Bring Ventures			Kavall	Scandinavia	Sweden	Kavall is a grocery	E-Commerce	2021	11-50 p.	Seed	Digitalization		
		Bring Ventures			TempOnline	Scandinavia	Sweden	TempOnline's	Electrical Equipment	2014	11-50 p.	Seed	Sustainability		
		Bring Ventures			Addimotion	Scandinavia	Sweden	Enabling a personalized post-purchase experience. Monitor all shipments in one view.	Logistics	2009	11-50 p.	Seed	Digitalization		
		Bring Ventures			Onbuy	UK+Europe	UK	OnBuy is an online marketplace that offers multi-category products.	E-Commerce	2016	101-250 p.	Series A	Digitalization		
		Bring Ventures			Tise	Norway	Norway	Tise believe that second hand trade is an important key to make the world more sustainable. the company help people reuse by making second hand more fun and inspiring.	E-Commerce	2014	1-10 p.	Series Unknown	Sustainability	Digitalization	
		Bring Ventures			Aviant	Norway	Norway	Aviant delivers full-stack drone services that enables autonomous and on-demand transport of cargo.	Logistics	2020	11-50 p.	Seed	Sustainability	Digitalization	
		Bring Ventures			Sharefox	Norway	Norway	Sharefox aims to be a global leader in digital infrastructure for a superior rental experience. The company digitalize existing rental operations and enable new rental-based services through a SaaS platform.	Property Management	2017	1-10 p.	Seed	Digitalization		
		Bring Ventures			Dintero	Norway	Norway	Dintero is a SaaS company that offers a complete, digital payment solution with a simplified payment process for B2B.	E-Commerce	2017	1-10 p.	Seed	Digitalization		
		Bring Ventures			Easycorn	Scandinavia	Sweden	Easycorn is a SaaS company that offers a flexible and digital return solution through a white-label solution.	Logistics	2016	1-10 p.	Series Unknown	Sustainability	Digitalization	

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DNB	Banking 1822 DNB is a financial services group that offers financial services through mobile, online banking, bank offices, and international offices.	DNB Venture	2017 We invest in promising start-up companies that have a proven business model and paying customers. DNB Ventures contributes to increased innovation power in DNB through relevant learning about new products, services and customer experiences.	<ul style="list-style-type: none"> The Nordic region Companies connected to the financial sector "Seed" phase 	Kvist	Norway	Norway	Innovative project management tool for environmental certification and environmental management in the construction industry.	Business Software	2020	11-50 p.	-	Digitalization		
		DNB Venture			Celsia	Norway	Norway	The simplest way to your EU Taxonomy score. Assess your operations and get & improve your score.	Financial Services	2021	11-50 p.	Pre-seed	Digitalization		
		DNB Venture			Quantfolio	Norway	Norway	Quantfolio has developed a machine learning software for selecting the best savings products.	Financial Services	2015	1-10 p.	Undisclosed	Digitalization		
		DNB Venture			FundingPartner	Norway	Norway	FundingPartner is a lender that connects businesses that want loans, and individuals who want to lend money at a good rate.	Financial Services	2016	11-50 p.	-	Digitalization		
		DNB Venture			Unite Living	Norway	Norway	Unite Living is providing an automated platform for pairing residential real estate owner/lessors.	Property Management	2016	1-10 p.	Series Unknown	Digitalization		
		DNB Venture			Aiia	Scandinavia	Denmark	Aiia is a European open banking technology provider offering a direct connection to banks through a single API.	Financial Services	2011	51-100 p.	Series Unknown	Digitalization		
		DNB Venture			Luca Labs	Norway	Norway	Innovative accounting solution for small businesses and sole proprietorships.	Business Software	2016	1-10 p.	-	Digitalization		
		DNB Venture			Nord Insuretech Group	Scandinavia	Sweden	Nord Insuretech Group is a digital platform software company.	Business Software	2018		-	Digitalization		

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Eviny	Energy supply 1998 We use the energy we get from hydropower and other renewable sources to build out and operate tomorrow's infrastructure in fiber, electricity and district heating networks, digital communication, solar and wind power plants, lightning chargers for electric cars, trucks and excavators, and one of the world's first network for rapid charging of electric boats.	Eviny Ventures	2017 Eviny Ventures is an active early stage investor in companies with great potential that help accelerate the energy transformation.	• Early stage companies • With great potential that help accelerate the energy transformation	Tibber	Norway	Norway	Tibber is a digital electricity supplier that offers smart solutions to minimize their customers' consumption and costs.	Energy Management	2016	101-250 p.	Series C	Sustainability	Digitalization	
		Eviny Ventures			Heimdall Power	Norway	Norway	Heimdall Power is a company that streamlines the use of electricity in a growing market for the Internet of Things.	Energy Management	2015	11-50 p.	Series Unknown	Sustainability	Digitalization	
		Eviny Ventures			Last Mile	Norway	Norway	Last Mile helps the public and private sectors work smarter through the use of IoT solutions.	Business Software	1998	11-50 p.	-	Sustainability	Digitalization	IOT
		Eviny Ventures			Zinus	Norway	Norway	Zinus is a supplier of shore power products and autonomous solutions for ports and vessels. Zinus has fundamentally redefined shore power technology, benefiting the environment and customers everywhere through innovative design and performance.	Energy Management	2019	11-50 p.	-			
		Eviny Ventures			Birdsview	Norway	Norway	Birdsview is a software development company that provides solutions to assess the condition of the power grid industry.	Energy Management	2017	11-50 p.	-	Sustainability		
		Eviny Ventures			ClevAir	Norway	Norway	ClevAir quality assures indoor air quality while not	Energy Management	2016	11-50 p.	Seed	Digitalization		
		Eviny Ventures			KVS Technologies	Norway	Norway	Digitizing our most critical infrastructure with autonomous drones and predictive AI	Business Software	2015	251-500 p.	Seed	Sustainability		
		Eviny Ventures			Really!	Norway	Norway	Really! is a digital platform that simplifies the purchase and management of real estate services.	Property Management	2020	11-50 p.	-	Digitalization		
		Eviny Ventures			Utiligize	Scandinavia	Denmark	Asset management software for green energy systems	Energy Management	2018	1-10 p.	-	Digitalization		
		Eviny Ventures			Amina Charging	Norway	Norway	Amina Charging develops high-quality and easy-to-use chargers for the mass market.	Electrical Equipment	2021	11-50 p.	Series Unknown	Sustainability	Digitalization	
													Sustainability	Digitalization	

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Nordea	Banking 1995 Nordea provides a wide range of banking and insurance services.	Nordea Start up and growth	We give you access to both local and Nordic ecosystems for start-up companies and guide you through our large base of partners and customers in the Nordics. The advice you get from us is adapted to your industry and your situation.	<ul style="list-style-type: none"> • Latest annual accounts and results so far this year • A liquidity forecast for 2-5 years 	Svenn	Norway	Norway	Svenn offers project management software for the construction industry.	Business Software	2013	11-50 p.	Series Unknown	Digitalization		
		Nordea Start up and growth			Vev	Norway	Norway	The all-in-one design platform for professionals to create and launch unique web experiences with complete creative and technical freedom.	Business Software	2017	11-50 p.	Seed	Digitalization		
		Nordea Start up and growth			Cemit	Norway	Norway	CEMIT is a technology company that provides services to build, operate, and maintain railways.	Logistics CleanTech	2018	51-100 p.	-	Sustainability	AI	
					WasteIQ	Norway	Norway	Waste IQ is a developer of a waste technology tracking platform.		2017	1-10 p.	Series Unknown	Digitalization		
		Nordea Start up and growth			Fjong	Norway	Norway	FJONG is a digital closet that provides limitless access to fashion in an affordable and sustainable way.	E-Commerce	2017	11-50 p.	Angel	Sustainability	Digitalization	
		Nordea Start up and growth			Tibber	Norway	Norway	Tibber is a digital electricity supplier that offers smart solutions to minimize their customers' consumption and costs.	Energy Management	2016	101-250 p.	Series C	Sustainability	Digitalization	

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Lyse	Energy supply 1998 Lyse is an energy and communications company that supplies electricity, natural gas, fuel, heating, entertainment, and utility services.	Lyse Vekst	2021 Lyse Vekst is the Corporate Venture arm of the Lyse group. Lyse Vekst is an industrial and active investor that takes minority ownership.	<ul style="list-style-type: none"> We invest in ambitious and sustainable early-stage companies in technology and renewable energy We invest in Norwegian companies that have significant growth potential, and that have a strategic interest in Lyse's business areas. 	Amina Charging	Norway	Norway	Amina Charging develops high-quality and easy-to-use chargers for the mass market.	Electrical Equipment	2021	11-50 p.	Series Unknown	Sustainability	Digitalization	
		Lyse Vekst			IndyRIOT	Norway	Norway	Indyriot engages in testing a job for a non-existing company.	Business Software	2020	1-10 p.	Seed	Digitalization		
		Lyse Vekst			Tectal	Norway	Norway	Tectal provides infrastructure solutions and data and analysis services.	Business Software	2016	1-10 p.	-	Sustainability	Digitalization	
		Lyse Vekst			SEID	Norway	Norway	Manufacturer of industrial odor and air pollution control systems designed to improve environmental footprint. The company specializes in developing pollution control systems such as high-density plasma reactors, odor abatement units, and carbon filters using plasma physics technology, helping people to reduce carbon dioxide emissions from the environment.	CleanTech	1997	11-50 p.	-	Sustainability		IOT
		Lyse Vekst			Datek	Norway	Norway	Datek installs automatic lighting control systems in cities alongside IoT solutions for the corporate sector.	Electrical Equipment	1987	51-100 p.	-	Digitalization	IOT	
		Lyse Vekst			Infotiles	Norway	Norway	InfoTiles provides AI-driven solutions that unlocks water insights, helping cities and utilities be more sustainable	Business Software	2016	11-50 p.	Seed	Sustainability	Digitalization	
		Lyse Vekst			Blueday Technology	Norway	Norway	Blueday Technology recognised for the development and supply of complete power and automation systems for AMP/OPS, ships and ferries.	MarineTech	2013	101-250 p.	-	Sustainability	Digitalization	
		Lyse Vekst			Validé Invest II	Norway	Norway	Validé is one of Norways largest government funded incubators and seed investor, based in the Rogaland-region.	VC	2015	11-50 p.	-	-		
		Lyse Vekst			Optimeering	Norway	Norway	We balance power systems through empowering physical power operations to optimise their physical power trading with our AI forecasting tool.	Energy Management	2019	1-10 p.	-	Digitalization	AI	

	Lyse Vekst		Katapult Fund 3	Norway	Norway	Katapult is an investment company and accelerator, focused on highly scalable impact climate, ocean and agri-tech startups.	VC	2017	11-50 p.	-	-		
	Lyse Vekst		Heimdall Power	Norway	Norway	Heimdall Power is a company that streamlines the use of electricity in a growing market for the Internet of Things.	Energy Management	2015	11-50 p.	Series Unknown	Sustainability	Digitalization	
	Lyse Vekst		Becour	Norway	Norway	Sales of guarantees of origin, as well as development of digital solutions for more innovative use of guarantees of origin.	Business Software	2018	1-10 p.	-	Sustainability	Digitalization	
	Lyse Vekst		Sandcatch Solutions	Norway	Norway	Developer of water purification equipment designed to offer systematic sand removal in purification and biogas plants. The company's equipment offers sand removal in untreated sludge and waste streams that are fed into purification and biogas plants, enabling biogas plants to increase profitability and optimize	CleanTech	2021	1-10 p.	in Accelerator	Sustainability		

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Equinor	Oil and Gas 1972 Equinor is an energy company that specializes in providing oil, gas, wind energy, and solar power energy.	Equinor Ventures	1991 Equinor Ventures invests in and supports innovative companies to shape the future of energy.	<ul style="list-style-type: none"> • Dedicated to investing in ambitious early-phase and growth companies. • We believe that the innovation, creativity and agility of startups can drive change towards a low-carbon future. • We will aim at implementing the technology in Equinor's value chain to either strengthen the current business, through improving revenue, cost and/or HSE. 	Semodia	UK+Europe	Germany	Semodia is a manufacturing company for industrial automation.	Business Software	2019	1-10 p.	Series A	Sustainability	Digitalization	
		Equinor Ventures			Green Li-ion	Asia	Singapore	Green Li-ion is a deep clean technology that solves the existential risk to the precious metals industry and the environment.	CleanTech	2020	1-10 p.	Series B	Sustainability		
		Equinor Ventures			Powertrust	North America	Canada	Powertrust provides expertise in developing, financing, and operating renewable energy projects.	Energy Management	2020	1-10 p.	Pre-seed	Sustainability		
		Equinor Ventures			HySiLabs	UK+Europe	France	HySiLabs has developed a technology that maintains the advantages of a liquid fuel, without generating emissions.	CleanTech	2015	1-10 p.	Series A	Sustainability		
		Equinor Ventures			Captura	North America	US	Captura's mission is globally scalable carbon capture to support a sustainable future for the climate.	CleanTech	2021	1-10 p.	Series A	Sustainability		
		Equinor Ventures			RepAir	Asia	Israel	RepAir develops a Direct Air Capture system based on a proprietary electrochemical cell technology.	CleanTech	2020	1-10 p.	Series A	Sustainability		
		Equinor Ventures			Sol Clarity	North America	US	Sol Clarity specializes in the development and production of self-cleaning solar.	CleanTech	2020	1-10 p.	Pre-seed	Sustainability		
		Equinor Ventures			Arcadia	North America	US	Arcadia is a climate software and data company that specializes in decarbonizing the electric grid.	CleanTech	2014	501-1000 p.	Series Unknown	Sustainability	Digitalization	
		Equinor Ventures			Our Next Energy (ONE).	North America	US	Our Next Energy is a developer of energy storage technology to expand access to sustainable power.	Energy Storage	2020	101-250 p.	Series B	Sustainability		
		Equinor Ventures			Patch	North America	US	Infrastructure to power a sustainable economy.	CleanTech	2020	51-100 p.	Series B	Sustainability	AI Digitalization	
		Equinor Ventures			Elestor BV	UK+Europe	Netherlands	Cutting the cost of electricity storage is their mission.	Energy Storage	2014	1-10 p.	Series A	Sustainability		
		Equinor Ventures			Nicoustic AS	Norway	Norway	Nicoustic developed accurate, non-intrusive technology for separator-level measurement based on Guided Ultrasonic Waves.	Business Software	2022	1-10 p.	Seed	Sustainability	Digitalization	

	Equinor Ventures		Inherit Carbon Solutions AS,	Norway	Norway	Inherit Carbon Solutions creates durable nature-friendly carbon removal solutions.	CleanTech	2021	1-10 p.	-	Sustainability
	Equinor Ventures		Saferock AS	Norway	Norway	Provider of carbon-neutral geopolymer concrete designed to reduce carbon footprint. The company's concrete is made using less expensive waste materials from the mining industry ensuring a product that is both economically and environmentally attractive, enabling building and construction industry to reduce the total emissions in a very cost-effective way.	CleanTech	2019	11-50 p.	-	Sustainability
	Equinor Ventures		Rovco	UK+Europe	UK	Rovco provides an autonomous underwater vehicle and remotely operated underwater vehicle technologies and support services.	MarineTech	2016	11-50 p.	Series B	Digitalization
	Equinor Ventures		Vaarst	UK+Europe	UK	Vaarst develops robo	MarineTech	2015	11-50 p.	Series B	Digitalization
	Equinor Ventures		Revterra	North America	US	Revterra is a developer of flywheel energy storage svstems.	Energy Storage	2018	1-10 p.	Series A	Sustainability
	Equinor Ventures		Electric Hydrogen	North America	US	Electric Hydrogen develops electrolyzer technologies to enable abundant, low-cost, and clean hydrogen to replace fossil fuels.	Energy Production	2021	101-250 p.	Series B	Sustainability
	Equinor Ventures		H2Site	UK+Europe	Spain	H2SITE produces onsite and renewable H2 for small and medium companies.	Energy Production	2019	1-10 p.	Series A	Sustainability
	Equinor Ventures		Booster Fuels	North America	US	Booster focuses on energy delivery, integrated logistics, and providing solutions for decarbonizing last-mile delivery	Energy Management	2015	251-500 p.	Series D	Sustainability
	Equinor Ventures		Nth Cycle	North America	US	Nth Cycle is a metal processing technology company working with battery recyclers and miners to recover production-grade critical minerals.	CleanTech	2017	1-10 p.	Series B	Digitalization
	Equinor Ventures		Context Labs	North America	US	ContextLabs provides enterprise platform solutions that deliver trust and transparency for the digital and physical worlds.	Business Software	2012	101-250 p.	Undisclosed	Digitalization

	Equinor Ventures		Lithium de France	UK+Europe	France	Lithium de France, which is a subsidiary of the French group Arverne, develops projects of Geothermal heat and Lithium.	Energy Production	2020	11-50 p.	Series B	Sustainability
	Equinor Ventures		Eelume	Norway	Norway	Eelume is a disruptive technology for subsea inspection, maintenance and repair (IMR).	MarineTech	2015	1-10 p.	-	Sustainability
	Equinor Ventures		RayGen	Australia	Australia	RayGen is building lowest cost, long duration solar + storage to deliver the economics of pumped hydro with the flexibility of batteries.	Energy Storage	2010	11-50 p.	Series B	Sustainability
	Equinor Ventures		Sapphire Technologies	North America	US	Sapphire Technologies develops, manufactures, and sells energy recovery systems for both natural gas and hydrogen industrial applications.	Energy Management	2021	1-10 p.	Series A	Sustainability
	Equinor Ventures		Energize Ventures	North America	US	Energize Ventures is a global alternative investment manager focused on the digitization of energy and sustainable industry.	VC	2016	11-50 p.	-	-
	Equinor Ventures		Solid Power	North America	US	Solid Power is a developer of solid-state rechargeable batteries for electric vehicles and mobile power markets.	Energy Storage	2011	101-250 p.	Grant	Sustainability
	Equinor Ventures		AP Ventures Fund II	UK+Europe	UK	AP Ventures is an independent venture capital firm.	VC	2018	1-10 p.	-	-
	Equinor Ventures		Syzygy Plasmonics	North America	US	Syzygy Plasmonics is a developer of a photocatalytic reactor designed for fuel cell vehicles and small-scale industrial applications.	Energy Production	2017	51-100 p.	Series C	Sustainability
	Equinor Ventures		ScoutDI	Norway	Norway	Scout Drone Inspection is developing an autonomous drone that will provide a complete visual inspection.	Electrical Equipment	2017	11-50 p.	Series Unknown	Digitalization
	Equinor Ventures		Hydrophilic	Norway	Norway	Developer of a reservoir intelligence technology designed to determine the volume of an oil reservoir and reduce the need for appraisal drilling. The company's technology provides decisive information on the potential of hydrocarbon reservoirs and also offers continuous reservoir monitoring, enabling clients to significantly lower the cost and make the industry more efficient and profitable.	Electrical Equipment	2016	1-10 p.	-	Sustainability

	Equinor Ventures		Beyondr	Norway	Norway	Developer of energy storage systems intended to provide sustainable battery cell technology. The company's products use sawdust converted into super-activated carbon for use in the capacitor's positive electrode and the negative electrode uses silicon derived from sand that is both renewable and recyclable, provides proper durability, and quick charging, enabling clients to reduce the need for over-sizing and frequent replacement of batteries.	Electrical Equipment	2016	51-100 p.	-	Sustainability	
	Equinor Ventures		Staveng Transfera AS	Norway	Norway	Provider of mechanical solutions based in Stavanger, Norway. The company offers tailor-made services for lifting and material handling, including control systems, and is focused on the development of safe remote-operated solutions for the offshore and renewable industry.	Electrical Equipment	2007	11-50 p.	-	Sustainability	
	Equinor Ventures		Earth Science Analytics AS	Norway	Norway	Earth Science Analytics is an Artificial Intelligence petroleum geoscience software provider	Business Software	2016	11-50 p.	Series B	Digitalization	
	Equinor Ventures		Water Linked AS	Norway	Norway	Water Linked provides customized solutions to build acoustic subsea communication and positioning systems for marine industries.		2013	1-10 p.	-	Digitalization	AI
	Equinor Ventures		Carbon Clean	UK+Europe	UK	Carbon Clean Solutions develops CO2 separation technology designed for industrial and gas treating applications.	MarineTech CleanTech	2009	101-250 p.	Series C	Sustainability	Digitalization
	Equinor Ventures		Commonwealth Fusion Systems (CFS)	North America	US	Commonwealth Fusion is an MIT spinoff research company that focuses on bringing fusion energy technology to market.	Energy Production	2017	251-500 p.	Series B	Sustainability	

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Yara	Agriculture and Industrial chemical	Yara Growth ventures	crop nutrition company and a provider of environmental and agricultural solutions Established as Norsk Hydro in 1905 Demerged as Yara International ASA in 2004 President and CEO: Svein Tore Holsether Headquartered in Oslo, Norway Listed on the Oslo Stock Exchange (ticker: YAR) Around 17,500 employees Operations in 60 countries	* Sustainable agricultural practices * Clean energy	Varda	Norway	Norway	We enable the use of field-level data to accelerate the transition towards a nature-positive food system.	AgTech	2022	-	-	Digitalisation		
		Yara Growth ventures			Agrofy	South America	Argentina	Agrofy is a global pure agriculture e-commerce ecosystem	E-Commerce	2015	101-250 p.	Series C	Digitalisation		
		Yara Growth ventures			Agrolend	South America	Brazil	Agrolend provides credit for Brazilian farmers with an easy, digital and bureaucracy-free process	Financial Services	2020	11-50 p.	Series B	Digitalisation		
		Yara Growth ventures			Apollo Agriculture	Africa	Kenya	Apollo Agriculture is an agtech company that helps small-scale farmers access markets, financing, and inputs.	Financial Services	2016	251-500 p.	Series B	Digitalisation	AI	
		Yara Growth ventures			Boomitra	North America	US	Boomitra is the leading international soil carbon marketplace powered by AI and remote sensing technology.	AgTech	2016	11-50 p.	Seed	Digitalisation	Sustainability	
		Yara Growth ventures			Boost Biomes	North America	US	Boost Biomes develops microbial products to sustainably improve food production and shelf-life.	AgTech	2016	11-50 p.	Series A	Digitalisation		
		Yara Growth ventures			Ecorobotix	UK+Europe	Switzerland	ecoRobotix provides AI powered plant-by-plant recognition and ultra-high precision crop treatment	AgTech	2014	51-100 p.	Series B	Sustainability	Digitalisation	
		Yara Growth ventures			H2PRO	Asia	Israel	H2Pro is a renewable energy company that is working on an efficient green hydrogen production method - E-TAC.	Energy Production	2019	11-50 p.	Series Unknown	Sustainability		
		Yara Growth ventures			Hydrogen Mem-Tech	Norway	Norway	Hydrogen Mem-Tech aim is to make the green shift happen through our state-of-the-art hydrogen separation technology with carbon capture.	CleanTech	2017	1-10 p.	Series Unknown	Sustainability		
		Yara Growth ventures			Jai Kisan	Asia	India	Jai Kisan is a fintech platform that provides sustainable financing for rural emerging markets.	AgTech	2017	251-500 p.	Series B	Digitalisation		

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DNV		DNV Ventures	Technical testing and analysis , Professional, scientific and technical activities , IT consultants and advice , Consultants	<ul style="list-style-type: none"> • We invest in startups who share our purpose of safeguarding life, property and the environment. • Target B2B-segments and large-scale industrial solutions. • Industry focus is within maritime, oil & gas, power & renewables, automotive & aerospace, food & beverages or healthcare. • Have your first customer or are close to acquiring your first customer. • Share DNV's purpose to safeguard life, property and the environment. 	ComplAI	Norway	Norway	ComplAI is a compliance platform for business processes.	Business Software	2021	1-10 p.	Seed	Digitalisation	AI	
		DNV Ventures			CyTAL	UK+Europe	UK	CyTAL is an IT company that offers product evaluation, assurance, and cyber assurance of physical security systems.	Cyber Security	2020	11-50 p.	-	Cybersecurity		
		DNV Ventures			HST	North America	US	Build a Zero Carbon World	CleanTech	2012	11-50 p.	Series Unknown	Sustainability	Digitalisation	
		DNV Ventures			Kezzler	Norway	Norway	Kezzler A.S. develops and implements strategies for eliminating counterfeit drugs.	Business Software	2002	11-50 p.	Corporate Round	Digitalisation		
		DNV Ventures			Provision Analytics	North America	Canada	Provision Analytics creates practical and precise software for food processors and manufacturers.	AgTech	2018	11-50 p.	Grant	Digitalisation		
		DNV Ventures			Raptor Maps	North America	US	Raptor Maps is a MIT-born startup that builds software to manage the solar lifecycle.	Business Software	2015	11-50 p.	Series B	Digitalisation		
		DNV Ventures			ScoutDI	Norway	Norway	Scout Drone Inspection is developing an autonomous drone that will provide a complete visual inspection.	Electrical Equipment	2017	11-50 p.	Series Unknown	Digitalisation		
		DNV Ventures			Umotif	UK+Europe	UK	UMotif is a scalable and engaging patient-centred data capture platform for modern research.	Business Software	2012	51-100 p.	Series B	Digitalisation		
		DNV Ventures			Vechain	North America	US	Ve Chain Technology is a software development company that offers carbon management, block chain storage, and transparent supply chain.	Business Software	2015	51-100 p.	-	Sustainability	Digitalisation	