

## **Sustainability influence in the Norwegian IT sector**

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## Preface

This study marks the end of five educational years at the University of Agder with first a bachelor's degree in IT and information systems and then a master's degree in information systems.

The aim of the course is to acquire academic specialization within a relevant area and use theoretical knowledge and research methods to answer a problem. The study deals with sustainability's relevance in today's society, especially for the IT market. The discussion about sustainability is large and can be overwhelming, so being able to examine how this perspective is presented in practice is very exciting!

Thank you to all the organization the who have participated and made the study possible. Especially thanks to the informants who have kindly volunteered for these interviews.

Further, I would like to say a big thank you to my supervisor professor Øystein Sæbø for his support ang guidance though this semester.

Finally, I would like to thank the family for their motivation and good support, as well as my fellow students for their encouragement and good friendships throughout their studies. I will miss you and hope to see you around.

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# Abstract

Adopting sustainability practices into business model has become quite applicable for organizations to do. There are adding up more demands relating to working more sustainable to help save and improve the planet and society. One known opportunity to solve the sustainability problems is with technology and digitalization. For those reasons the IT sector is in an interesting position of how they choose to embrace the trend of sustainability practices.

Through a qualitative method, with 8 semi-structured interviews, this study investigates how the trend of sustainability are influencing the Norwegian IT sector. The study interviewed executives from big IT organizations that all belong to the GoForIT network, and how have a known focus on sustainability. Along with the data from the interviews were also documents used as supplemental data.

The results are presented in framework for sustainability practices by Jacobsen et al. (2020) who have categorized four levels of sustainability practices: Inspire and inform, productize, co-creation, and system building. These categories ranges over different scopes within the organizational structure. The first level of inspire and inform are for internal actions and here the main focus were the training and education of their employees to learn about sustainability and gain an internal motivation to work with the subject. The second level of productize were between customer and organization, and external perspective regarding helping customer with digitalization and sustainability practices. The focus around co-creation regards the value chain that the organization belong to. They feel pressure from customers, stakeholder, and partners, as well as a market pressure to keep up with the trend. The final category is system building and focus on engaging and changing the industry level. They explained how the conversation of sustainable development have become more relevant in the last years, as more people are familiar with the concepts and its importance. They seek out these perspectives from other actors in the industry such as partner, competitors, and academia to get insight into how others work with sustainability.

In conclusion the IT industry is changing at a fast paste to keep up with the trend of sustainability. The industry varies in maturity both from the organizations side and the customer side. As digital transformation and technology are seen as solutions of sustainability challenges, the IT industry have somewhat of an expectation around them to able to support with that. The topic of sustainability is also a driver for collaboration between different actors to tackle sustainability problems and share experiences with each other across the industry.

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# 1. Introduction

As a response to a growing environmental crisis and inequalities in global development, adopting sustainable development is becoming a trend for companies (Waas et al., 2011; Lichtenthaler, 2021). The first mention of sustainable development was in the Our Common Future report from 1987, which states that “sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987.p.40). The concept of sustainability can be represented through several different labels such as corporate social responsibility (Lee & Kotler, 2013; Borglund et al., 2017) and the triple bottom line (Elkington, 2002) that sought to help organizations address sustainability. One of the big concepts is the UN's sustainable development goals (SDGs) which address issues such as climate change, social injustices, poverty, and hunger. The SDGs contain 17 goals and 169 sub-goal and are about achieving sustainable development along three dimensions: economical, social, and environmentally (United Nations, n.d.). In the spring of 2021, were “Mål med mening” (Eng: “Goals with purpose”) published as an action plan from the Norwegian government for how Norway can achieve the SDGs within 2030. This plan was adapted to be relevant for Norway's situation, and this national strategy supplements the global indicators with national measurement points for both public and private sectors to work toward (Meld. St. 40, (2020-2021), p.12-13). The Confederation of Norwegian Enterprises (NHO) also expresses the potential for the private sector with sustainability. Interest in sustainable investments is high, and new standards and reporting requirements enable investors to compare companies and industries. It can make sustainability a real competitive advantage. (NHO, n.d.). There is a lot of potential for organizations to adopt sustainability practices. Jacobsen et al. suggest four main categories of sustainability practices including inspiring and informing, productize, co-creating, and system building (Jacobsen et al., 2020).

One big element to help solve sustainability problems is with use of technology and digitalization. Sustainability and digitalization will play a dominant role in shaping economies and the business activities of companies for years to come (Lichtenthaler, 2020). An example of that is how the European Commission has budgeted about 1.8 trillion to rebuild Europe post-COVID-19. The agreement demands a greener, more digital, and more resilient Europe than before (European Commission, n.d.). According to this plan, both sustainability and digitalization will play a key role in the rebuilding of Europe (European Commission, n.d.).

## 1.1 Research question

In this study, I want to investigate how sustainability has been integrated into Norwegian IT organizations with a focus on their sustainability and practices, and how technology and digitalization are related to sustainable development. My research question is:

*How does the trend of sustainable development influence the behavior of the Norwegian IT sector?*

In this study, I interview executives working with sustainability in the Norwegian IT sector. The organizations interviewed work with delivering digitalization and technology and will present a perspective on how they perceive the importance of sustainability and digitalization. The goal of the project is to get an understanding of how sustainability is influencing organizations that have a known focus on both technology and digitalization. What motivated them to start working with it and how does it fit in their organizational scope. Is there an action plan that is more used than others? Finally, to see how they connect sustainability to digitalization. The findings will be discussed in relation to the Jacobsen et al. framework from the perspective of IT organizations.

## 1.2 Disposition

This paper is divided into 6 chapters. The first is the introduction to which this part belongs.

*Chapter 2* is theory and background on the main perspectives; sustainability (2.1) where Jacobsens et al (2020) framework will be used to map out how sustainability is represented in the organizations. And the second perspective is about digitalization (2.2) and digitainability(2.3) for how sustainability and digitalization is combined.

*Chapter 3* explains the research approach and methodology that is used in this study. The research perspective (3.1), paradigm (3.2), and research design (3.3) are explained. Research design includes a description of how selecting sampling, data collecting, and data analysis was executed. Finally in chapter 3, are quality criteria (3.4) and limitations (3.5).

*Chapter 4* presents the findings from the data collection. This chapter is structured after the topics presented in the interview guide.

*Chapter 5* is the discussion. That follows the structure of Jacobsen's framework for sustainability practices in organizations. The framework presents four categories for sustainability practices: *inspiring and informing*(5.1), *productize*(5.2), *co-creating*(5.3), and *system building*(5.4).

*Chapter 6* summarizes the results to a conclusion and discusses the implication for research (6.1), and the implication for practice(6.2), as well as suggests future studies(6.3).



## 2. Theory

In this chapter I will present the relevant theory for this research. First, I will present sustainability, and how it has impacted organizational strategies and visions, as well as introduce the framework in which I will discuss the findings. The second part introduces digitalization and what part it plays along with sustainability, and the theoretical concept of digitainability.

### 2.1 Sustainability

The topic of sustainability has been discussed for decades. An article from 1987 found that most definitions of sustainability were focused on human survival and varied in terms of social or cultural perspective. Things from the quality of life to an economic perspective, and biological perspective where the emphasis is on ecosystems and species survival (Brown et al., 1987).

Brundtland's report definition of sustainable development is repeated in a lot of research (Zhang & Zhu, 2020; Nourry, 2008; Bonnet et al., 2021, Estevez et al., 2013; Purvis et al., 2019). However, the definition is also seen as vague as it can be difficult to establish specific criteria to judge and accordingly select indicators to measure sustainable development (Zhang & Zhu, 2020). Sustainable development (SD) is about seeing a holistic and integrated approach to development, taking into account the impact of the initiatives on different sectors and their effect on future generations (Estevez et al., 2013. p, 92). A leading idea for achieving sustainable development for organizations is through three dimensions social, economic, and environmental (Kates et al., 2005; Strange & Bayley, 2008). The social dimension concerns people and societal aspects such as human rights, diversity, inclusion, and labor relations (Henisz et al., 2019; Boffo & Patalano, 2020), the environmental dimension is about how to preserve the planet and focus on for example climate change, energy use, and waste and resource management (Boffo & Patalano, 2020), and the economical dimension focus on the money flow, taxes, employment, (Slaper & Hall, 2011). These three are often represented with circles intertangling with each other with sustainability in the middle. Elkington (2002) introduced this concept of a triple bottom line (TBL) which incorporates social, environmental, and financial as parts for measuring performance (Elkington, 2002). Instead of just profit being the baseline motivator, the corporations needed to operationalize corporate social responsibility, and additional care for the planet and environment around them. Another famous version of this concept that is also adopted by organizations is ESG, Environment, Social and Governance. Similar to TBL, ESG involves the social and environmental aspects, but instead of it being economic, the third dimension is about corporate governance which concerns aspects such as management structure, transparency, accountability, and compliance (Boffo & Patalano, 2020). As sustainability is an emerging megatrend, the way that organizations react to the challenge of sustainability will greatly affect their competitiveness in the market (Lubin & Esty, 2010). A study from 2020 reviewed 4,900 Europe-based funds with investments all over the world. The result showed that on average, strategies that incorporate ESG outperform their non-ESG equivalents at every kind of timescale (Lienau, 2020).

The research on sustainability has been generated quickly over the past decades and now comprises a range specific to industries, technologies, localities, and legislation (Jacobsen, 2020, p.2). Jacobsen et al. (2020) proposed a framework for how sustainability practices are structured in a company. They aimed to understand the different categories of sustainability practices that firms adopt and the potentials and challenges associated with them. Jacobsen et al. clustered their findings of sustainability practices into four overall thematic categories. The categories are named *inspire and inform*, *productize*, *co-create*, and *system building* (Jacobsen et al., 2020). The model also includes potential and challenges for each category.

The category *inspire and inform* covers the part of training and motivating internal parts of the organization to become more familiar with sustainability. Examples of this can be arranging workshops, presentations, and encouraging conversations about the subject. It can also include seeking training or consulting from external sources to increase insight and understanding of the potential of sustainability practices. These practices do not necessarily mean that sustainability is a part of the business model, as it focuses on developing knowledge and culture internally. This step is crucial for most organizations to be able to begin implementing sustainability practices (Jacobsen et al., 2020, p. 8-9).

The second category is *productize* which focuses on the organization's design and production. That involves making more sustainable product design, optimizing recycling of product waste, and working towards more sustainable packaging and delivery/return systems. At this level, the organization works toward increasing sustainability practices in the business and creating sustainable value for the customer (Jacobsen et al., 2020, p. 9).

The third category is *co-create* focusing on creating value for the organization and its stakeholders. It can involve co-designing products with actors across the industry, sharing knowledge, and establishing a circularity-focused business approach (Jacobsen et al., 2020, p. 9-10).

The fourth category, *system building*, is explained as activities where the organization supports the change of the relevant environments and communities. Compared to the co-creating level, this has a broader scope with a looser defined interaction between the organization and other actors. Organizations that use *system building* initiatives have sustainability as a core purpose (Jacobsen et al., 2020, p. 10-11).

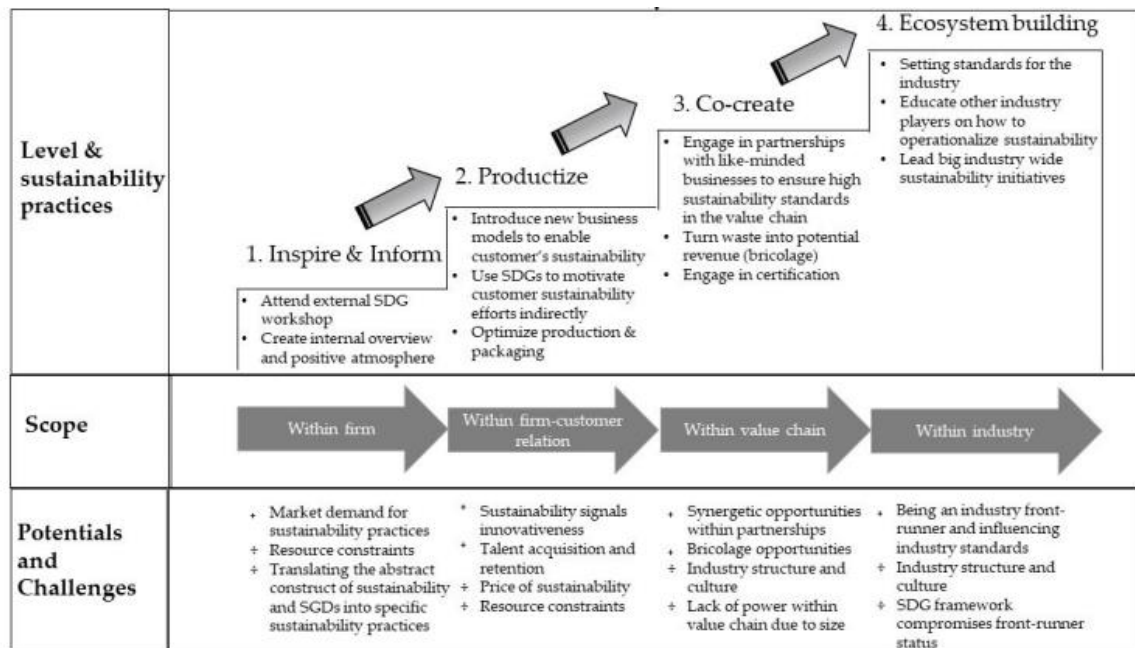


Figure 1: Framework of sustainability practices (Jacobsen et al. 2020)

The study concludes with the framework shown above to illustrate different categories and maturity that sustainability practices can have on organizations. The scope is meant to show an increasing intention to use sustainability practices, meaning that the organizations start with inspire and inform, to productize, then co-create and then to system building. These steps are to represent the level of maturity of sustainability practices in the organization. The authors also express that this framework will not fit all purposes, and that the need of the organization will determine the level they choose to start at. They express that a thorough understanding of the industry in which the organizations operate is necessary (Jacobsen et al., 2020, p.16-17). An example of this is how agile the culture is with their processes and procedures that have an impact on how efficiently they can adopt new practices.

## 2.2 Digitalization

The world we live in is increasingly immersed in the digital, with the Internet, global communications, and digital networks, in what may be called a digital society. The digital, in the form of technologies, is already present in multiple dimensions of our daily life, with specificities that shape social relationships ((Lienau, 2020). Organizational strategies have widely acknowledged the need for transformation along with the new technological opportunities resulting from the variety of digital solutions, advanced data analytics, and artificial intelligence applications (Lichtenthaler, 2020).

The use of digital technologies to change a business model and provide new revenue and value-producing opportunities. In an organizational setting, digitalization can be defined as “[...] a sociotechnical process aiming to convert and modify organizational processes into a digital form” (Danielsen et al., 2022, p.160). Digitalization is about improving the processes, services, and products in an organization. Adopting information and communication

technologies will alter the business model and can be enhancing or disruptive. When implemented well, digitalization can improve efficiency, reduce cost and error rates and increase good cooperation. The benefits of digitalization have increased the competitiveness among organizations, industries, and the public sector (Danielsen et al., 2022).

Digitalization requires restructuring processes, more agility, new standards and policies regarding privacy, and training and education of employees and potential customers (Almeida et al., 2020; Royakkers et al., 2018). COVID19 made the whole organization and stakeholders get involved with taking in the use of digital tools. A survey from McKinsey Global showed that reactions to COVID19 have sped up the adoption of digital technologies over several years (McKinsey, 2020). They were forced to change and implement systems regardless of previous situations and knowledge.

Digitalization is an essential enabler of transformation and needs to be appropriately managed to maximize its benefits. Digitalization is not always a positive asset, as it can enhance social divides or break ethical boundaries with privacy (Benetello, 2021; Pūraitė et al., 2020). Gupta & Rhyner (2022) says that to achieve mindful digitalization, it is necessary to “be aware of where we are in the digitalization process and how we plan to utilize it further, considering it in a comprehensive sustainability context” (Gupta & Rhyner, 2022, p. 2). The next part will look at digitalization and sustainability together.

### 2.3 Digitainability

The concept of digitainability covers the intricate relationship between sustainability and digitalization (Benetello, 2021). Digitalization is recognized as a powerful transformative force to achieve sustainable development and the two megatrends will overlap in shaping future society (Lichtenthaler, 2020; Benetello, 2021). There are limitations in the literature on how digitalization affects sustainable development (Gupta et al., 2020). It is necessary to explore to what extent the opportunities offered by digitalization can be aligned with sustainable development (Gupte & Rhyner, 2022). The digitainability strategy is relatively new but seems many executives have become aware of the potential benefits (Lichtenthaler, 2021)

Gupta & Rhyner (2022) introduce a digitainability assessment framework that can be used for a practical assessment of the impact of digitalization on sustainability (Gupta & Rhyner, 2022). The framework uses the UN Sustainable Development goals as indicators of sustainability and is used to measure the impact of digitalization interventions. The framework goes into detail to cover the purpose and impact of digitalization interventions and is too specific for this assignment. However, to execute such a digitainability assessment, they introduce some more relevant critical dimensions that need to be taken into account: synergies and trade-offs, context-dependency, and multi stakeholder structure.

The first critical dimension is to acknowledge how these goals interact and affect each other. The progress depends on utilizing the different synergies while addressing the trade-offs (Gupta & Rhyner, 2022, p.3). There is a need for a holistic view of how digitalization interference can aid in achieving one goal while being in conflict with another. Digitalization can create a great deal of negative ecological and societal imprints such as pollution, climate

crisis, social tensions, and inequality (Sanchez, 2019). The second critical dimension is context-dependency. To understand the impact of digitalization on sustainable development, you must understand the context for how it will be used. There needs to be an awareness of how to balance preserving the different dimensions of sustainability and how to implement it in practice. For example, using technologies to collect data from satellites about climate change is more ethical than collecting data from hospital records to improve life quality (Gupta & Rhyner, 2022, p.4). And the final criteria is to have multiple perspectives on the role of digitalization and how it can advance sustainable development. This will require multi-stakeholders to get involved in methodically applying technologies for the progress of sustainability (Gupta & Rhyner, 2022, p.4).

For this study I will use the categories from the Jacobsen et al (2020) framework to see how they apply for the IT organizations in this study. This will be a guideline for how organizations work with sustainability practices, and this study will add a perspective from the IT sector to see where their focus area lies. And see if the critical dimensions mentioned by Gupta & Rhyner (2022) are reflected in the findings in this study.

## 3. Method

In this chapter the research approach, perspective, and design will be introduced. The purpose of this chapter is to give the reader insight into how the research approach has been used to answer the research question.

### 3.1 Research perspective

Qualitative studies give researchers opportunities to study cultural and social phenomena (Myers & Avison, 2011) and are explained by researchers as examining a few events in depth so that broader knowledge and understanding is gained about one phenomenon (Oates, 2006). So instead of a quantitative approach where you can generalize the results from a bigger sample, the main objective of a qualitative approach is to gain a greater level of understanding of a phenomenon. The goal of this study see how does the trend of sustainable development influence the behavior of the Norwegian IT sector? To be able to draw a conclusion that can answer the research question, I have conducted a qualitative approach using interviews as the main source and documents as a supplement source.

### 3.2 Paradigm

The philosophical paradigm for this project is *Interpretivism*, which allows the researcher to interpret social settings (Oates, 2006). The core concept of interpretivism is to work with these subjective meanings already there in a social context; to acknowledge their existence, and to reconstruct and use them as building blocks in theories (Goldkuhl, 2011, p 138). For qualitative data analysis, interpretivism is a preferred paradigm as it focuses on the interpretation of social behavior and people's opinions (Bryman, 2016, p. 27–28).

### 3.3 Research design

A research design can be explained as a framework for the collection and analysis of the research data. The choice of research design indicates how you will prioritize different factors in your research process (Bryman, 2016, p. 40).

The design for this study is cross-sectional or survey design. Cross-sectional parts can be questionnaires and interviews but are also used for observation, content analysis, or official statistics (Bryman, 2016, p. 52). The key elements of this research design are to gather samples of cases at a single point in time to collect quantitative or qualitative data, which can be examined to find patterns (Bryman, 2016, p. 53). This research design is appropriate as it allows me to gather the respondent's opinions on the subject for a time constricted study. In this chapter, I will present how the sample was selected, how the data was collected, and how the data were analyzed.

### 3.3.1 Selecting sample

The criteria for the selection of informants for this research are representatives from IT companies with a known sustainability strategy. The desired representatives were executives working directly with the company's sustainability strategy or who had a specific interest in sustainability measures in their company. These criteria were established along with my advisor from the University of Agder.

These informants for this study consisted of representatives from IT companies that have a known focus on sustainability. These companies focus on IT consulting, developing software, developing hardware, security, and cloud services. They present their vision and goals for social, governance, and or environmental sustainability on their websites.

This research project has purposive sampling as I search out the companies that are likely to have relevant data that meets the purpose of the research question (Oates, 2006, p. 98). The companies were found through the GoForIT network which the University of Agder is a part of. This network collaborates with discussing, developing, and influencing the education in IT, technology, and innovation in a sustainable direction (IKT-Norge, n.d.). They were contacted through email addresses provided by my advisory. The email included an introduction of the study and what topics of information I was looking for in the interview, and they were also given an information letter about privacy according to NDS guidelines. The recipient was asked if they themselves were interested or if they knew someone better internally in the organization to ask.

	Role
1	Lead for Sustainability
2	Sustainability manager
3	Chief Finance Officer
4	Press Manager
5	Sustainability Manager
6	Chief Strategy & Communication Officer
7	Chief Research Officer
8	Acting Managing Director

Table 1: Interview ID and role

All the companies were larger organizations with 500 employees or more. Most of the companies were interdisciplinary in their field. Their products and services include producing software and/or hardware, consulting clients on projects involving digital transformations and digitalization, and providing training within IT disciplines, such as cyber security and innovation.

Organization types	
IT consulting	4
Technology production	3
Cyber security	1

Table 2: Organization type

### 3.3.2 Data collection

The qualitative data has been collected through interviews with companies from the Norwegian IT sector. The interviews were focused on chosen topics related to the research question, and the questions asked were directly associated with the chosen topics. The topics were: (1) How they define and their scope of sustainability strategy, (2) how they use sustainability internally and externally, (3) why they use sustainability, and (4) how they see sustainability related to digitalization and IT.

Topic	Theory	Areas of questioning
Intro	-	Role Background Responsibility
Sustainability definition and scope	UN, Brundtland Jacobsen et al., 2020	Definition Vision/goals Maturity
How they use sustainability	Alter, 2013 Jacobsen et al., 2020	Internally: Training Administration Culture  Externally: Products/services Customers Partners
Why they use sustainability	FN, Mål med mening, EU, ISO, Alter, 2013	Inspiration  Environmental pressure
Sustainability and digitalization	Lichtentahler, 2021 Gupta et al., 2020	Sustainable digitalization  Digitalization to solve sustainability problems

Table 3: Interview topics and theory



I used the Jacobsens et al. model when designing the interview guide, particularly to create questions on the topics of (1) How they define and their scope of sustainability strategy, and (2) how they use sustainability internally and externally. The different levels that the model represents is a way of measuring scope or sustainable maturity of the organization, however Another model that inspired the interview setup was Alters Work System Framework and its nine elements to describe a work system. This framework helped unpack the organizational structure. However, as all the informants were executives of the organization, the most relevant WSF elements were the external ones; strategies, environment and infrastructure, and that made the intention of mapping out sustainability influence using this framework a bit short. These elements are also quite broadly described by Alter, especially the environment involving organizational, cultural, competitive, technical, regulatory, and demographic environments in which the work system operates (Alter, 2013), which made it feel necessary to unpack those to a greater degree. I chose instead to use the interview topics to unpack the result.

The interviews were conducted as semi-structured interviews. This way I was able to ask the questions related to the topics, as well as to give them the opportunity to elaborate on things and me the possibility to ask follow-up questions. I had an interview guide with prepared questions regarding each topic, however, the goal of the interview was to follow the conversation around the topics, and the questions were asked if necessary.

Informant id	Duration	Date
1	41min	24.03
2	29min	21.03
3	53min	22.03
4	45min	06.03
5	36min	28.03
6	38min	23.02
7	51min	03.03
8	48min	28.03

Table 4: Interview overview

During the interview the informant had recommendations for documents related to the topics. Supplemental data were also gathered from relevant documents recommended by the

informant. These documents were company policies or reports related to their sustainability strategy.

Document id	Type of document	Informat	Date of publication
D1	Sustainability report	1	2021
D2	Sustainability report	2	2020
D3	Yearly report	3	2020
D4	Sustainability research	4	N/A
D5	EU report	4	2021
D6	Sustainability report	5	2021
D7	Internal Methodology	5	2021
D8	Code of conduct	8	2021

Table 5: Document overview

### 3.3.3 Data analysis

For the data analysis part, I have followed Braun and Clarke’s six steps principles for thematic analysis. Thematic analysis is a qualitative analysis that is used because of the flexibility to identify and organize patterns within the data (Braun & Clarke, 2006). The analysis is divided into the following six parts:

#### *Step 1: Read through the data*

It begins with getting an overview of the material that I will be analyzing. This included transcribing the interviews and re-reading them, as well as going through the supplemental documents. When going through the material, I took notice of the repeating themes in what they said. Each informant had individual approaches which they expressed eagerly.

#### *Step 2: Begin coding the material*

After getting the overview of the materials, I started going through and labeling the data. I sorted the transcripts and documents in the analytical software tool NVivo 2012 and started

going through them while using the node function to create categories of the themes. The result was recurring subjects relevant to the topics discussed in the interview

### *Step 3: Developing themes*

After having coded all the interviews, the next step is to look for broader themes among the codes. I used the areas of questioning from the interview guide as a guideline for organizing the codes.

### *Step 4: Evaluate themes*

The next step was to analyze and evaluate them into more overall requiring themes in their answers. Below are examples of the most prominent overall themes:

- *Sustainability strategies*: covering descriptions of their sustainability strategies and reports and other sustainability reports or plans that worked as inspiration.
- *Organizational structure*: covering how the organization is structured in terms of core values, hierarchy, and culture
- *Training*: covering how the organization educates its employees on sustainability.
- *Maturity*: covering their own description of how mature they feel about working with sustainability, and history with sustainability.
- *Customer perspective*: covering what services they provide, what the customer wants, and their perspective of sustainability.
- *Motivation*: covering their motivation for working with sustainability and where the motivation comes from internally (from administration, stakeholders, or passionate workers).
- *Digitainability*: covering their thoughts and ideas on how sustainability and digitalization work together.

### *Step 5: Examine links and connections*

After identifying the bigger themes, they were reevaluated against each other and see if they could be combined or redefined. One example of this stage was the evaluation of the *Digitainability* theme. As digitalization is a core value of their business strategy and vision, the combination of sustainability and digitalization is already placed in a different context. Therefore, the reflections that were originally marked under the *Digitainability* theme, could be connected to other themes, such as *Customer perspective* and *Maturity*.

### *Step 6: Provide the report*

This step is about providing the report, in this case, this paper. It is necessary to present the narrative about the data, why and how it is relevant. This step is represented as this paper.

### 3.4 Quality Criteria

The standard way of judging the quality of research data is validity and reliability, which often have an internal and external angle (Bryman, 2016). Internal validity focuses on whether the data obtained is correct for the study. External validity concerns whether the data can be transferred into other contexts or if it can be generalized. External reliability is about to what degree can your study be replicated, and internal reliability is making sure that your results are reliable (Bryman, 2016, s. 383–384). These criteria have been largely developed in quantitative research, and there are discussions on how well they can be adapted to qualitative studies. A parallel of these criteria was made by Guba & Lincoln (1989) to better evaluate an interpretive study. These criteria are credibility, transferability, dependability, and confirmability.

*Credibility* focuses on making sure the results actually represent the reality of the phenomenon that is being studied. To achieve credibility, all the statements that are presented in the results were sent to the informant to confirm and verify them. The statements had been both transcribed and translated from Norwegian to English, and this gave the informants the possibility to validate their meaning. One example of this was from one informant that some of their answers were not as relevant now as when the interview happened. Showing also that change happens quickly around this topic. Another form of credibility was the documents that the informants recommended. The documents came from recommendations during the interviews and were related to answers that the informants were giving. The main purpose of the documents was to back up or elaborate on the answers of the informants, for example in regards to the descriptions of their sustainability strategy or internal policies.

*Transferability* is about how transferable the results are to other settings. As most qualitative studies focus on individuals that share certain characteristics, it is necessary to include details about the setting of research that has been done so that others can determine whether the results are transferable to other contexts (Bryman, 2016, s. 384). This research has studied organizations within the Norwegian IT sector. The participants are anonymous, however, do belong to the GoForIT network that works on education and innovation for digitalization and sustainable development.

*Dependability* is about ensuring that the methodological process is presented so that the reader can follow the choices that the researcher has made (Bryman, 2016, p. 384-385). This is presented above by showing the steps of the research process so that other researchers could replicate the approach.

*Confirmability* focuses on ensuring that the researcher is working in good faith and does not allow personal bias to affect the results (Bryman, 2016, p.385). To achieve this the results are built mostly on direct quotes given by the informants. This is to show that the findings and discussions are grounded in the data.

### 3.5 Limitations

Every interviewee I interviewed was found through the GoForIT network. This means that the organization had a similar interest in pursuing sustainable development within education and innovation. They have similar motivations and work towards a great strategic understanding of how to implement sustainability into organizational strategies. This sample represents a highly motivated group, that see the need for sustainability and that might add some biased over the results in terms of representing the Norwegian IT sector.

Another point that will not be well addressed in this study is how the international scope of these organizations varies. Some of the organizations are Norwegian, and some are bigger international companies with origins in other countries and whose organizational strategies have high influence from such local regulations. It may be that these differences have something to say in relation to how the results reflect the Norwegian market.

I also only talked to the executives responsible for sustainability development in the organization, so even though they worked with it, they could not talk too much about the subject of digitalization and IT. Their main focus area was sustainability and therefore the angle of sustainability and digitalization were mostly talked about in a administrative context. And also since all the interviewees were on the executive level, and therefore represented mostly their strategic visions and could not necessarily give perspectives on the operational levels.

## 4. Results

The next chapter will present the results of the qualitative study. It will unpack the different levels of how sustainability has influenced them by presenting their sustainability strategy and practices, as well as motivation. The section is divided into the topics from the interview guide and the most relevant under-categories from the analysis: How the organization defines and their scope of sustainability strategy, how they use sustainability internally and externally, why they use sustainability, and how they see sustainability related to digitalization and IT.

### 4.1 Sustainability strategy

Each organization had an approach to a sustainability strategy. They were asked if they had been influenced by other sustainability frameworks. Many mentioned being inspired by other concepts, however they all had their own approach. The United Nations (UN) frameworks and action plans on sustainable development were mentioned several times. One influencing UN element is the UN Global Compact, where 5 of the companies mentioned being members. The UN Global Compact is a network that encourages businesses to turn sustainability challenges into concrete business opportunities.

*“The UN Global Compact, being a member there encourages us to report every year, and our sustainability report is also put up against that report so that the sustainability report meets the 10 principles that the UN Global compact has for members then.” (1, Lead for Sustainability)*

3 of the informants directly mentioned that they had found inspiration from the UN's Sustainable Development Goals as a way of representing their sustainability strategy. Including some or all of the SDGs allows them to convey their focus areas in a more recognizable way for both internal and external actors.

*“With the UN sustainability goals you have a common language and you can see if you have similar priorities, so it also makes it easier to collaborate with parties that you may not have collaborated with before.” (1, Lead for Sustainability)*

There was also a choice of not choosing to include specific SDGs in their strategy.

*“We have deliberately not chosen any of the US's sustainability goals because we are the type of operation we have is that we want to be able to deliver on everything with our customers, so we have made it well proven.” (3, Chief Finance Officer)*

Another work from the UN is the Paris Agreement which focuses on limiting climate change. This action plan is seen as a necessary “end goal” to work towards, and one organization explained that they are basing their sustainability strategy on the goals of the agreement.

*“We made a plan and the sustainability goal that is in this plan are so-called Science-Based Targets, meaning that they are in line with the Paris Agreement.” (2, Sustainability manager)*

Another framework of inspiration was the ESG that 4 of the informants referenced. They expressed that these three, environmental, social and governance, are the important areas to work with, and that they need to be used together.

*“Many when they think of sustainability think of environment and climate, but for us, it is about ESG; environmental, social, and governance. The way we work with sustainability is to see them in context with each other”*(4, Press Manager)

On the other hand, some organizations also explained their own approach and interpretation of sustainability outside from the typical three dimensions of ESG. Informant 6 expressed how their focus had two perspectives, one on internal compliance, especially in terms of the EU taxonomy and the EU demands, and the other on how to deliver sustainability services commercially to customers. Including them, informant 7 explained their two perspectives in their strategy.

*“The term sustainability from our perspective is about two things: the first is to save the planet and the second is employee branding, to stand out as an attractive, forward-leaning employer [...]”* (7, Chief Research Officer)

This is not to say that they have parts of ESG in their strategy, but it was clear that they have their sustainability strategy after their needs instead of adopting an external sustainability framework.

#### 4.1.1 Maturity

The structure and scope of the sustainability strategies varied. Maturity was a determining factor of how organizations measured value in their performance. Organization how had worked with sustainability practices for years and had clearer objectives and timelines.

*“One of our visions for everything we do is to have a positive impact on the world. So we have worked with sustainability for the last 50 years in one shape or another, and we have been a part of many initiatives to use technology and systems to improve the world.”* (5, Sustainability Manager)

*“When we realized that we have to work a little more structured and methodical with sustainability, we can not just in a way do a little here and a little there, and then comes an initiative. We must structure and work methodically with it and do the same everywhere we are. [...] So we have a plan for 2030.”* (2, Sustainability Manager)

On the other side, there were those organizations where the sustainability strategy is still a work in progress. Informant 6 expressed how they work with qualitative goals, but does not have the quantitative measurement in place yet. Informant 3 express similarities in their situation .

*“The immaturity is perhaps a bit fragmented with us, but I do not think we are alone about the either [...] the immaturity is because we cannot yet put numbers on it yet”* (3, Chief Finance Officer)

*“We work with sustainability actively but are still adapting in relation to how we work, think and operate. Our ambition is that all our deliveries are supporting sustainability goals” (8, Acting Managing Director)*

Another aspect of this adaptation is that transformation is something they are used to as IT focused organizations. Part of the adoption is to develop the strategy into the organization over time.

*“We are continuously developing, not just on sustainability, but also various technologies. We sell expertise, so we are very rigged and very used to renewing ourselves all the time, to develop new policy concepts.”(4, Press Manager)*

## 4.2 Internal focus on sustainability

The internal focus of sustainability concerns how sustainability was adapted into the internal structure and how processes have been influenced, as well as the culture and training around sustainability practices.

For internal sustainability practices that are in focus they mentioned mostly environmental measurements in regards to energy usage, recourse management and traveling.

*“We set focus areas and describe what we put in that, describe what we have done and what we are going to do.[...] With our own houses, you can say that we work continuously to make it better with how we sort rubbish waste, energy efficiency to the houses, transport and so on. But we have not set our own goals, we will only do better and better”(3, Chief Finance Officer)*

*“We also have goals internally in relation to reducing our own climate emissions, and it applies both to emissions on-premises, for example, that we must have renewable energy and must be iso certified. Everything should be circles, such as what food we have in the canteen, and the data quality of the numbers we send in.” (4, Press Manager)*

*“We are a part of a nordic group, and we keep climate accounts and compensate our emissions. Our emissions is mostly connected to office locations, equipment, and travels.” (8, Acting Managing Director)*

The mentioned subject on the agenda for internal social sustainability were diversity, especially to get more women involved in IT and management (1, 4), and for the governance aspect it was about compliance and reporting on the EU taxonomy (2, 5, 6).

### 4.2.1 Culture

The organization wishes to build a good culture around adopting sustainability into their work processes. An element of sustainability adoption is how the employees engage in



sustainability. Informant 4 explained that their consultants and sellers have that kind of freedom.

*“We are rigged that if you have any deliveries to customers, and identify something they need that you have the potential to produce, then you do that.”*(4, Press Manager)

5 informants expressed that they often found themselves having especially passionate employees introducing their own initiatives and ideas of sustainability. They encourage them to develop skills and knowledge about sustainability.

*“If they have ideas or wish to work with something, we will not stand in the way of that or dictate what everyone does. I have faith that people perform better and like going to work more with internal motivation”*(1, Lead for Sustainability)

*“In the onboarding phase, we ask new employees in the recruitment process; what do you think about sustainability and what are you interested in just to somehow start the thought process that they can actually use their expertise for what they are passionate about.”*(5, Sustainability Manager)

*“We are a consulting house and we live by competence, so we are very good at sharing insight and competence internally, so that when someone has gained experience and competence in that area regardless of are sustainable [...], we have internal seminars and meetings to share experiences and expertise.”*(4, Press Manager)

3 informants express that a push from owners and stakeholders is what kickstarted their focus on sustainability and that having such an engaged leadership creates is very encouraging. Informant 8 also expresses that they see it necessary to engage the whole hierarchy of the organization to want to work with sustainability.

*“If you enable a top- down push from management, and bottom up from the organization, we have the grounds for achieving our goals .”* (8, Acting Managing Director)

#### 4.2.2 Training

It is essential that the sustainability strategies and practices are taught to all the employees to make sure everyone is working towards the same goals. The informants presented different types of knowledge sharing and training tools to educate their employees. One way was to have an established task force or a department, and these included employees from different areas of expertise and department, and are given additional responsibilities to work with sustainability.

*“We have a role that is responsible to ensure that the employees develop sustainability skills [...] We make sure they represent different expertise areas and departments, and they get more responsibility and must improve their sustainability skills, make projects more sustainable, and create a learning environment for sustainability.”* (1, Lead for Sustainability)

*"We have a role called sustainability ambassadors that is a group of employees, 2 in each region. They hold different job positions and an additional role as sustainability ambassadors"* (2, Sustainability Manager)

*"We have established a task force consisting of people from different business areas [...] they are to be front runners for sustainability within their area of competence internally and externally"* (8, Acting Managing Director)

An important way of developing the employees skills is by providing classes and certifications. Having classes and a curriculum about sustainability provides the employees with a clear idea of what they need to know, which is important as sustainability is such a bigger concept.

*"We have a certification program [...] where employees can get certified in sustainability"*(2, Sustainability Manager)

*"And then we have, we test it, sustainability school that is more general which we will develop further but we are very much in the start-up phase here as well."* (3, Chief Finance Officer)

*"When you start working with us, you will go through I think maybe 10 different courses that is about topics like ethics, diversity and inclusion, sustainability [...]"* (4, Press Manager)

*"We have several such annual courses, which are about right and wrong, and how you follow up the culture, take into account your fellow human beings, and that you do things correctly [...], but we now also build sustainability in such a way that everyone has to take that training every single year, and to show that they have understood guidelines. We want everyone to always think and work with that in mind."* (5, Sustainability Manager)

As many of the organizations provide consulting and advisory services, it is important for them to share experiences and keep up with the "freshest" knowledge. So another popular way of sharing information was through networks. They encourage the employees to share experiences with each other using networks and communication channels.

*"For sharing we have face-to-face, present projects, and build network type of sharing."* (3, Chief Finance Officer)

*"We have a sustainability network where there are about 200 people that are connected, and that is active with comments, posts, and updates on activities and events that take place internally and in the market."*(1, Lead for Sustainability)

*"We use internal webinars where we talk about sustainability. So we have different channels and methods, and we try to mix that with taking a day to work with that to continuously keep them informed"* (2, Sustainability Manager)

One of the informants explains how they do have both a task force and training in sustainability. However, it comes from the main department in the USA and is not relevant for their department in Norway.

*"We do get training, but since the training is mainly USA-centric, and they lag behind the sustainability efforts of Europe, we choose to follow local best practices in our offices in Europe"* (7, Chief Research Officer)

They even have performed research on the topic themselves that shows that this kind of approach does not work.

*“We have our own research that shows that adapted and relevant training works. Adaptation of the training is key to success: Giving everyone the same training does not work.” (7, Chief Research Officer)*

### 4.3 External focus on sustainability

Their external sustainability strategies concern their products and services, and how they work with their customers and partners regarding sustainability. They all provide services or products such as IT consulting, developing software, developing hardware, security, and cloud services, and they also present that helping clients with sustainability, whether that is through digitalization, education or security, has become more relevant in recent years.

*“When I look at the development over the last 3 years, there has been an enormous change and development with sustainability, just in the way the customers choose to work with it and also their demands to us” (4, Press Manager)*

#### 4.3.1 Product and services

The informants explain different angles on how sustainability affects their processes when producing products or working with projects including reducing e-waste, green coding and reducing energy usage. For some the sustainability aspect belongs through-out the whole process when working with their customers.

*“We are assisting our customers with innovation and strategy processes, the aspect of sustainability is to be included in all dimensions” (8, Acting Managing Director)*

*“We think that one of the most important things we can do is to help our customers with technology to transform into more sustainable processes and solutions, such as renting instead of owning, and smarter use of resources by repairing instead of throwing away” (5, Sustainability Manager)*

For some of the consulting businesses, this is relevant for when they book projects as well.

*“For example, so many percent of our bookings are booked on sustainability projects.” (4, Press Manager).*

*“Of course, it will be less attractive for us to take a project that has a very bad effect on sustainability, but then we are not there yet that it is only the best in the class on sustainability who we take the project from, because we do focus also on helping those who have a long way to go. [...] so we don't reject them unless it is very bad, and they have no interest in getting better. It is part of an assessment of which projects we want to invest in.” (1, Lead for Sustainability)*

The first perspective is how they use digitalization to solve sustainability problems. The customer seeks help with becoming more sustainable and digitalization is an efficient way for them to achieve that.

*“Digitization in general and the use of technology to solve the challenges of sustainability are incredibly important. One thing is sort of the streamlining you can get, for example, the transition to the cloud how you can in your systems improve and to ensure less emission” (1, Lead for Sustainability)*

*“We help [them] use the power of big data, AI, sensors, and blockchain to create positive effects in society” (2, Sustainability Manager)*

*“[...] You begin with sustainability, and to get there you need to have digitalization, and to get digitalization to work, at least in a sustainable way, you need to have security.” (7, Chief Research Officer)*

*“We see that digitization of technology is one of the tools to get things done, for example for carbon capture.”(3, Chief Finance Officer)*

The other perspective on how sustainability influences their products and services, is ensuring that the digitalization and technology is sustainable and does not have harmful repercussions on the planet and society.

*“Digitalization will often have indirect consequences regardless of whether you are aware of it or not. Because you likely reduce climate or energy-usages, or you increase it in datacenters [...] It will be exciting to see forward in time if there is more awareness around that fact.” (3, Chief Finance Officer)*

*“We believe that everything we do in technology has a sustainability aspect and that one should always start any digital transformation by thinking about sustainability.” (5, Sustainability Manager)*

*“There are many who talk about sustainability strategies and all that, but I do not think very many people talk about sustainable IT. There is, after all, enormous potential and both in the data center cloud strategies and efficiency” (4, Press Manager)*

*“When it comes to system architecture, we can focus on effectivity [...]sustainable coding, and reuse” (8, Acting Managing Director)*

#### 4.3.2 Customer perspective

Most of the organizations were consulting companies or had at least had services within consulting. The majority of the customers of these organizations are other organizations in different kinds of sectors that seek guidance with digitalization and technology to help their own business. Customers asked for guidance on how to become more sustainable. The customers want to transform to become greener and have a big focus on climate and environmental sustainability.

*“You see a bigger focus on environment and climate, and that may be because that is more in the wind right now, but also because our customers are more familiar with and have control over the social and governmental part.” (4, Press Manager).*

And there are also new regulations that they must adhere to, that focus on the governance dimensions.

*“At the same time, we see a change with our customers being concerned about transparency and openness in the value chain. [...] Especially with in regards to the new transparency law that is coming” (2, Sustainability Manager)*

The maturity level of the customers in regard to sustainability varies quite a lot. Some are investing in the resources to make sure sustainability is represented in the company. All the organizations participating in the study are regarded as larger companies with more than 500 employees, and each had at least one person, either partly or fully responsible, to be a spokesperson for sustainability.

*“Most companies today have their own sustainability manager or department. We have seen a lot of growth in the last year. Actually most are for slightly larger businesses, but also the smaller ones. Of course, not everyone can have their own department, they are too small for that, but they somehow have a person who is responsible for sustainability. There is usually a representative who is also in the management group, and who in that sense is a spokesperson for sustainability. And I think a lot of companies realize that it's profitable.”(5, Sustainability Manager)*

However, there are also customers that lack an understanding of what sustainability is about and what it can do for them. They want to digitize their business as that will make them more sustainable compared to the alternative of staying analog, but they do not necessarily see the whole picture that is needed for sustainability development. There are also those that have no to little focus on sustainability, but still want to digitize for economic reasons and not regarding how it works with sustainability.

*“It is also about getting clients to understand that it is not only about digitally transforming your company and then you are done. They also need to see how that digitalization must be adapted to the society we live in” (4, Press Manager )*

*“The health sector is looking at how they can streamline a number of processes, because they want to reduce the number or want to operate more at the hospital than today, because they want to somehow get more out of our tax money, but that is also sustainable. It is more sustainable that we manage to use our hospitals to do better for the population than today, so it has a sustainability element. But this is not necessarily what the customer sees as the most important argument they may have made with an economic argument.”(5, Sustainability Manager)*

*“[customers] are a little immature about demands to us as vendors [...] for us in IT, especially consulting, they do they not have clear demands yet” (3, Chief Finance Officer)*

Informant 3 also expressed during the verifications of quotes that this is something that they have become better at just since the interview happened, and that this area is constantly advancing.

## 4.4 Motivation/Pressure

The organization explained its motivation to work with sustainability and it included competitive and industry pressure.

### 4.4.1 Competitive

The interviewee explained that the market is a big influencer, *“There is research that shows that the companies that are good with sustainability, tend to perform 30% better or that profit is 30% higher.”* (1, Lead of Sustainability).

One of the informants compared how sustainability belongs to the Kodak camera business; Kodak was the world's largest supplier of cameras at the time. We had cameras with photographic film and analog cameras, and then the digital cameras came along, but they made so much money selling photographic film that they did not want to develop these digital cameras, and what happened was that almost no one has the kodak camera today. *“A kodak moment is then something that can happen with sustainability if companies do not actually digitize and change to become more sustainable. You may risk your competitors passing you, and actually lose customers in the future.”* (5, Sustainability Manager)

They have a need to show the market what they are doing with sustainability. *“I will say as well that to be an attractive workplace, then sustainability is incredibly important. We feel the pressure that if we do not get to position ourselves well and tell what we do with sustainability, then I think there are not many [companies] who want to work with us in the future”* (1, Lead of Sustainability)

Another factor is to be attractive for future employees. Potential future employees look for companies that care for more than just profit.

*“I feel that in the younger generation [...] they are more interested in companies that have a purpose.”* (3, Chief Finance Officer)

*“In regards to recruiting, we actively brand ourselves as an employer who not only tops the lists of the best places to work but who is also active, visible, and engaged in sustainability work, we believe we attract the type of employees we want.”* (7, Chief Research Officer)

### 4.4.2 Ecosystem

Working towards sustainability makes you a part of an ecosystem involving customers, partners, competitors, public and academia. It is apparent that to be able to get value of sustainable development, all actors of society must work together.



*“It is a huge amount of work that needs to be done, but it is important not to become paralyzed by the need of tremendous shifts ahead.” (8, Acting Managing Director)*

*“I think we have cooperation as an important area. In other words, sustainability goal 17 often stands a little on its own. You have the 3 pillars and for us, it is important both to work with our customers and as well as our partners to succeed with this message.” (5, Sustainability Manager)*

*“[Our goals] are about providing sustainability training [...] on how IT should help solve the sustainability challenges we have.”(2, Sustainability Manager)*

One organization that has worked with sustainability for several years expressed how the industry has changed.

*“We see now that when we get to talk about this because our employees and clients care about sustainability. [...] It has greater value to talk about it now than it did before” (2, Sustainability Manager)*

Sustainability is such a broad and big concept that for organizations it has become a conversation starter between more non-conventional partners.

*“I see now that sustainability has become more relevant, that there is a focus on creating an ecosystem with partners, therefore not only working with customers and have that one-to-one approach. But you have a bigger degree of an industry initiative to come together to achieve more.” (1, Lead for Sustainability)*

*“We have to put our heads together, we need to collaborate across business areas, organizations and industries. Especially in relation to circular thinking, whole value chains needs to change so we are able to reuse, upstream circulation instead of linear value chains.”(8, Acting Managing Director)*

*“We work with it to build up both the competence internally. We see that we can not only recruit that competence from outside, but we also have to train those we already have and we do that through external partners.” (4, Press Manager )*

There is also collaboration between competitors in relation to sustainability projects.

*“I work amounts other things with [competitor] for some projects [...] there we sit working on projects together, and we would never have done that otherwise. ” (1, Lead for Sustainability)*

And collaborations with academia to gain competence on the subject of sustainability.

*“We invest a large amount of money every single year in research and we also think a lot about how we always meet the world's expectations”(5, Sustainability Manager)*

*“We focus on having new and updated information, which includes collaborating with academia for competence, and we are engaged in GoForIT because it allows us to be engaged across the industry and with [universities]” (3, Chief Finance Officer)*

*“Everyone wants to work together and make each other good. GoForIT is also one of the mechanisms that you want to see how you can contribute together. We work with lots of*

*wonderful people, and everyone has their different angles. We can learn from each other.” (3, Chief Finance Officer)*

This was also expressed in how they responded to these interviews. When I asked them at the end if they had any questions for me, half of the interviewees asked about what the others had said and if they were saying the same things. They expressed they were very interested in the topic and discussion around the usage of sustainability. Some also ask about my opinions and experiences as a student. It is evident that they are very interested in the topic and what others are doing.



## 5. Discussion

This study explores the phenomenon of how sustainability is becoming a part of the Norwegian IT sector with the research question being: *How does the trend of sustainable development influence the behavior of the Norwegian IT sector?* The results will be unpacked using Jacobsen et al. four categories of sustainability practices to see how the organizations in this study are currently focusing on the challenge of sustainable developments. Jacobsens et al. present a framework for sustainability practices for companies, and I will use that framework to analyze the results from the data collection.

### 5.1 Inspire and inform

The first level is internally in the firm with the intent to inspire and inform employees about sustainability. Providing excellent and relevant employee training is a great asset for the organization to achieve its goals within sustainability. Jacobsen et al. explained that this element is necessary to start with sustainability. The organizations in this study support this argument. They make it clear that engaging their employees is a big part of their focus. As stated by the informants, they must have everyone on board to achieve their sustainability goals. One systematic approach is supporting individuals with a passion for sustainability to follow their ideas. This approach leads to pressure coming from the bottom and up. As most of these organizations work as consultant's houses, they are used to having employees specialize in different IT skills and knowledge. They allow and encourage the employees to purpose their passions will give them an internal motivation to work and that often gives better results in their performance. There are different tactics they use to achieve this.

There were some established schooling and programs to train employees on sustainability. They also had clear goals of what they wanted to achieve. A critical aspect of this strategic level is a straightforward strategy so that everyone in the organization can more easily understand what they are working towards. Having clear goals helps the organization work as a complete unit. They explain that one of the ways to achieve this is to use familiar sustainability plans such as the UN's sustainable development goals to help give a mutual understanding of the overall goal.

Another approach involved having internal networks or channels where anyone could share their experiences or skill. This ad-hoc way of sharing information does not necessarily ensure the information's quality, but it provides relevant and practical examples of how sustainability can be used. Some mentioned that this was the preferred way of spreading information as it allowed the employees to build their understanding and motivation for sustainability.

One of Gupta & Rynher's critical dimensions to merging sustainability and digitalization is to see the synergies and trade-off of sustainability (Gupta & Rhyner, 2022). The sustainability strategies differ from being focused internally, externally, or in combination focus. The companies have specific sustainability goals, to follow universal action plans, or having worked with it for years and it now being well integrated into the structure. The organization that had recently started with its sustainability strategy preferred keeping its goals open and

not limiting itself to, for example, some of the SDGs. For some, the strategies were explained vaguely to allow them to explore what works for them and discover the benefits and advantages.

Many organizations included both of these approaches by having measurable goals and training for sustainability practices, as well as allowing employees to work and learn about sustainability in their interests. Most organizations in this study provide consulting services, which consist of knowing a lot of different skills and information. As IT is an ever-evolving area of knowledge, such organizations need to be agile and expect their employees to constantly seek out new information to keep up. Having this nature of adopting new skills within IT can be transferred to adopting sustainability.

These organizations must build a strong internal motivation for sustainability by engaging their employees. The encouragement varies as some organizations have clear goals reflected throughout their entire organization, and therefore they provide specific training to achieve this understanding. And then there are also more ad-hoc ways of motivating employees to work with sustainability. They build a culture around gaining their understanding of the subject and sharing that knowledge with others. Of the companies interviewed, several had a combination of these approaches, often depending on the maturity and resources devoted to it.

## 5.2 Productize

Productize is focused on the relationship between the organization and the customer. This category is meant to focus on the design process of products and reduce waste, but most organizations provide services in the form of consulting or advisory to projects. The most significant area for making their products more sustainable was green coding and reducing e-waste.

Most of their customers were other organizations that want to integrate more IT or technology into their business, so their demand to the consultants is guidance or tools for this process. With sustainable practices on this level, there are two central angles that the organization works with its customers. They say that customers are very different in terms of competence and motivation. Some will focus on becoming more digital, and others see the whole picture with how digitalization also affects the society around them.

Customers see digitalization as a way of becoming more sustainable. Going from analog processes to more digital save's resources and paper waste and can streamline big data analytics to optimize production. The conversation around sustainability has become more common to have with the customers. If their goal is to become more sustainable generally, the initial solution is to become more digital. Customers seek IT companies and consulting firms to help them become more sustainable through digital services and transformations. Some organizations talked about the fact that they are expected to be able to support with sustainability expertise beyond what has to do with digitalization. However, it was also mentioned how combining digitalization and sustainability is not discussed enough. One of the critical dimensions from Gupta & Rhyner (2022) focused on seeing the synergies and

trade-offs that digitalization can bring sustainability development. They need to think of digitalization holistically to ensure the result does not undermine other sustainability problems.

When it comes to how the organization approaches its customers regarding projects or bookings, there seems to be some focus on the degree of sustainability related to the job—for some, having the customer have a sustainability focus is essential to whether or not they would work with them. However, there was also the consensus that the goal was to help the customer regardless of their maturity or industry.

## 5.3 Co-creation

The Co-creation category is focused on collaboration with the value chain of the organization to develop sustainable practices. They need to work with their entire value chain to solve sustainability problems. Overall, they talked about how they can use partners, stakeholders, or suppliers to work with sustainability. To be able to achieve a circular economy, a collaboration between the value chain must take place. The companies that work with hardware work with suppliers to reuse and recycle their goods. They mentioned that the topic of sustainability is more of a conversation starter now than before and that it has allowed them to collaborate with their partners with a common goal more efficiently.

One of the critical dimensions from Gupta & Rhyner (2022) focuses on involving multiple stakeholders in implementing sustainability (Gupta & Rhyner, 2022). Sustainability is a very broad subject that demands collaboration between the organizations to be achieved (Jacobsen et al., 2020; Estevez et al., 2013), and they need perspectives from different actors to solve the challenge of sustainability (Gupta & Rhyner, 2022). The stakeholders are a big reason why organizations work with sustainability. Having them see the clear benefit of having sustainability practices in their business models makes the implementation more manageable and allows the organization to present itself as sustainability-focused.

## 5.4 System building

The last level is system building which focuses on how the organization spreads sustainability practices across its industry. These organizations all belong to the IT industry majority working with information and knowledge. A part of this level is to have sustainability in their vision and DNA for their business, meaning that sustainability is a part of every decision they make. One goal of organizations that were required was to work to improve society and to help Norway reach its goals. For some, these goals were the overall goal of their sustainability strategies.

Jacobsens et al. mentioned how these levels could be used to show maturity level with inspire and inform as the place to start and system building showing more maturity. This study described the maturity level as varying between the organizations. However, every organization takes part in the system building level as they are a part of GoForIT. The network GoForIT represents a system building initiative that allows actors across the IT sector to educate and innovate. This can be derived from them being an agile organization and having a culture for adopting knowledge and information. They see how collaborating and creating a network around this network is an efficient way of developing knowledge and skills. This can also relate to the clear connection between sustainability and digitalization in future business models (Lichtenthaler, 2021; Gupta & Rhyner, 2022), which gives organizations an advantage in being ahead on this subject.

This desire to collaborate with other actors also became by how the interviews ended. After asking all the questions, I asked if they had any questions for me and the majority wanted to continue the conversation. They asked what I thought about the subject, what I had learned about sustainability in my studies and what I wanted to bring to work-life after I finish. They also asked what the others I interviewed had said and if they were doing the same things. This demonstrates how they seek perspective from others in the same situation.

Creating an ecosystem with other actors in the industry is of growing importance to cover a more significant part of products and services for their customers. These ecosystems often have an economic benefit for the organizations, and a challenge is to balance satisfying your partner's needs without giving too much of your own (Jacobides, 2019). An ecosystem built on solving sustainability problems can make it easier to establish such collaborations because it is driven by external benefits such as improving the planet and society. It is proven profitable for these organizations to use sustainability in their business (Lienau, 2020; Lubin & Esty, 2010), but it is also based on morality and can be established as the right thing to do, which makes the collaboration a more selfless act.

## 6. Conclusion

This study investigates how the trend of sustainable development influences Norwegian IT sectors. The findings show that there are a lot of different strategies for working with sustainability. Most used external definitions and frameworks as inspirations; however, many also had their assessment of what sustainability meant for them. There was also much diversity in maturity regarding setting measurable sustainability goals and implementing sustainability practices into their business. Integrating sustainability practices into business models is becoming more relevant, and there is a lot of enthusiasm around doing so. There is no one way of applying sustainability practices to one's business practices. Hence, sharing knowledge and experiences internally within the organization and externally with partners, stakeholders, and competitors is a constructive way of getting perspectives on how it can be done.

The conversation about sustainability is becoming more prominent among organizations and customers. However, there is still a way to go regarding appropriately combining sustainability and digitalization. Some customers see digitalization on its own as sustainable development. However, digitalization projects need to include sustainability into the whole process to be sustainable.

The subject of sustainability encourages organizations to collaborate with all kinds of actors within or across the industries. These collaborations build ecosystems that aim to solve sustainability problems and integrate sustainability practices. Such collaborations provide excellent support for evolving the organization's sustainability strategy and easier access to new partnerships and teamwork across the industries.

### 6.1 Implications for research

This study used the Jacobsens et al. framework for sustainability practices from the perspective of the Norwegian IT sector. They mentioned it to be a work in progress as different industries have different cultures around adopting new processes and procedures. The IT sector, especially the IT consultant houses, continue to seek new knowledge to ensure they can keep up with technology or digitalization trends. This approach of training and learning is transferred to how they adopt sustainability. They work agile and use more ad-hoc methods of internal training. The scope levels of maturity that Jacobsen et al. present are not as relevant as the organizations varied in maturity but still found themselves represented in each category, especially in inspire and inform and system building. The framework is also built on the SDGs, which were not transferable to this study as few had chosen specific or any goals.

The concept of digitainability is in focus in practice. However, the topic of sustainability and digitalization is still seen as a new conversation. The critical dimensions that Gupta & Rhyner (2022) present apply to these findings. The multistakeholder interactions in the strategies regarding sustainability are undoubtedly present. Seeing the holistic view of the synergies and trade-offs is still something that needs more information.

Ecosystems between companies often have a competitive advantage. There are calls for papers from associations for information systems (AIS) regarding digital platforms and ecosystems, where they, among other things, look for the nature of the collaboration (Association for Information systems, 2022). This study cannot answer any of those calls. However, sustainability could be another angle of why or how those organizations collaborate within the IT industry. As the ecosystems build on collaboration for sustainable development, they open doors for new associations or partnerships.

## 6.2 Implications for practice

It can be challenging to start by adopting sustainability practices in the organization because the concept is ambiguous. This study shows that it does not need to follow an external framework such as the UN SDGs to get started. Any start is a good start as the effects of sustainability go beyond organizational performance. Motivating the whole hierarchy to work with sustainability practices is vital. To reach the vision of sustainability strategies, getting the whole organization involved is necessary. To achieve sustainability, there is a need for greater engagement, and I recommend seeking more perspectives on sustainability, digitalization, and sustainability outside of the organization. This community effort will make the planet and society more sustainable. Therefore it is necessary to collaborate with other actors such as partners, stakeholders, customers, competitors, and academia.

## 6.3 Future research

One part of this study that limited the results was how open it was. These interviews discussed four themes, and the answers differed significantly between the different informants. If I could do this over again, I would add more structure to the interviews and precise guidelines for how the documents would be used. I would recommend a follow-up study that is more in-depth around the subject of sustainability in the IT sector as there are a lot of different approaches as well as a there is a considerable demand for information by the private sector.

This study interviews the top management of IT organizations about their motivation and strategy for sustainability practices. All the organizations had a known interest in working with sustainability due to their participation in the GoForIT network. Further studies should have a more comprehensive sampling of IT organizations to get a more accurate picture of motivation and pressure to work with sustainability. A quantitative study could generate some more generalizable results.

Some of the organizations felt immature regarding sustainability practices and said they still felt in the beginning phase. A longitudinal study that followed such an organization could help uncover a process for how to integrate sustainability into the organizational strategy. The study could help map out the challenges of defining, measuring, and adapting sustainability practices to organizations, as well as uncover the potential and benefits of this.

Then there are the organizations that have a more clear-cut sustainability strategy for their organization. A further study could be to perform a case study in such an organization and see how the strategy is reflected throughout the whole organization from top to bottom. A model such as the Alter Work system framework could be used to unpack organizational structure. Such a study should focus on how the organization teaches and maintains a collected understanding of the sustainability strategy and if this understanding is an actual reality for the whole hierarchy of the organization.



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