

**THE GREEN PROFILES:
USING SOCIAL MEDIA FOR COMMUNICATING
CORPORATE ENVIRONMENTAL ISSUES
TO EXTERNAL STAKEHOLDERS**

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of Business and Economics**

Master's thesis

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JYVÄSKYLÄN YLIOPISTO

*“It is more beneficial to illustrate than define
the notion of sustainable development.”*

-Pierre M^cDonagh-

ABSTRACT

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<p>Abstract</p> <p>Sustainability is an essential part of doing business nowadays. Corporate sustainability communication (CSC) assists companies to conduct dialogues with stakeholders regarding sustainability topics. In addition, social media has emerged as both challenge and opportunity for CSC. This paper studied the situation of using social media platforms for communicating corporate environmental issues with external stakeholders at four Nordic aviation companies: Scandinavian Airlines (SAS), Finnair, Icelandair, and Norwegian Air Shuttle.</p> <p>The findings display varied performance rates among the airlines and across the platforms. Norwegian has been the most- and Icelandair has been the least-active companies in environmental-related communications. Facebook and Twitter are evidently the most promising options, while video turns out to be a very effective tool for attracting more audience engagement. Besides, there is no need to create a lot of posts in order to gain high interaction rates, but adequate communicating frequency and content are advisable to maximise the outcomes. On another hand, the case companies have not involved actively enough in dialogues with stakeholders. That hinders conversation flows and reduces total effects of CSC. Last but not least, one implication is identified specifically for aviation industry: new aircraft fleets and the use of renewable energy sources (e.g. biofuels) are the most appealing themes to the audience.</p> <p>Future studies could explore the situation in other industries, social media platforms, and geographical boundaries; or could work on external stakeholder perspective. While this study focused exclusively on environmental aspect, future studies may examine the other two pillars of sustainability, especially social issues. New research could also invest more resources in expanding the studied timeframe and analysing data more exhaustively. Instead of evaluating effects of contents, future studies may examine effects of Web 2.0 platforms' designs and utilities on CSC. Finally, it would be useful to identify correlations (if any) between organisational restructuring and CSC strategy change.</p>	
<p>Keywords sustainability, environmental issues, corporate sustainability communication, social media, social media marketing, aviation industry</p>	
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PREFACE

This paper is the report of my master's thesis research. The research was conducted as the final work of the Master's degree programme Corporate Environmental Management (CEM) at Jyväskylä University School of Business and Economics (JSBE). I have been working as the main author under the supervision from Dr Tiina Onkila, Senior Researcher at JSBE. The main topic of this thesis is the use of social media for communicating corporate environmental issues to external stakeholders.

There have been more struggles for me in pursuing this degree than previous studies. The more I grow, the more challenges I need to overcome. Difficult situations prevented me from following my schedules. Several times, I had to pause the working progress to fix other issues occurred in life. Nevertheless, at this moment, I feel relieved and can enjoy the outcome of this research. Of course I have not walked on this road alone. There are always other people who assist and support me on the way. I am really thankful for that.

First of all, I would like to express my thankfulness to Dr Tiina Onkila, my supervisor for this project, and Dr Stefan Baumeister, my second reviewer for the final paper. Thank you for your guidance and feedbacks.

I would like to express my gratitude to my parents, Nghiêm Thị Phúc Hậu and Bùi Thanh Tài, for being with me through happiness and hardship. They encourage, motivate, and push me to achieve my goals. Ba mẹ đã hy sinh rất nhiều cả về vật chất, sức khỏe lẫn tinh thần để cho con đạt được thành quả như ngày hôm nay. Con không biết làm gì mới có thể bù đắp được những công ơn to lớn ấy, chỉ xin hứa sẽ cố gắng sống tốt, sống có ích để ba mẹ có thể luôn luôn tự hào về con.

Last but not least, I would like to thank Niclas Bergqvist, Lê Huy Quang, Đặng Huỳnh Hải Nghi, Lê Hoàng Khang, and many others, whom I cannot recall right now, for helping and supporting me in different ways during the last few years. They are just like my other families. Tack för allt du gjort för mig! Cám ơn tất cả các bạn rất là nhiều nhé!

"Another stage of my life is coming to an end. I do not hesitate to take my step forwards. Future has a lot of surprises to offer. Everything starts from today."

Finland, December 2018
Bùi Nghiêm Đắc Vinh

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1 INTRODUCTION

1.1 Background

Sustainability is not a new trend in business anymore. Applications of this concept cover various functions of a company. The extents to which companies apply sustainability principles differ. However, no one can afford to marginalise them in doing business anymore. Practicing sustainability, in fact, helps companies maximising their profits and creating positive impacts on shareholder value. (Signitzer & Prexl, 2008) Besides, participate in sustainability reporting/communicating that is matched with stakeholders' needs can provide companies benefits (Gill, Dickinson, & Scharl, 2008). Consequently, sustainability marketing has emerged to assist companies in "building and maintaining sustainable relationships with customers, the social environment and the natural environment (Belz, 2005. Cited by Ulvila, 2014)". One function of it, as in any other marketing practice, is communication.

Communication within sustainability marketing carries distinct tasks compared to its counterparts in other marketing practices. In general, it introduces environmental-friendly products and green activities of a company as parts of the corporate environmental policies. Equally important, it helps educating consumers and promoting responsible consumption. (Ulvila, 2014) However, a lot of previous studies alarmed that customer awareness of corporate sustainability communications is very low, at least for web-based channels. This sometimes creates an interesting paradox where customers demand information about corporate sustainability, but they would not actively look for it. (Dach & Allmendinger, 2014) In that situation, Nwagbara and Reid (2013) emphasised that the way companies communicate their sustainability commitments is critical for their success and legitimacy, especially with new media where "information dissemination and manipulation can be hugely affected (pp. 401)". Tools for corporate external communication are available diversely, from printed reports to websites that are dedicated especially to sustainability issues (e.g. see studies by Lodhia, 2014; and Park & Kim, 2014). In

recent years, social media (or in a more technical term, Web 2.0) has become a prominent one.

Many studies have asserted the importance of social media in doing business and its effects on marketing (e.g. see Jones, Temperley & Lima, 2009; Nwagbara & Reid, 2013; Reilly & Hynan, 2014; Tiago & Veríssimo, 2014; and Williams, Page & Petrosky, 2014; etc.). Corporations are now increasingly using different platforms of social media to communicate their sustainability efforts; and that practice is crucial for them if they want to include sustainability in their strategic agenda (Reilly & Weirup, 2012). In a study conducted in Portugal, it was found out that more than 80% of marketing managers would invest more in activities on social media, either web- or app-based (Tiago & Verissimo, 2014). Nwagbara and Reid (2013) summarised the distinguished characteristic of new media: they diversify and democratise communication and (stakeholder) engagement process. That attribute shapes communication activities for sustainability issues.

Due to its special characteristics, Web 2.0 brings quite a lot of new challenges for companies (see e.g. Harris & Rae, 2010; Gensler, Völckner, Liu-Thompkins & Wiertz, 2013; and Lodhia, 2014; etc.). Business practitioners should keep in minds those distinguished obstacles when dealing with this communication tool. Fortunately, several researchers such as Nwagbara and Reid (2013) and Williams et al. (2014) have listed useful recommendations and advice for companies in utilising social media for their business.

The development of Web 2.0 as an additional communication tool is a significant research area (Jones, Temberley, & Lima, 2009). Studies and research so far have been done in perspectives of using this tool in different segments of business. Some of them focus on sustainability. Yet the scopes of sustainability activities in those studies are rather general and vast. There is arguably a lack of focus on each element of the fundamental *triple bottom line* from sustainability theory: economic, social, and environmental. That is a pity, since studying on a specific element of sustainability is not a new approach in academic and business worlds. Besides, there are strong justifications for focusing on the environmental aspect of sustainability. (Rashid, Rahman, & Khalid, 2014) For example, within oil and gas industry in North America, Asia, and Europe, companies place the most emphasis on environmental reporting (Gill et al., 2008). In America, studies found increasing support for environmental issues across age, education, and socioeconomic levels. Environmental aspects affect the public perception of organisation; it is considered corporations' responsibilities and increases positive attitudes of people towards companies. (ABC New/Washington Post/Stanford University, 2007; Bockman, Razzouk, & Sirotnik, 2009; Krosnick & Bannon, 2007; and Cone, 2007. Cited by Ciletti, Lanasa, Ramos, Luchs, & Lou, 2010.)

In short, sustainability is a crucial part of doing business nowadays. Stakeholders demand more and more sustainable and ethical activities from companies. They have also been more active in searching information about a company's behaviours, and easily spreading the information to others via the Internet. Therefore, communicating about sustainability topics and initiatives, especially environmental-related, has become extremely important. Challenges

for communication departments have even increased with the emerging of social media platforms. There is arguably a high demand for studies to shine the light upon this area of theory and practice. Based on those thoughts, this study aims to explore the use of *social media* in promoting corporate *environmental* activities to *external stakeholders*.

1.2 Research Problem and Questions

The main research problem of this thesis is *communicating corporate environmental issues to external stakeholders via social media*. Based on the mentioned research problem, this study is designed to answer the following question:

1. *How companies have been communicating environmental issues with external stakeholders via social media?*

Ultimately, the study is expected to produce managerial implications and suggestions for companies to use social media in a more effective and efficient manner. In other words, it should be able to answer the following question:

2. *How could companies improve their communication activities with external stakeholders about environmental issues via social media, especially to promote their own initiatives and efforts?*

This thesis has an intention to choose *aviation* as its studied subject. The reason justifying this choice is that airlines are often considered as major pollution-contributors. Bhattacharya and Sen (2004) contended that “some industries [...] are more vulnerable to criticism because of the inherent nature of their operations [...] and that’s why they] may need to engage in higher levels of [sustainability] activity to appease a variety of stakeholder groups (pp. 23)”. It would be interesting to learn how companies in such difficult situations promote their environmental efforts via social media platforms. Besides, transport industries are told to be lagging in sustainability reporting compared to sensitive sectors such as mining, forestry, and automotive. That might be a result of less government and public scrutiny on transport companies. (Moore, 2014) This study, however, did not put e.g. mining corporates in comparisons with aviation companies. It only attempted to examine sustainability communication activities of the chosen industry and reveal the current situations. I.e. comparisons were drawn only among case companies.

1.3 Research Methodology

This study is expected to be an *empirical research*. Furthermore, it will combine *qualitative and quantitative methods*. The research problem calls for practical evidence; and to answer the research questions, both information and data need to be collected. Analysing information requires qualitative techniques. Similarly, processing data requires quantitative approaches. Information and

data will be collected from a selective group of companies in the aviation industry. This group is called *the sample population*.

The sample population includes several commercial airlines that are *originated from and operated in Nordic countries* (Denmark, Finland, Iceland, Norway, and Sweden). The autonomous regions of the aforementioned countries are also included in this study's scope. This scope is based on Gill et al. (2008)'s suggestion that there is a need for a geographical perspective regarding sustainability reporting (communicating). Besides, this scope allows the author to conduct his research properly, as it is neither too wide nor too narrow for the author's capability and resources. However, while Gill et al. (2008) did a comparative research to show the contrasts among different continents in sustainability reporting, this study attempts to show the contrast among companies, not among the countries of origin.

The researcher made a short list of candidate corporations and did a primary research to see how active those candidates are on social media. The long list included five corporations. After a series of primary research and trials (which is discussed more in section 3.1), a group of viable samples was selected for the thesis' data and information collection process. The studied sample includes: *SAS (Scandinavian Airlines System), Finnair, Icelandair, and Norwegian Air Shuttle (ASA)*.

The author collected information and data from the sample population on a *longitudinal basis*. That means the information and data collected covers a specific period of time. This approach is suggested by Lodhia (2010), for its ability to capture the communication potential of the world-wide-web. The timespan of this research is 24 months, which conducted within a real-time studying period of one (01) month. There was also a post-study period of two (02) weeks where the study's final report was revised if needed. The main purpose of this post-study period is to see if the findings still hold true and stay reliable. However, information and data collected from the post-study period do not necessarily have to be included in this final report.

1.4 Structure of This Master's Thesis Paper

The flow of this research paper is quite simple. Firstly, the author discusses related theories and studies as backgrounds. Then the research methodology is introduced. After that, the paper inserts all the findings from the conducted study. This follows by more discussions and analyses to answer the research questions. The author also identifies managerial implications and advice, accordingly to the research's findings. Finally, the paper concludes the whole study process and its outcome, as well as provides ideas for future research.

Theoretical framework chapter mentions and discusses previous theories and studies that are foundations for this research process. Three main topics are (1) corporate sustainability communication, (2) social media & social media marketing, and (3) the interconnection between those two aforementioned topics. The author tries to provide readers with concise and precise information

about the terms as much as possible, without confusing them by too many theories. The chapter is built up from basic theories about sustainability, marketing, social media, and communication as independent fields. Then it attempts to intertwine the fields for business applications. After the theoretical chapter, the readers should be able to grasp the definitions of relevant terms and how everything is connected in real life for promoting sustainability, especially environmental issues.

Next, this paper introduces the research methodology. The methodology is created from various approaches of various sources. The author did some reading upon studies in similar branches and learnt how those studies were conducted. In this chapter, the readers will get familiar with the data collecting and analysing methods of this study. Besides, they can also get a clear picture of how the whole research process looks like. Reliability, validity, and limitations of this research are also examined in this chapter carefully. At the end of this section, short introductions about the case companies are included.

After that, the author presents all the findings from his actual research on the topic in the research finding chapter. This chapter contains the data and information, which were collected during the research period. The data is presented first based on social media platform perspectives, and then separately for each sample company.

This paper ends with a discussion and conclusion chapter. Firstly, the author summaries the whole study, both theoretical and empirical parts. Next, the author applies the findings to answer the research questions. It is expected that at this point the readers may gain an understanding about the topic from real life cases. Previous studies' findings are mentioned to produce comparisons. After that, the author attempts to suggest potential suggestions for management in the fields of sustainability, communication, and social media marketing, etc. The author hopes that those suggestions will contribute to the academic richness of the fields, as well as assist companies not only in the aviation but also in other industries in their day-to-day business operations. Last but not least, the author self-evaluates his work. Limitations of this study are mentioned in favour of future studies. The author hopes that this research could ignite an explosion in the academic world about the studied topic, as well as more and better studies will be conducted in future.

2 THEORETICAL FRAMEWORK

2.1 Corporate Sustainability Communication (CSC)

It would be more prudent to briefly introduce the concept of sustainability and corporate sustainability before dwelling in the realm of corporate sustainability communication. One challenge for sustainability advocates is that approximately 95% of the world population has never heard about the principles of sustainable development. Moreover, many societal influencers have used the term in an undifferentiated and almost inflationary way. This brings about difficulties for communication about sustainability issues. (Brickwede, 2003. Cited by Signitzer & Prexl, 2008)

The term “*sustainability*” started to get attentions from worldwide nations at the Stockholm Conference (United Nations Conferences on the Human Environment) in 1972. That was the first time the term was discussed in the way as it means nowadays. Even though the action plan has never been followed, this event marked a global awareness of sustainability issues. Two decades later, The Rio Conference (United Nations Conference on Environment and Development) in 1992 was the most important consequential result of the Stockholm Conference. Representatives of more 130 nations signed on the Convention on Climate Change and reached consensus on Agenda 21. (Moore, 2014)

Sustainability is complicated to comprehend and practice because it “is informed by the integration and balance of economic, natural, and social capital, as well as an ability to meet the needs of stakeholders both current and future, with the awareness that one's actions affect others, both individually and collectively (Ciletti et al., 2010)”. Even though sustainability's statements, goals, and action plans are mostly non-binding, companies have been active on adopting and adapting sustainability into their businesses. Corporations became more eager to show that they are good “Earth-citizens”.

On a narrower perspective, corporate sustainability can be defined as “*a relative concept that describes the planned and strategic management processes of working towards a balance of economic, social, and environmental goals and values*”

(Signitzer & Prexl, 2008, pp. 3)”. Savitz and Weber (2007) defined two group of business cases for sustainability: (1) the hard case, where sustainability influences costs and economic benefits; and (2) the soft case, where it generates positive gains from enhanced reputations, satisfied employees, happy customers (hence creating goodwill), and the leading position within the industry, etc. Companies are highly motivated to engage in sustainability because it helps them to, among many things, build stronger relationship with stakeholders, create positive word-of-mouths, minimise negative effects of bad publicity, (Bhattacharya & Sen, 2004) uphold licence to operate, enhance trust, credibility, and corporate reputation, (Signitzer & Prexl, 2008) and influence service quality perceptions as well as customer affective attitudes (Rashid et al., 2014).

To be considered sustainable by stakeholders is not an easy task. Different stakeholder groups expect differently from a company’s sustainability performances. For examples, investors are more interested about revenues, and humanitarian organisations demand more actions on social issues. (Signitzer & Prexl, 2008) On environmental aspects, offering “green products” alone is not sufficient to be positively perceived. Companies must embrace the concept of “holistic concern”, which includes also corporate cultures, policies, and practices, etc. (Rashid et al., 2014) Moreover, von Kutzschenbach and Brønn (2006) found out there might be even cases of “false consensus” between different involved parties upon the environmental dimension of sustainability. This situation would considerably complicate the communications among organisations and stakeholders. Their study was conducted merely within the forest industry in Europe but could hold generalizability toward other fields in other locations as well. Despite of all those obstacles, companies nowadays integrate sustainability into their operations exhaustedly, not only as a merely defensive tactic but core corporate value and strategy (Signitzer & Prexl, 2008).

McDonagh (1998) introduced the concept of *sustainable communication* as he was attempting to relate sustainability issues to marketing communications. He suggests that (pp. 599):

“Sustainable Communication is an interactive social process of unravelling and eradicating ecological alienation that may occur between an organization and its publics or stakeholders. Based on the notion of totality or holism it embraces conflict and critique through information disclosure, access to and participation in organizational policies and processes and structures allowing open-ended dialogue. Thus by use of 'green, eco or environmental (marketing) communications' the organization builds trust in the minds of those in society and permits the approach of a Utopian situation of high levels of environmental consciousness and consensus as to how humankind should exist in order to engender ecological sustainability.”

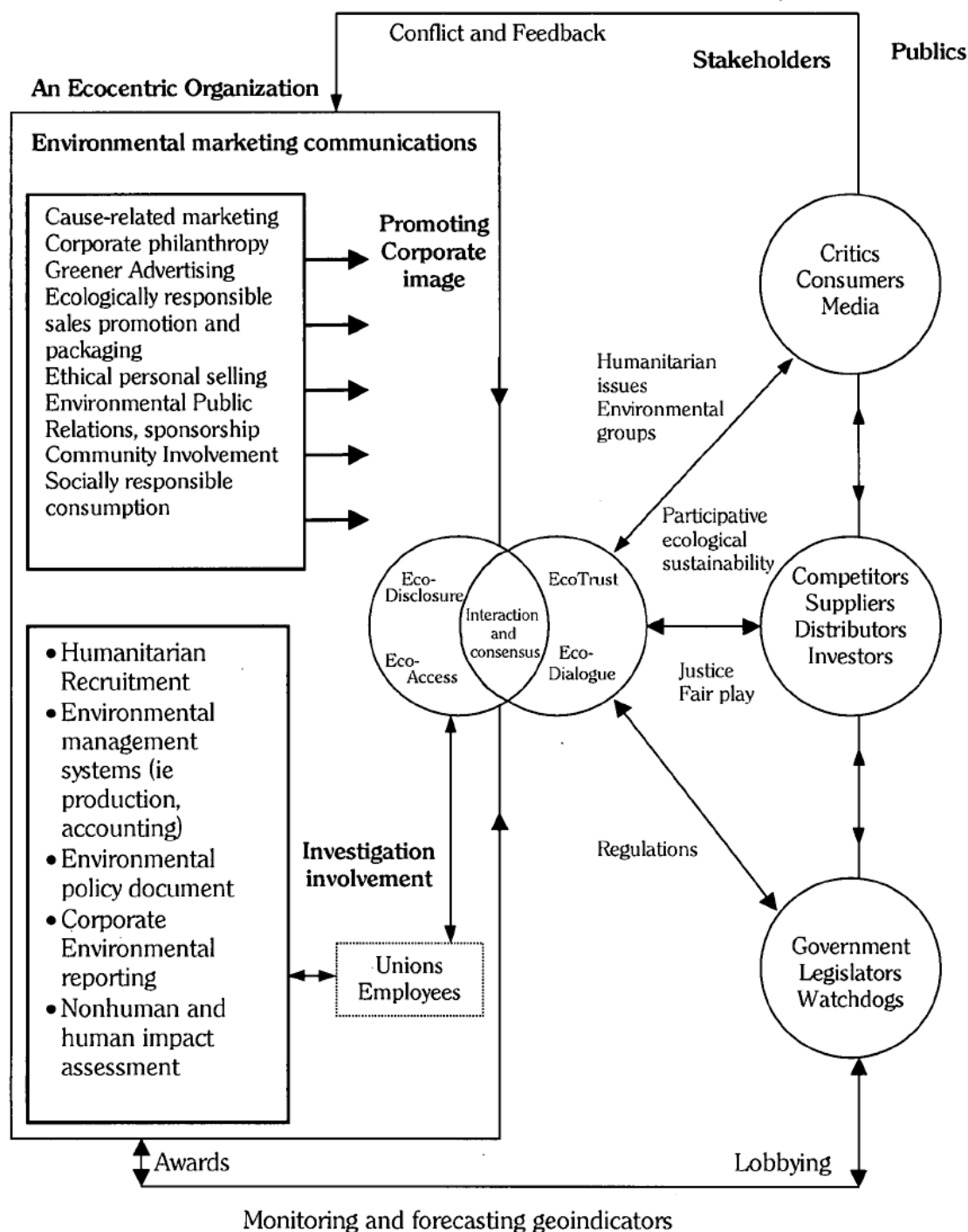


FIGURE 1 Process of Sustainable Communication (McDonagh, 1998, pp. 601)

McDonagh also drew up the process for his concept, as shown in Figure 1. The process included four principles of sustainable communication. They are Ecological Trust, Ecological Assess, Ecological Disclosure, and Ecological Dialogue. Essentially, McDonagh argued that sustainable communication aims to build trust between corporations and the public on ecological issues. It can only do that through open disclosure of information and the freedom of people in assessing the information. Besides, on-going dialogues should be used to

facilitate the info-exchanging process. Furthermore, McDonagh discussed the role of Promotion principle in sustainable communication, even though he did not officially group it with the other principles. Here McDonagh highlighted the fundamental difference of sustainable communication: instead of encouraging people to consume more (like traditional marketing communication does), it should incorporate the “less for more” and “basic human right” principles. This is a major development McDonagh made for marketing communication. As he also argued, “organizations need to be involved in facilitating positive ecological change in their own and citizens' behavior (pp.605).”

A decade later Signitzer and Prexl (2008) introduced the concept of *Corporate Sustainability Communications* (CSC). This is a step further than the work of McDonagh, or more focused on corporation perspective. Signitzer and Prexl described CSC as a branch of corporate sustainability, as illustrated in Figure 2. It is worth noting from this classification that *CSC should be considered as one function of CS rather than an additional part of public relations*. This is a revolutionary assertion because a lot of researchers still consider CSC as a dimension of PR/marketing (e.g. see van Ruler & Vercic, 2005).

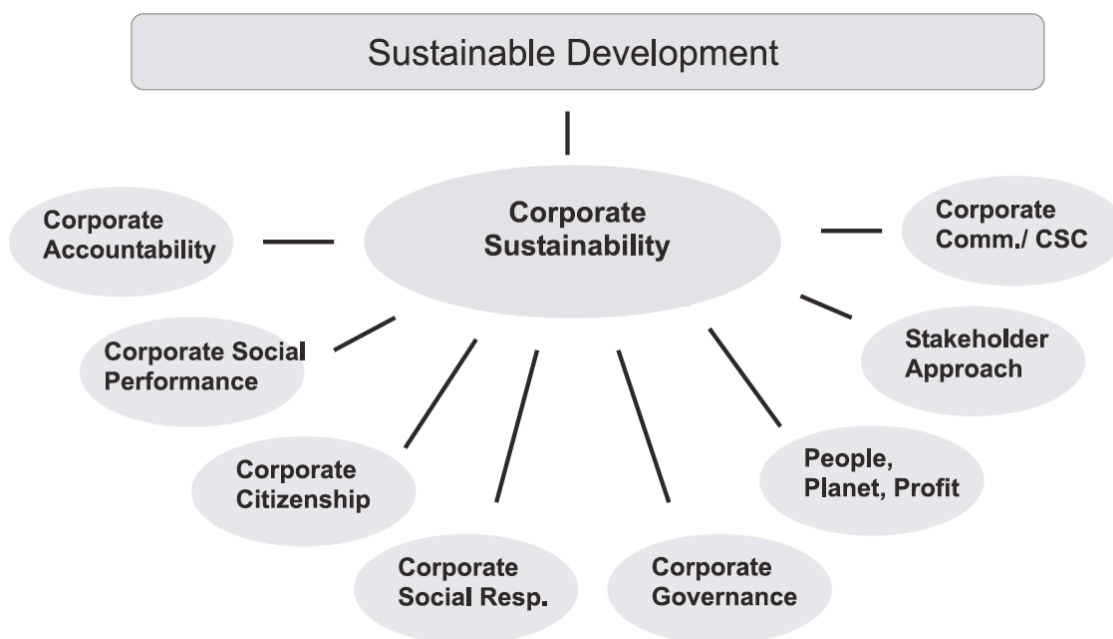


FIGURE 2 Corporate sustainability and other related terms (Signitzer & Prexl, 2008, pp. 4)

Signitzer and Prexl (2008) firstly mentioned the development of ‘social reports’ from the 1970s as the first form of CSC. However, most of those reports were used merely as an advertising instrument, which lacked honesty and transparency. Therefore, the use of them discontinued quickly. Failure of the 70s social report forced business to re-examine relevant business, marketing, and public case for CSC. In their paper, Signitzer and Prexl mentioned all three

groups of public case for CSC. However, for the purposes of this study, only the case for marketing is discussed here.

According to Signitzer and Prexl (2008), the key question when one seeks marketing case for CSC is: "What is the contribution of CSC to the achievement of the marketing goals of sustainability management (pp. 6)?" In their view, CSC activities should at least "build relations with customers to enhance sales of sustainable products (pp. 7)". This arguably is the main purpose of CSC. Another (and broader) purpose of CSC is increasing employee awareness and sensitivity towards sustainability. That would help to create more sustainable production processes and build up a corporate sustainability culture. However, due to limitation and scope of this study, the author cannot afford to find out how CSC has enhanced sales for the sample companies, nor how CSC affects internal stakeholders. This study focuses mainly on how corporations using social media to manage external stakeholders' relationship on sustainability issues, specifically on environmental aspects.

There is one problem when companies assign CSC for marketing and public relations (PR) staff. Those professionals tend to consider CSC as a cosmetic image for companies (Anderson, 2005. Cited by Signitzer & Prexl, 2008). They also might not have enough understandings and knowledge upon sustainability issues (Signitzer & Prexl, 2008). Besides, as mentioned earlier, a large amount of people has never really known about the principles of sustainable development, which creates a big problem for marketers. They must communicate topics and issues that might not be understood correctly.

One important thing about CSC, which Signitzer and Prexl (2008) discussed, is its non-advertising characteristic. CSC, in other words, should not be used as a resort for advertising, but as a platform for public debates. Consequently, companies must use *two-way dialogues* based on "mutual understanding, trust, confidence, and equal rights for all participants (pp. 14)." This is very similar to the characteristic of social media marketing (which will be discussed in the next section). Ultimately, "the stakeholder groups will influence the organization as much as the organization influences the stakeholder groups. Effective communication requires the communicating parties to have an accurate picture of each other's perceptions of the issues under consideration (von Kutzschenbach & Brønn, 2006, pp. 305)." It is really appropriate to conduct CSC on social media platforms. Furthermore, there exists a need for studies that build linkages between CSC and other conceptual tools, models, and approaches to corporate communications. That is what this study attempts to do: figure out the connection between CSC and social media as communication channels.

Another related concept of CSC is corporate social responsibility (CSR) communication. However, Nwagbara and Reid (2013) asserted that this type of communication only includes social and environmental concerns. They are just two out of three pillars of sustainability. The authors later also claimed that CSR communication is ultimately a foundation for the development of sustainability communication (which naturally takes in account also economic aspect). The two types of communication are not only useful for management to keep in touch with stakeholders, but also acting as potential tools to evaluate

companies' commitments to sustainability issues. To achieve a full communication model regarding sustainability, companies should first manage their CSR communication properly. (Nwagbara & Reid, 2013) Confusingly, Lodhia (2014) defined sustainability communication as "the communication of social and environmental issues by an organisation to its stakeholders (pp. 142)". For some reasons unknown, the author omitted economic issues from sustainability. In the other hand, Du, Bhattacharya, and Sen (2010) considered CSR communications simply as messages that a company send to stakeholders regarding its societal cause(s). In this sense, CSR communication only covers one pillar of sustainability (social). However, in their article, Du et al. discussed few examples of CSR communications that concerned environmental and sustainability initiatives. These angles of looking at CSR and sustainability communications are overlapping and quite redundant. There is a need for a concise, uniform definition of CSC. Therefore, in this thesis, *CSC is defined as a collection of all communication activities of a company to communicate with its different stakeholder groups about sustainability issues.*

The author would like to borrow von Kutzschenbach's and Brønn's words (2006, pp. 320) to help readers understand more about CSC's goal and requirements:

"Sustainability communications has as a goal to improve the relationship between the organization and its publics by not only changing what people know and how they feel about sustainable development issues and each other, but by increasing the accuracy of their perceptions of each other's views. Sustainability communications requires a systematic approach in which all the communication activities are directed toward achieving increased understanding between the organization and its relevant stakeholders about the issues."

There are many factors that affect the CSC process. Those factors could be divided generally into two groups: internal and external factors. First, a company's reputation has a great influence on its attempts on CSC. The reputation also includes the company's industry, and records on sustainability activities, etc. (Du et al., 2010). Interestingly, companies with neutral reputation are likely to gain more business benefits from [CSC] than companies with high reputation. This is due to the phenomenon of positive disconfirmation. (Strahilevitz, 2003) The second factor is how a company positions itself on sustainability issues, i.e. how companies choose their sustainability initiatives. Appropriate positioning helps to amplify the effects of CSC, increase persuasiveness, and develop favour towards a company (Du et al., 2010).

Stakeholder type dictates how a message should be crafted. Different groups of audience have distinctive expectations, information needs, and (therefore) responses. One individual can even have multiple relationships with a company. Besides, people tend to pay more attentions to issues that they support. That means the audience read more on personal-relevant topics. Companies may influence this factor by provide more information and explanations about a certain cause so that stakeholders can widen their knowledge and understanding, which leads to attachment and support to the cause. Marketing research on sustainability issues can also be used to find out

which issues/causes matter the most to targeted audience. This activity should be conducted regularly to keep in touch with stakeholders' perspectives. (Du et al., 2010) In their paper, Du et al. (2010) also mentioned the concept of "value orientation" as an external factor that affects CSC activities. However, that concept is deemed to be little relevant for this study. Therefore, the author would not discuss it here.

CSC is a delicate task. Stakeholders always demand transparency on corporate sustainability activities, but they usually lack the motivation to engage in the dialogues (Du et al., 2010). The specific industry of a company may also influence the practices. For example, within the sport teams participating in North American major leagues, social aspects are focused the most, environmental issues receive moderate care, and economic matters are hardly discussed. This phenomenon is due to very special situations of the sport industry in a defined geographical region. (Ciletti et al., 2010)

Different issues also require different approaches. For environmental tasks, there are two groups of tasks: "*technical*" and "*the others*". In the first group, there are measurements for companies to report and outside parties to assess objectively. The communication choices for this group are quite straightforward and unproblematic. However, for the other group, there are no agreed-upon standards, or there are still a lot of discussions around the issues. Therefore, companies may find it considerably challenging to communicate their environmental initiatives within this group to the stakeholders. An effective communication strategy demands both internal and external approaches (reflecting, negotiating, contracting, motivating, etc.), so that companies could improve accuracies of the shared views among involved parties as well as create stronger agreements among these parties. In that sense, a successful strategy should improve the transparency and credibility of an organisation. At the same time, it should improve stakeholders' understanding of sustainability issues and especially the organisations' initiatives related to those issues. (von Kutzschenbach & Brønn, 2006)

2.2 Social Media & Social Media Marketing

Today, social media is everything. It is partly the result of human beings' desire "to connect, converse, create and collaborate with each other (Ang, 2011, pp. 151)". Jones et al. (2009) described this tool as "quasi social interactive chaos whereby ideas and opportunities emerge amidst self nurturing communities shrouded by an aura of collective behaviour and populist stimulus (pp. 935)"; while Kaplan & Haenlein (2010) considered social media "*a group of Internet-based applications that built on the ideological and technological foundations of Web 2.0 [...] [that] allow the creation and exchange of User Generated Content (pp. 61)*". This new generation of social engagement has been growing so fast that it changes human beings' activities, habits, and interactions (Tiago & Veríssimo, 2014). It has become "a tool for customer and citizen empowerment [...] as it is open for

all and it creates an environment in which freedom reigns (Jones et al., 2009, pp. 928 & 930)".

Social media are so important that many claimed that if companies do not participate in any of the platforms, then they do not exist online anymore (Kaplan & Haenlein, 2010), because the question is not about *if* people would join social media, but *when* they will do that and *on which* platforms (Tiago & Veríssimo, 2014). Therefore, social media has become an "excellent vehicles for fostering relationships with customers (Vries et al., 2012, pp. 83)". Besides, when many other competitors have already made their presences online, it becomes a pressure on companies to step in the game too (Tiago & Veríssimo, 2014). As a result, spending on social networking site worldwide reached USD 4,3 billions in 2011 (Williamson, 2011. Cited by Vries et al., 2012, pp. 83).

Social media has become one piece of corporate strategic management. However, what does it mean by "social media strategy"? In a straightforward and theoretical manner, one may say that social strategy is simply the tasks of configuring and setting activities on social media platforms, and through that creating values and competitive advantages (Ang, 2011). Many authors also mentioned social media as a crucial tool for corporate reputation management and branding (e.g. see Jones et al., 2009).

The new technologies of Web 2.0 and its widely global-scale availability shifted strategies for digital marketing, which is already different from traditional marketing in many aspects (Tiago & Veríssimo, 2014). Social media marketing offers customers a channel to promote their favourite brands or companies via various social media venues (Russell, 2009). That is a new face of the traditional "word-of-mouth" marketing. There is no wonder why companies are more and more eager to join and become super active in a vast array of social platforms from Facebook, Twitter, to Pinterest. That is even the case for top-tier corporations such as those included in Fortune Global 100 list (Burson-Marsteller, 2012). Social media, in other words, is considered "the new marketing landscape for businesses to engage with their communities of customers wherever they congregate (Solis, 2007)". However, the insights for this new frontier are quite limited; hence there is a need to conduct more research in the area of social media (Vries et al., 2012).

Every company, of course, uses social media marketing differently. Tiago and Veríssimo (2014) built a matrix of digital engagement (see Figure 3) based on 24 indicators, which belong to two dimensions: *Benefit Perception* and *Digital Marketing Usage*. The researchers then classified companies into four profiles, starting with *Engagement*, where companies have high digital usage and recognise the benefits of it. Most companies in the study, which belong to this profile, are from IT, telecom, retail, and financial service sectors. In this profile, there are two groups of companies: *Digital User* and *Interactive Users*. Both groups appreciate digital marketing, but Interactive Users are taking advantages of more digital tools. The second profile is *Qualification* with its distinguished companies group known as *Digital Learners*. Those companies invest a lot in digital marketing but do not expect much benefit in return. The third profile represents companies that have weak digital usage and at the same time low benefit perception. Companies within this profile are named 'Digital

Laggards'. Theoretically bizarre, the last profile is dubbed '*Dead-Road*', in which companies have a very high expectation for returned advantages from digital marketing yet put little resources into doing it. In their paper, the authors did not find any participants fall into this profile. However, it is totally possible that in practice there are some companies who might be classified as *Dead-Road* digital users. In conclusions, Tiago and Veríssimo advised marketers to either (1) push their companies to be *Interactive Users*, or (2) utilise more social media platforms to increase the companies' digital marketing activities.

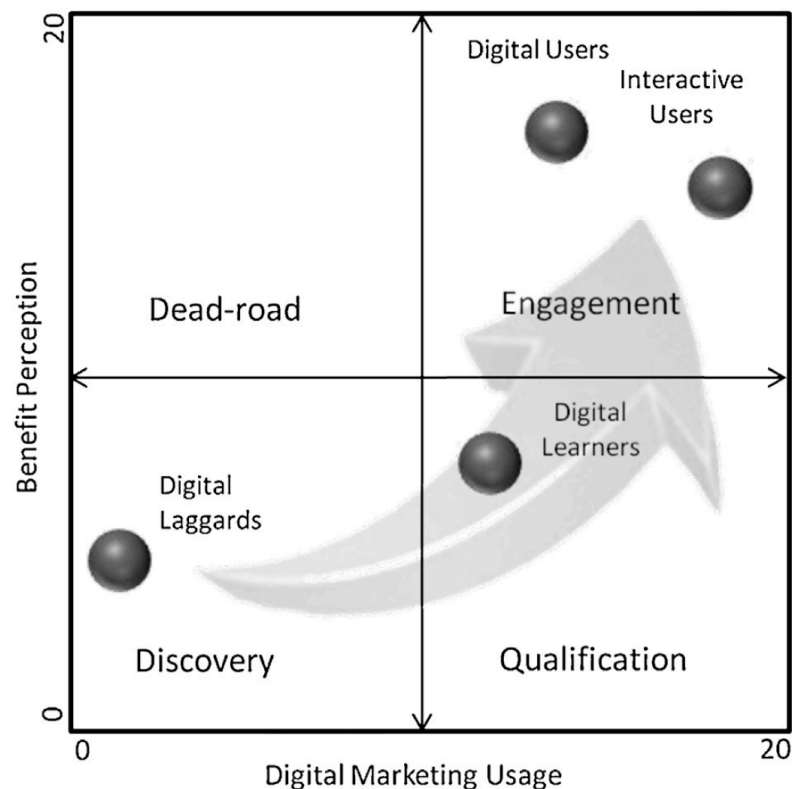


FIGURE 3 Digital engagement matrix (Tiago & Veríssimo, 2014, pp. 707)

Besides the official accounts, companies can do branding through community groups on social networks, mostly on Facebook. A group can be friendly, hostile, or anything in between the two extremes towards a brand. The groups might also be built and monitored by the brands themselves. In this case, they are brand pages. (Park & Kim, 2014) On those brand pages, companies can generate brand-related posts that may contain stories, pictures, and videos, etc. Brand fans (customers, consumers, or others) can interact with those posts, using different methods, depending on the platform. (Vries et al., 2012) Nevertheless, the participations of companies should be based on voluntary and proactive principles as usual. Companies may try to offer customers with anything they need, but not in forms of advertising or selling. The appropriate approach is engaging with customers by messages and comments, informative and educational posts, and entertaining contents, etc. In other words, brands' marketers should act as fellow net citizens, not as superior

and distant outsiders. Through those communities, companies have an opportunity to strengthen the brand-customer relationship by providing people with various benefits, mainly belong to categories such as information, economic, social, and hedonic. In return, companies might expect better customer relationships, more positive word-of-mouths, and even a chance to recruit new customers. Any efforts, which brands put into their communications with customers via social platforms, are appreciated. Their online presence has become an important criterion for customers' judgements on their overall marketing performances. (Park & Kim, 2014)

However, the real effects of social media marketing are up for debates. Park and Kim (2014) did not find empirical data support connection between brand's social networks and brand relationship quality. For one, it seems that brand pages do not offer customers efficiently with information and economic benefits. The authors also could not offer any proof that positive word-of-mouths would increase sales or revenues. On contrary, Bagozzi and Dholakia (2006) asserted that consumers who follow a brand's page tend to be loyal and committed to the company. They are also more open to get information about the brand. In additional, Dholakia and Durham (2010) claimed that those consumers tend to visit the brand's stores more, talk more positive about the brand (create good word-of-mouth), and be more attached to the brand (compared to consumers who are not fans of a brand page).

When business utilises social media in communications with customers, it should be kept in mind that this platform is not about direct advertising and selling, but more about participating, sharing, and collaborating (Kaplan & Haenlein, 2010). The conventional "broadcasting" and "monologue" approach no longer exists. Web 2.0 is a place built by and for "socialcasting" and "dialogue". (Jones et al., 2009) Moreover, Ang (2011) asserted that social media users are not necessarily customers. They value equal relationship and do not want anything that is commercial related embedded in their online social space. This can be a real challenge for marketers to push their promotions. People who are actively engaging in online communications are more and more sophisticated, sceptical, and demanding. They ask for transparency and accountability from companies if those ever want to join in the conversations. (Jones et al., 2009)

Bhattacharya and Sen (2004), on the other perspective, noted that in general premium prices might be accepted by customers, but only if the extra money (or at least a part of it) is used for "CSR-specific activities" (i.e. sustainability activities). Therefore, both format and content of sustainability communication are important, and they should be supported by proper corporate sustainability initiatives.

Russell (2009) warned that social media have a distinguished "aftereffect" on advertising, where participants' comments persist through a long period of time compared to traditional print and TV ads. Therefore, social media content can become either an asset or liability. Lodhia (2014) also mentioned this effect (albeit only with website contents) by the name "double-edged sword". That is why marketers should focus on providing long-term benefits and develop more meaningful and persistent relationships with the customers instead of one-time

engagement (Park & Kim, 2014). This long-term “digital relationship” must be based on initiatives that focus on co-creating content and meaning (Tiago & Veríssimo, 2014), because as discussed earlier, that is the fundamental characteristic of Web 2.0. However, Ang (2011) warned companies about one-to-one vs. many-to-many relationships. In context of social media, even though companies may attempt to build and maintain relationships with stakeholders, the dialogues are always included many participants. The conventional view (one-to-one) of customer relationship marketing (CRM) is not relevant anymore. When people engage in online discussions, they are not engaging only to the company (representative) but all users, in real time. They simply consider a company’s social media account another online individual; or may even neglect it and do not want anything to do with it. The tasks to create and maintain relationships with customers therefore become more complicated.

2.3 CSC in the Age of Social Media

New types of media have re-conceptualised communication models and particularly CSC. They offer stakeholders more opportunities to connect and engage in direct communication that impacts sustainability issues. This helps smoothen the corporate-stakeholder interacting process. (Nwagbara & Reid, 2013) Table 1 gives a quick summary of several impacts new media can make to CSC. Moreover, online communication platforms are usually more economical than printing in the long run, and social media is even cheaper if not free for companies to use. Companies need much less investment for social media marketing compared to traditional approaches (Tiago & Veríssimo, 2014). This is a critical influence for companies to employ web-based sustainability communication (Lodhia, 2014).

Sustainability report in *print format* is still considered important medium for several companies to communicate with their stakeholders, due to preference, accessibility, and other reasons (Signitzer & Prexl, 2008; Du et al., 2010; Lodhia, 2014). Among industries, forestry, pulp and paper, mining, and automotive are leading in sustainability reporting, while trade and retail, as well as transport, are lagging. This could be the result of greater scrutiny from stakeholders upon sensitive sectors. (Moore, 2014) A lot of standards and guidelines for sustainability reporting have been established, such as the all-dominant Global Reporting Initiative (GRI), the Dow Jones Index, the SA 8000, and some from the International Organisation for Standardisation (ISO), etc. The strict rules that dictate sustainability reporting make this form of sustainability less flexible. (Moore, 2014) In order to pass harsh auditing, companies might lose touch with their targeted audience, because not everyone is interested in/knowledgeable at reporting terms and hard facts. The common public only wants to learn about issues that are close to them, something easy to feel and connect.

TABLE 1 New media impacts on CSR Communication (Adopted from Nwagbara & Reid, 2013, pp. 410)

Communication Impact	Achieved by	Corporate Impact
Insight	Monitoring of communications channels & strategies used by stakeholders	Detailed profile of stakeholders & firms, as well as ability to form social networks and groups
Acceleration	Access to channels offering immediate & instantaneous communication on CSR at minimal costs	Ability to accelerate impact and deliver, especially timely and rich information on CSR & sustainability
Depth	Multiple channels offering different media options across diverse stakeholders & platforms	Need to create and deploy multiple processes to simultaneously meet needs of diverse stakeholders on CSR communication
Issue Management	Immediate feedback from stakeholders	Need to be able to proactively respond and manage as and when needed, recognising CSR regulations & requirements
Democratisation	Merge of formal and informal communications via social media, as well as breaking of monopoly of traditional media	Stakeholders interact across media diverse channels with stakeholders, requiring clear guidelines and procedures on CSR & sustainability communication

The World Wide Web can facilitate sustainability reporting in better ways than printing methods. Gill et al. (2018, pp. 257) inserted that “[the WWW] provides firms with the opportunity to circulate topical information to multiple stakeholders, to engage stakeholders in an interactive dialogue and assists in the creation and maintenance of a positive corporate reputation with the ultimate goal of a more sustainable future”. Consequently, the use of *websites* for sustainability issues has become popular. However, most of the time they are mere identical versions of physical reports. Companies only change the web contents as an ad hoc resort when something happens and the need for communication emerges (Lodhia, 2014). That is arguably a waste of resources. Social media fill in the gaps. Online social platforms are easy to use (for both companies and stakeholders), cheap, and time-sensitive. Companies need not to pay a lot of money to uphold a social media account like with websites, while they can engage in real-time conversations with stakeholders. Nwagbara and Reid (2013) concluded in their paper: “In modern time, organisations that want to be relevant and successful need to take seriously the opportunities offered by new media for sustainable business practice (pp. 413).”

McDonagh (1998) predicted that “[in] the future the ability to get publics convinced of the ecological worth or value of the organization will be increased as publics can air their views directly to members of the organization and see how the organization reacts (pp. 603)”. That sounds just like the way stakeholders are doing nowadays on social media towards corporate environmental issues. Through social media, consumers monitor the responsibility of a company’s operations and give feedback to the company

(Finnair, 2018a). Companies should open up the communications and participate actively in more media platforms where they could advance further their sustainability agendas (Nwagbara & Reid, 2013) and turns consumers into their advocates (Du et al., 2010). Social media is a compelling approach, because interactive capabilities are needed in order to keep in touch with stakeholders, and timely communication is a crucial element for CSC (Lodhia, 2014).

The advantage of *social media* for CSC may partly lie in the fact that in communications, the less controllable the communicator is, the more credible s/he might become in the audience's eyes. More specifically, using non-corporate channels would trigger less scepticism against the messages. (Du et al., 2010) Companies have little to none control over the contents that are generated every second on *Web 2.0 platforms*. While marketers can attempt to navigate the dialogues, the task seems impossible. Some sources, for example Wikipedia, do not even allow commercial entities to edit their contents. Even if business accounts on social media might be considered corporate channels, in the end companies do not own the platforms. They must play by the rules that applied for everyone. Therefore, the audience get a sense of fair play, which in turn builds up reliability of the information. The lack of control over communication process turns out to be an opportunity, but only if companies handle it wisely.

Web 2.0 is highly social. Hence, the main goal for companies when participating in these platforms is to be considered socially responsible by stakeholders (Morsing & Schultz, 2006). To be perceived like that, companies should take in accounts shared views, ideas, and interests of all stakeholders (Nwagbara & Reid, 2013). References and information from third parties and, such as sustainability organisations and NGOs, could positively affect customer perceptions. Partnerships and cooperation with those institutions also enhance a company's image. A cosmetic and beguiling appeal should be avoided. (Dach & Allmendinger, 2014) After all, companies must sincerely care about people's concerns and treat them wisely.

Some scholars are sceptical about the (assumed) positive influences of online CSC. For example, Dach and Allmendinger (2014) concluded that using web-based CSC could not really influence customers' views about corporate sustainability images. At the same time, there was no clear sign of competitive advantages or financial benefits for the companies. This is mainly due to the fact that the already-perceived image of a company has stronger influence on people's perceptions. Website content can only play a minor role in this aspect. This is not new. Bhattacharya and Sen (2004) had already adjudged long time ago that customers feel good to know about companies' good deeds, but it doesn't mean that they would buy more from the companies. Nevertheless, Dach and Allmendinger (2014) did not test the interdependency between low level of awareness and accessibility and the lack of desirable effects. There might be a causal relationship remained unseen. By increasing their presence on social media (wider coverage and higher frequency), companies could arguably see more benefits from CSC, or in this paper's context, CSC via social media platforms. These benefits of online CSC heavily depend on whether organisations could communicate with stakeholders in a trustworthy manner.

They should approach CSC on the WWW as a method of information dissemination and disclosure, not advertising and persuasion. (Duncan & Moriarty, 1998. Cited by Gill et al., 2008) Dach and Allmendinger (2014) also admitted that there might be potential influence of online CSC on consumer; and more studies need to be conducted to confirm that premise.

As mentioned thorough this chapter, there are many research works on the roles of CSC and social media (separately) in business practices. Many of them focused on either web-based CSC or social media communication in general. However, there is a lack of studies scrutinising specifically *the applications and benefits of utilising social media for CSC*. This paper would like to build the bridge by finding out how corporations have been communicating environmental issues to external stakeholders via social media. The author also attempts to propose some managerial suggestions of how companies could improve their online communication activities.

3 RESEARCH METHODOLOGY

There are two main models for a research process: deductive and inductive. *This research employed the deductive strategy.* Deductive strategy starts by identifying the research problem, followed by theory reviews. After that, researchers gather evidences and data in order to test the reviewed theories. Testing phase is done when researchers analyse and interpret all data they have collected. In general, from an assumed position supported by previous studies, the researcher may move to another position supported by empirical evidences. The biggest difference between inductive and deductive models is that in the end the inductive model generates new theory based on the situation's specifics, whereas deductive researches do not usually advance to that stage. In any case, both strategies should facilitate the never-ending loop of scientific research by encouraging further questions and studies. (Keyton, 2006) Regarding data analysing methods, academic world conventionally divides them into two major types: quantitative and qualitative. This study applies both approaches to achieve a better outcome.

The sample population includes commercial airlines that are originated from and operated in Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden). The autonomous regions of the aforementioned countries are also included in this study's scope. This scope is based on Gill et al. (2008)'s suggestion that there is a need for a geographical perspective regarding sustainability reporting (communicating). Besides, this scope allows the author to conduct his research properly, as it is neither too wide nor too narrow for the author's capability and resources. However, while Gill et al. (2008) did a comparative research to show the contrasts among different continents in sustainability reporting, this study attempts to show the contrast between studied companies, not among the countries of origin (Denmark, Finland, Iceland, Norway, and Sweden).

The researcher made a long list of candidate corporations and did a primary research to see how active those candidates are on social media. The long list included five corporations: SAS (Scandinavian Airlines System), Finnair, Icelandair, Norwegian Air Shuttle, and Braathens Aviation Group (including Malmö Aviation, Sverigeflyg, and Braathens Regional). The

researcher sent emails regarding the study to all the candidates and suggested cooperation and/or support from those companies for the process. However, all the answers are negative. Therefore, this study was conducted totally independent from influences of any sample organisations. This may in fact increase objectivity of this research. At the final step of the primary research, a group of viable samples was selected for the thesis' data and information collection process. The final list of studied companies is listed in Table 2. Readers may learn more about the samples in section 3.4, where companies' overall information is briefed.

TABLE 2 The sample population of this thesis

Company	Country	Headquarter
SAS (Scandinavian Airlines)	Denmark, Norway, Sweden	Stockholm, Sweden
Finnair Oyj	Finland	Vantaa, Finland
Icelandair	Iceland	Reykjavik, Iceland
Norwegian Air Shuttle (ASA)	Norway	Fornebu, Norway

The author collected and analysed information and data from the sample population (i.e. case companies) on a *longitudinal basis*. That means the collecting process will cover a specific period of time. This approach is suggested by Lodhia (2010) for its ability to capture the communication potential of the world-wide-web and by McDonagh (1998) to gain a fuller insight. The timeframe for this research is 24 months, and the actual researching time period was one (01) months. There is also a post-study period of two (02) weeks where the study's final report can be revised if needed. The main purpose of this post-study period is to see if the findings still hold true and stay reliable. However, information and data collected from the post-study period do not necessarily have to be included in the final paper.

3.1 Data Collection

The data collection process is adapted from the designs of Weber (1990) and Krippendorff (2004). They were also applied in earlier studies e.g. Mallen, Stevens, and Adams (2011); and Mallen, Chard, and Sime (2013). This process includes four main preparation steps.

The first step is establishing the sampling units. This study examines the use of different social media platforms in communications. There are a lot of social media platforms on the Internet at the moment. The researcher conducted a quick enquiry on ten platforms, most of them are considered the most used social media nowadays (see Statista, 2018). See Table 3 for more information of this enquiry. There are several noteworthy points should be taken out from the results. First of all, most case companies have Google+ profile, but Icelandair only have for their cargo business, and other companies do not have many activities on this platform. Besides, Google announced to shutdown Google+ services, at least for private users (Google, 2018). Therefore, Google+ is deemed

to be unqualified for this study. Secondly, all of the cases own LinkedIn profiles. However, this platform pursues a main purpose for professional connections, not B2C. Therefore, the author decided not to use LinkedIn as a research platform. Thirdly, despite their popularities among young people, none of the case companies connects to their customers via Snapchat or Pinterest. Last but not least, Finnair manages corporate profiles on Youku and Weibo to keep in touch with its Chinese-speaking customers. None of other companies shares this approach. SAS has a blog only in Japanese, and is not promoted on English websites. At the same time, due to insufficient Russian language skills, the author could not conduct any research on VK, the Russian version of Facebook, even though its user base is large and several case companies might have profiles on the platform. At the end of the elimination process, the chosen platforms for data collection are: (1) *Facebook*, (2) *Instagram*, (3) *Twitter*, and (4) *YouTube*.

TABLE 3 Case companies' profiles on different social media platforms

	SAS	Finnair	Icelandair	Norwegian
Facebook	Yes	Yes	Yes	Yes
Twitter	Yes	Yes	Yes	Yes
YouTube	Yes	Yes	Yes	Yes
Instagram	Yes	Yes	Yes	Yes
Google+	Yes	Yes	Yes	Yes
LinkedIn	Yes	Yes	Yes	Yes
Snapchat	No	No	No	No
Pinterest	No	No	No	No
Blog	No	No	Yes	No
Tumblr	No	No	No	No

After decided on the platforms, the sampling units were also chosen. For the sake of simplicity, all the sampling units for internal layer will be called “*a post*”. However, there are platform-specific sampling units (see Table 4) that were used for data collecting. For example, Facebook has status, links, photos, and videos, etc., while Twitter has tweets. Because this study focuses on environmental issues, within this report paper, “*a post*”, “*sustainability post*”, “*environmental post*”, “*environment-related post*”, and “*qualified post*” are used interchangeably.

The second step is determining the unit of text. This unit is different from the sampling units. This is the unit for analysing and building a statistical result for the study. The unit, which was used mainly in this research, is numeric. This is because the author would like to get a quantitative look of using social media posts for environment-related communications. In more details, the words of a post or a comment will be counted. The counting technique also applies on number of posts, comments, and shares, etc. (more details in Table 4)

The third step is establishing the coding themes. Not all the posts on companies' social media platforms are necessary for this study. The theme of this thesis is about environmental issues within sustainability and environmental topics. Therefore, the author collected data only from posts that contain relevant contents. In order to get needed data and information as well as improve quality for the research, the researcher himself read through all

posts of the studied airlines on the four social media platforms within the chosen two-year period. This method is more labouring for the researcher, but reduces the risk of missing suitable contents in contrast to e.g. the method of using search machine and keywords.

The last step is determining the coding mode. This means how the data is collected and registered for analysing. There are two main options: using technological aids (data collecting software or the likes), or coding by people. Due to the lack of resources and the small scale of this study, the author decided to record the data by hand. The collected data and information are stored in digital format and analysed with aids from computer software. However, the researcher himself would do the collecting and data-inputting process. In total, from all sample companies' social media platforms, the researcher has read through 7753 posts, from which 4371 posts are under the 2017 period and 3382 posts are under the 2018 period. Total of environment-related posts is 105, from which 49 posts are under the 2017 period and 56 posts are under the 2018 period. These 105 posts in this paper are officially called "qualified posts", which are the main source for this research's analysis, especially in qualitative content analysis. After the data is collected, the analysing step would take place. How the analysing phase was conducted and handled will be discussed in the next part of this report.

3.2 Data Analyses

Russell (2009) asserted that metrics for social media will take place beside previously established metrics, and they also need to be adjusted when new metrics are created. Hence, there is no exact framework that can be used for all cases of social media communications. It should be tailored to the needs and purposes of a specific situation. Equally important, researchers should not employ too complicated frameworks, which cannot be managed and analysed properly, without compromising their critical roles for the research (Sekaran, 2003. Cited by Rashid et al., 2014). Therefore, data and information collected in this research were analysed based on a framework carefully built by the author of this thesis, tailored especially for the research problem and questions.

However, this thesis' framework is not wholly original. It is a combination of different analysis methods that have been suggested and employed in prior studies on communications and sustainability, with focus on social media and environmental issues (e.g. Russell, 2009; Lodhia, 2010; Mallen et al., 2013, and Dach, & Allmenlanger, 2014). It also included other frameworks and guidelines for managing communications and social media (e.g. Bhattacharya, & Sen, 2003; and Peters, Chen, Kaplan, Ognibeni, & Pauwels, 2013). The description of this paper's analysis framework and how it was constructed will be discussed further in the next paragraphs. The framework is also shown in Table 4.

TABLE 4 The analysing framework of this study

No.	LAYER	DIMENSION	EVALUATED ASPECT	MEASUREMENT		UNIT	CODE	SOCIAL MEDIA PLATFORMS' UNITS						
				Posts per month	Qualified posts per total posts									
1	INTERNAL	Content Properties	Activeness of company	Frequency	Numeric	F1	FACEBOOK	Status, photo, link, post, etc.						
2				Qualified posts per total posts				Numeric	TWITTER	Tweet	YOUTUBE	Video	INSTAGRAM	Photo, Video
3	EXTERNAL	Conversation Rate	Engagement level of audience	Richness of contents	Numeric	L1	FACEBOOK	Status, caption, post text, etc.						
4				Length (words per qualified post)				Numeric	TWITTER	Tweet	YOUTUBE	Video info	INSTAGRAM	Caption
5				Average comments per qualified post				Numeric	C1	COMMENT	Reply	COMMENT	Comment	COMMENT
6	EXTERNAL	Sharing Rate	Spreading rate of information	Number of words used in comments per qualified post	Numeric	S1	FACEBOOK	Share						
7				Total shares of qualified posts				Numeric	S2	TWITTER	Retweet	YOUTUBE	Data cannot be obtained	INSTAGRAM

Both *quantitative-* and *qualitative content analysis* is employed in this study. Krippendorff defined *content analysis* as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use (2004, pp. 18)”. This method helps measuring the occurrence of certain elements in communication channels and means, i.e. conversations, texts, etc. Content analysis differs from other communication analysis methods in its objective and procedural characteristics. There must be specified steps and rules for analysing. (Keyton, 2006) In this study, the author attempts to find out frequencies of communication about environmental issues via social media, so that quantitative content analysis is an appropriate choice. Besides, the most noteworthy and representative contents should be analysed by qualitative approach, in order to create deeper and further understandings upon the studied topic.

There has been a lot of research working on the success of social media marketing. However, there is a lack of studies about factors that affect popularity of a brand post, i.e. the number of likes and comments on different posts on a brand page. (Shankar & Batra, 2009; Ryan & Zabin, 2010) Nwagbara and Reid (2013) suggested that future studies should take into perspective quantitative approaches that will possibly offer empirical insights into how CSC can be measured. Respond to the need, Vries et al. (2012) built a conceptual framework in their paper to evaluate brand posts on social network brand pages. They argued that vividness, interactivity, the contents (information, entertainment), the position of a post, and the fans’ comments are related to brand post popularity. Interactivity is characterised by two-way communication among the companies and customers on social media platforms. In order to activate this characteristic of a post, companies may apply different techniques. Questions are good for create reactions from followers, for example. A brand post with a link is also considered more interactive. The more interactive a post is, the more likes and comments it might get from the fans (customers, consumers...). I.e. the post is more popular. (Vries et al., 2012) This emphasises the importance of likes and comments for a post on social media. (Vries et al. (2012) followed a different research direction from this thesis: they tried to figure out the influences of brand post characteristics and contents on likes and comments, whether in this study the author only examined the interactivity to evaluate the degrees of brand post efficiency and audience reaction.) In short, the first three measured units of this study are as follow: *posts per month (F1)*, *environmental issue posts per total posts (F2)*, and *length (words per post) (L1)*.

Thierer and Eskelsen (2008. Cited by Russell, 2009) joined the debate by discussing four layers required to evaluate a certain media. They are (1) product or content, (2) distribution, (3) receiving or display devices, and (4) storage. Russell added two more layers into considerations, which are (5) sharing and (6) ROI. The sharing layer is of interest of this study. It is used to measure two analysis questions: (1) *how many times contents are shared (measure unit S1)*, and (2) *total and average number of shares per content (measure unit S2)*. Within this research, the sharing layer is called the “Sharing Rate”, and content is called “a post”. Data for these two units cannot be obtained on Instagram and

YouTube, due to the distinct characteristics and functions of those two platforms.

Additionally, Russell (2009) mentioned several metrics for conversation-based communications, such as conversation rate, IP tags and filter, viewer detail reports, and Visit Depth Index, etc. This research has an outside observing standpoint, so it had no access to companies' internal report on the last three metrics. However, the author adopted the first metric into the analysing framework. "Conversation Rate" includes two measurements: *the average number of comments per post (measure unit C1)*, and the number of words used in comments to posts (Russell, 2009). In this thesis, for simplicity's sake, the second measurement is calculated as *the average number of words used in all comments per post (measure unit C2)*. This is meant to evaluate the engagement level of the audience in the conversation. More words in a comment, regardless its content, could be argued a sign of deeper engagement.

This study utilised a *longitudinal method* for analysing data. Cooper (2003. Cited by Lodhia, 2010) suggests that website analysis should be conducted on a longitudinal basis to capture the potential for rapid information changes on websites. This is also applicable for social media analysis because they are in fact Web 2.0 platforms. Park and Kim (2014) also advocated longitudinal analysis as an answer to the constant changes in company-customer relationships online. There have been several studies conducted with this approach for print media and specifically web-based media. For example, Adam and Frost (2004) studied web-based sustainability communication practices of companies within a period of three months, or Unerman and Bennett (2004) explored the use of forums to communicate with stakeholders by Shell through time. There is one crucial difference between using longitudinal approach for print and for web media: the latter focuses more on contemporary phenomena, so it gives an opportunity to understand more about current happenings. (Lodhia, 2010) Consider the liquidity of social media, this approach would offer a look into how companies practicing/shifting their sustainability communications over time accordingly to changing circumstances.

Lodhia (2010) also asserted that (1) this method could be used for other online environments; and (2) it can possibly be adopted for narrower/more specific issues than sustainability in general. Moreover, researchers should be able to build a method that can assess new ways/media for companies to conduct external communications. This paper applied the longitudinal method in a slightly different way than how it has been employed, in accordance with Lodhia's recommendations. Instead of recording the web contents at the start and then monitoring all changes occurred within the research duration, the author collected *at once* all social media contents from within a specific pre-selected time period. This period covers 24 months, from October 1st 2016 to September 30th 2018. (Note: in coding and displaying data, this period was divided into two sub-periods: 2017 and 2018. 2017 encompasses posts from October 1st 2016 to September 30th 2017, and 2018 covers posts from October 1st 2017 to September 30th 2018) The collection process took place within four (04) weeks in September and October 2018. The collected contents then were

analysed to find out the current situations and trends. The modification is aimed to create a more suitable method for analysing social media content compared to website content, due to differences in characteristics between the two. One more note here is that the focus of this study is put on the *environmental aspect* of sustainability; hence only contents that related to this aspect were collected and analysed.

One limitation of the longitudinal method is that it may not be sufficient and might require other sources and/or methods to complement it to show a whole view of the issues studied. To confront this problem, Lodhia (2010) suggested that companies' websites and hard copy reports could be used to provide more data needed. This approach was used by e.g. Adam (2004. Cited by Lodhia, 2010). Besides, if a company wants to be competitive, its (sustainability) communication strategy needs to reflect its commitments to sustainability (Nwagbara & Reid, 2013). The author, therefore, took in account the latest version of corporations' sustainability statements (visions, strategies, etc.), mainly from environmental sections, as supplementary sources of data. The information was used as backgrounds to see if a company's sustainability communications on social media are in line with its principles and data stated in the statements. Section 3.4 of this report introduces those information and backgrounds.

3.3 Reliability, Validation, and Limitations

All researchers should test their studies' reliabilities and validations. There are various ways to conduct that task. This study uses Keyton (2006)'s approach to assess its reliability, validation, and limitations.

Keyton (2006) listed 12 characteristics of science that every research methodology contains (see Table 5). The extents to which a certain method encompasses each characteristic might be different. Nevertheless, thanks to those characteristics, scientific knowledge distinguishes itself from casual, daily knowing. Even though strictly obeying the list will not ensure reliability and validity of a research, it may guarantee that a study is a legitimate scientific work. Therefore, the author would like to use the 12 characteristics of science mentioned above to test this paper, in order to establish the creditability for it.

Firstly, regarding Principle 1 and 7, this study collected data from systematic observations on the activities of companies on social media. The study uses real empirical data from the chosen platforms, and the data was measured to form the study's results. Besides, the author is aware of the risk of errors, especially in the data-collecting phase. Therefore, a safe approach is used: the researcher conducted the collecting task himself instead of automated assistance. This approach helps the data collecting process not missing posts (which are related to the thesis topic) than it would have if the researcher had used certain keywords with search software. This is in turn responding to Principle 8 from Keyton (2006, pp. 10).

TABLE 5 Characteristics of Science (Adapted from Keyton, 2006, pp. 9-11)

Principle	Details
1 <i>Based on evidence and the principle of empiricism</i>	Careful and systematic observation must occur. What is observed and measured - the data - serves as evidence.
2 <i>Testable</i>	The proposition, research question, or hypothesis must be able to be investigated with certain methodologies.
3 <i>Researchers must explore all possible explanations</i>	This is to demonstrate that the proposition cannot be disproved. If the proposition and its explanation hold up over time, the finding will be accepted as true or real, until shown otherwise.
4 <i>Replicable, repeatable</i>	A research's result should be found the same or similar in research that follow the same or similar approach.
5 <i>Must be part of the public record</i>	Scientific study is available to other researchers and the general public, so that new studies can be built upon. All published research should include a section describing the methods by which the data were collected and interpreted, so that others can evaluate and replicate the study.
6 <i>Self-correcting</i>	The scholars who conducted the original study and the scholars who replicate or challenge studies continually improve the methods; and that leads to a greater understanding and more detailed explanations.
7 <i>Relies on measurement and observation</i>	
8 <i>Recognise the possibility of error and attempt to control it</i>	Error can occur in many places in the research process. Quantitative research limits and accounts for error through the use of systematic procedures and statistics. Qualitative research does that by providing detailed prescription to allow the reader to draw his or her own conclusions and interpretations. However, it is impossible to eliminate all bias and error. Therefore, researchers must be highly precautions.
9 <i>Personal bias and distortion must be minimalized</i>	This is for scientific objectivity's sake. Researchers cannot be so committed to their own point of view and expectations that they fail to see other explanations. Even though qualitative research is more subjective than quantitative, all research must be as objective as possible, regardless the applied methods.
10 <i>Scepticism</i>	Researchers should not rely on what appears to be obvious or common sense. This attitude of scepticism allows and encourages researchers to put their assumptions through a process of testing or verification.
11 <i>Generalizability</i>	Scientific research has an interest in the extension of the findings to similar situations or to similar people. Quantitative findings are more valid if they apply to a range of cases, people, places, or times. By using discipline-accepted procedures, researchers can help strengthen the generalizability of their results. Qualitative findings are less generalizable and more case-specific. The generalizability of qualitative research can be strengthened by longer observation time periods or greater observing time points.
12 <i>Heuristic nature</i>	Research findings should lead to more questions. Most research papers mention suggestions for further studies. The ultimate objective of science should be to lead scientists to future discoveries and investigations.

Secondly, this thesis has very clear research problem (and questions). Those questions are straightforward and can be answered by empirical research. The methodologies might be varied, but it is totally possible for one to examine the chosen topic. The approaches used by this study can be replicated by other researchers and would probably produce similar results. This research's methodology might also be revised, upgraded, added, and improved, etc., so that the research questions would be answered in a better way with better empirical evidences. Those arguments display this study's characteristics that corresponding to Principle 2, 4, and 6.

Thirdly, with the collected data and evidences in hand, the researchers tried his best to answer the thesis questions. All possibilities and explanations were brought onto the table. The research took in account, among other things, geographical contexts, companies' ownerships, economy situations, and social contexts, etc. in the qualitative analysing step. Moreover, to keep an objective lens upon the topic, the author put aside his subjectivism and favouritism towards certain companies, industries, or countries. The author also avoids by all costs non-scientifically-proven common senses in assessing the information. Data and evidences were examined with scientific scepticism. Guessing, assuming, and supposing are averted as much as possible. All these actions ensure that this study contains such characteristics that are in line with Principle 3, 9, and 10.

Next, the findings of this research, while successfully answer the research problems to certain degrees, might lack a broad generalizability. This is because of the chosen industries (aviation) and geographies (Nordic countries). The results might not be applicable to other industries and locations. This is also because of the limited resources for the research. Nevertheless, the thesis contains moderate generalizability. Findings might be applied to similar industries, such as those within transportations. They might also give some similar outlooks about using social media for sustainability communications in other developed countries around the world. This point is responding to Principle 11.

Interesting enough, thanks to the limitation mentioned above (and others), this research would raise more questions for future studies. It creates the needs and desires for others to conduct more research and investigations upon the topics or similar ones. This characteristic named 'heuristic nature of a study', which is mentioned by Keyton (2006, pp. 11) as his Principle 12.

Finally, this report will be published and available to the public. The report will be produced in both printed form and digital format. It will be kept within the public domain, e.g. in libraries' online databases. Everyone could access the report if interested. This is responding to Principle 5: "scientific studies must be part of the public record".

3.4 Research Sample Introduction

In this section, this report introduces the researched companies briefly, so that readers could gain more information about those samples. The companies are presented mainly based on three elements: ownership, business performance, sustainability agendas, and sustainability performances (especially regarding environmental issues). In addition, some other details might be inserted if they are deemed to be necessary or interesting to know.

3.4.1 SAS (Scandinavian Airlines)

Scandinavia Airlines belong to SAS – a conglomerate also consists of SAS Cargo Group and SAS Ground Handling. (For the sake of simplicity, the airline company of SAS will be called SAS from now on in this paper.) The business operation is heavily centralised with its headquarter located in Stockholm, Sweden. However, because the SAS is a merge of three Scandinavian countries' flag carriers, it has home bases in Copenhagen Kastrup (Denmark), Oslo Gardermoen (Norway), and Stockholm Arlanda (Sweden). (SAS, 2018a) Generally, the Danish, Norwegian, and Swedish governments own the group. However, there are five (5) more shareholders needed to accumulate more than 50% of shares/voting power. (SAS, 2018b)

TABLE 6 Major shareholders of SAS (Adopted from SAS, 2018b)

Shareholder	Voting Share	Accumulation
The Swedish government	14,8%	14,8%
The Danish government	14,2%	29,0%
The Norwegian government	9,9%	38,9%
Knut and Alice Wallenberg's foundation	6,5%	45,4%
State Street Bank & Trust	1,5%	46,8%
Gerald Engström	1,4%	48,2%
Försäkringsaktiebolaget Avanza	1,3%	49,5%
Färna Invest AB	1,1%	50,6%

In the period 2016/2017, SAS transported 30 million passengers with more than 300000 flights. At year-end, the company owns 158 airplanes, which also included those of partnered operators. In the 2016/2017 finance-period, SAS gained an increase in profitability of more than 1 billion Swedish kronor (SEK). The company claimed that it contributed about 1% of the GDP in Scandinavia. (SAS, 2018a)

Sustainability is an important part of the business at SAS. As Rickard Gustafson, President and CEO, has stated: "At the same time as we endeavour to increase SAS's competitiveness, we are well aware that the aviation industry must become even more sustainable. SAS takes its sustainability responsibility very seriously. (SAS, 2018a, pp. 3)" SAS has clear environmental vision and goals for 2020. The vision is "to be a part of the future long-term sustainable society (SAS, 2018a, pp. 6)". On a shorter timespan, SAS strives to (1) reduce flight CO2 emissions per passenger kilometre by 20% (compared to 2010's figure), (2)

reduce noise emissions at take-off by 15% (compared to 2010's figure), and (3) regularly use JET-A1 fuel, which is based on renewable sources. The company will also introduce its brand new vision and goals for 2030 during the period 2017/2018. On a wider perspective, SAS supports the International Air Transport Association (IATA)'s ambition toward 2050; that it will be possible to fly commercially without material climate impact. For SAS and its stakeholders, the most important topics within sustainability are diversity and equality, work condition, business ethics and anti-corruption, sustainability in the supply chain, waste, greenhouse gas emission, and noise. (SAS, 2018a)

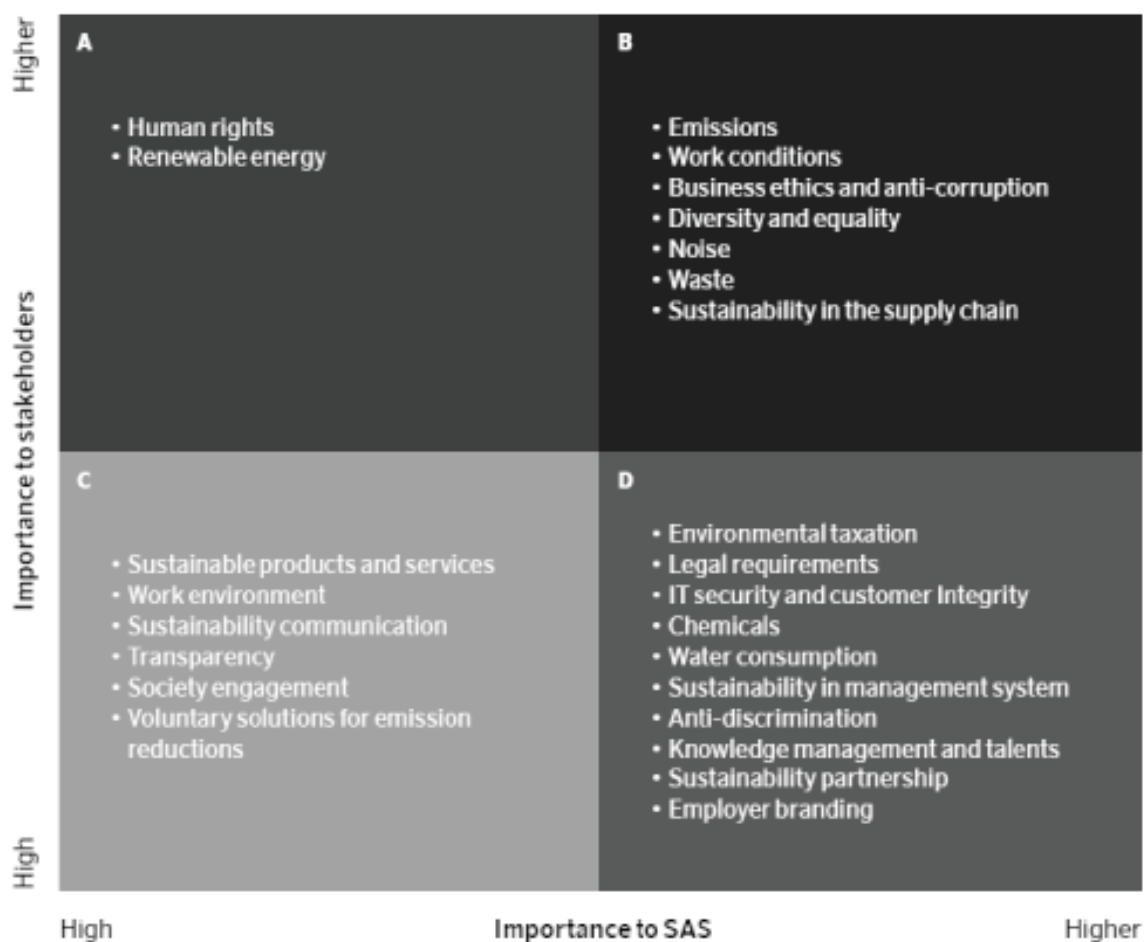


FIGURE 4 SAS Analysis of Sustainability Issues (SAS, 2018c)

This thesis has a main interest in those topics related to environmental issues. At SAS, a specially designed programme handles those issues. ISO 14001 has been adapted at SAS thoroughly and it is the foundation for the SAS *environmental management system*. The environmental programme covers entire business operation and relate to all groups of stakeholders. All activities are well designed and executed within the frameworks of relevant legislations and other requirements such as flight safety, etc. (SAS, 2018a) The environmental programme focuses on the following areas (SAS, 2018a, pp. 7):

- Fleet renewal
- More efficient planning of SAS aircraft

- More efficient usage of SAS aircraft in day-to-day operations
- Continuous aerodynamic, weight and efficiency follow-up and modification of SAS aircraft
- Environmentally adapted products
- Alternative sustainable jet fuels
- Stakeholder dialog/work with air traffic management, airports, wet-lease operators, aircraft and engine manufacturers

The average age of the whole SAS fleet is 10,4 years as of year-end 2016/2017. New airplanes (Airbus A320neo), which are more environmental friendly, were purchased and put in use. The fleet is also utilised in a manner that is both economic-efficient and ecological-sustainable. SAS continuously modifies its airplanes with the latest advancements in order to improve aerodynamics or reduce weights. During the period 2016/2017, SAS piloted the use of alternative sustainable jet fuel (biofuels) on its flights from Oslo to Bergen. The total amount of fuel used was 100 tonnes. SAS commits in *biofuel* engagement and becomes a supporter for various international initiatives for biofuel use. Besides, SAS participate in dialogues and work with air traffic management, airport, suppliers, and aircraft and engine manufacturers. The company puts efforts in identifying more efficient methods for controlling air traffic (both in the air and on the ground), finding better aviation technologies, and purchasing more sustainable airplanes. (SAS, 2018a)

In 2016/2017, SAS saw an increase in tonne kilometre and carbon dioxide emissions. This is due to the growth in demands for long-haul flights (flights longer than 3000 km). Those flights contributed 42% of the total CO₂ emissions. However, the emission rate per passengers decreased from 99 grams to 96 grams, corresponding to a 2,7% year-by-year improvement. The CO₂ emissions of Cargo Group also decreased, but it is not clear whether this phenomenon thanks to the new sustainable practices or falls in business demands. There is no use for ozone-depleting substances (halon), as well as no significant emissions or spillages of fuel and other hazardous wastes were reported. Noise pollution increased 3,4% compared to the period 2015/2016 (again because of the growth in demands for long-haul flights), but it has been reduced by 11,1% compared to base year 2010. (SAS, 2018a)

3.4.2 Finnair Oyj

Finnair is the *flag carrier* of Finland. The company specialises in passenger and cargo traffic between Asia and Europe. The group also consists of Aurinkomatkat and Finnair Holidays brands. (Finnair, 2018a) The biggest shareholder is the Finnish state, under the legal identity of 'Prime Minister's Office', which holds 55,81% of shares and voting power. The other shareholders who hold more than 1% of Finnair's shares (as of April 30th 2018) are: The Local Government Pensions Institution (4,85%), Tiiviste-Group Oy (1,68%), The State Pension Fund (1,64%), and Ilmarinen Mutual Pension Insurance Company (1,52%). All in all the big five holds 65,5% of shares, while the top 50 holds only 70,17% of total shares. (Finnair, 2018b) Members of the Board of Directors did

not own any shares, while the CEO and members of the Executive Board own a total of 0,27% of all shares and votes. (Finnair, 2018a)

Finnair's revenue in 2017 reached EUR 2568,4 million, increased 10,9% compared to 2016. Revenue increase occurred in all sectors of business. Out of the total revenues, 78,7% is from passenger traffic, 8% from travel services, 7,7% from cargo transport, and 5,6% from other revenues. Shareholders got a dividend at EUR 0,30 per share for the year 2017. At the same time, a new record of amount of passengers per day was made in 2017: over 40000 passengers. Almost 12 million passengers were transported in 2017 by a fleet of 55 airplanes. (Finnair, 2018a)

Sustainability is an integrated part of Finnair's strategy. The company defined its material themes and aspects (see Table 7) in references to the GRI G4. The five (5) themes of Finnair's sustainability are Environment, Economic Aspects, Customer, Personnel, and Ethical Business and Responsible Sourcing. The environmental theme is at central interest of this paper. Based on the defined environmental aspects, Finnair located its key environmental areas: emissions from the use of jet fuel, flight noise, the energy consumption of properties, and cabin waste. The company adopted the IATA Environmental Assessment (IEnvA) programme as its own environmental management system. The system also complies with ISO 14001:2015. Two major perspectives of the scheme are (1) *emissions from flight operations* and (2) *energy use in corporate facilities*. In 2014, Finnair became the first European airline to receive the IEnvA Stage 2 Certificate. (Finnair, 2018a)

Finnair aims to operate with more environmental-friendly and efficient fleet. It commits to the aviation sector's common goal of carbon-neutral from 2020 towards and cutting emissions by half (during the period 2005-2050). Finnair joins a nation-wide energy efficiency agreement in the service sector, pledging to reduce its properties' energy consumption by 7% (during the period 2016-2025). Even though Finnair has not used biofuels in their fleet operations, it is considering and evaluating possibilities of adopting this approach. The company also stresses on monitoring the supply chain and its collaborations in sustainability issues. Finnair is also actively participating in civil aviation environmental committees and industry working groups and promoting the reduction of the sector's environmental impacts. For many years, Finnair has been a part of the global Carbon Disclosure Project (CDP). The company has also executed other activities such as supporting a reforestation project in Madagascar. Finnair realises the impacts of social media for communications about sustainability issues and developed relevant tools for reporting and communicating such issues. (Finnair, 2018a)

Finnair's most significant environmental action was the *renewal of its fleet*. The average age of Finnair's fleet was 8,9 at year-end. This is mainly thanks to the four new Airbus A350 XWB planes delivered by the end of September 2017. They replace the old Airbus A340. Eight more of A350 XWB will be received during 2018-2022. (Finnair, 2018a) One notice here is that the average fleet age does not cover 24 airplanes operated by Nordic Regional Airlines (Norra), who cooperates with Finnair on a contract-flying basis. These airplanes are a bit older than Finnair's official fleet (Airfleets, 2018). Another intriguing

development was the installation of 1200 solar panels at the new cargo terminal, which might produce up to 254 MWh of electricity per year. (Finnair, 2018a)

TABLE 7 Finnair's material themes and aspects (Adapted from Finnair, 2018a, pp. 124)

Environment Fuel efficiency Energy and Greenhouse gas Environmental legislation and regulations Route planning Biodiversity	Personnel Employee safety Employee competence, well-being, diversity and equality
Economic Aspects Financial results and future competitiveness Local and economic impacts	Ethical business and responsible sourcing Code of Conduct Anti-corruption & anti-bribery procedures Purchasing policies and supply chain responsibility Human rights
Customer Passenger well-being and safety Customer satisfaction Punctuality	

CO₂ emissions in 2017 increased by 5,4% year-on-year, alongside with the raise in NO_x emissions and fuel consumptions (for both planes and ground vehicles). The amount of waste increased by 5%. Nevertheless, no waste from Finnair's operations is disposed of in landfills in Finland. Moreover, there was no significant spillage reported. At Finnair's properties, the use of electricity was reduced 4,9%. However, heating usage increased by 17%. In total, the energy consumption at offices and other facilities expanded by 7%. All of the hikes in different aspects are mostly due to the growth of air traffic. Regarding noise population, Finnair has reduced its impact by introducing the new fleet and scheduling take-offs and landings at less undesirable times (from a noise perspective). The use of the continuous descent approach (CDA) also helps reduce flight noise within 10km of the airport. However, Finnair could only manage to apply this method for less than 1% of total flights, due to congested air traffic. (Finnair, 2018a)

Finnair's efforts in sustainability were recognised nationally and internationally. Aurinkomatkat was named Finland's most sustainable travel service company in the Sustainable Brand Index. Finnair was also named "responsible company of the year" by the Association of Finnish Travel Agents. The CDP awarded Finnair with score B - Management level, while the German ESG rating company oekom research AG awarded Finnair rating C+ - designation 'Prime'. (Finnair, 2018a)

3.4.3 Icelandair

Icelandair belongs to Icelandair Group, which also consists of IGS Ground Services, Icelandair Cargo, Air Iceland Connect, Loftleidir Icelandic, and other travel and hotel companies. For the purpose of this thesis, only the main airline brand (Icelandair) was studied. The company's focuses are connections from Europe to North America, using Iceland (or Reykjavik in particular) as a transfer hub. (Icelandair Group, 2018)

Icelandair is not a flag carrier of Iceland, despite the fact that it is the main airline of the country. The biggest shareholder is Lífeyrissjóður verslunarmanna (The Pension Fund of Commerce) who holds about 14,69% of total shares (as of December 31st 2017). That was approximately double the share of the next biggest investor. (Icelandair Group, 2018)

As of the end of 2017, Icelandair Group employed more than 4000 staff and carried about 4,4 million passengers by their fleet of 30 airplanes. The revenue was at USD 1,4 billion. Net profit recorded at USD 37,7 million, a huge drop from USD 111,2 million in 2015 and USD 89,1 million in 2016 (which were the highest earning years of the company's history). The results partly reflected the expense rise (+17%). Nevertheless, operating income increased by 10% against 2016, reached USD 1419,5 million. Dividend per share was distributed at USD 77 cents for the period 2017. (Icelandair Group, 2018)

Environment is mentioned in one of Icelandair Group's core values: "We care for our customer, employees, environment and shareholders (Icelandair Group, 2018, pp. 24)". There is not much more than that in the company's strategy. Environment and sustainability are not mentioned in the report's outlook. However, there is a whole section on Icelandair Group's websites and in the annual report dedicating for environmental issues. Icelandair is a member of the International Air Transport Association Environmental Assessment Programme, Airlines for Europe (A4E), and Environmental Committee of the Icelandic Travel Industry Association. The company, as its counterparts and competitors, designed its own environmental policy, which dictate the group's activities. The Group's common environmental management system has been certified to ISO 14001. The company also follows the IEnvA programme of IATA. (Icelandair Group, 2018)

The main themes on which Icelandair has been working on are: continuous improvement on the policies, sustainable material use and disposal, working with environmental conscious suppliers, and adherence to environmental protection principles. (Icelandair Group, 2018) The company tries to compliance with laws and legislation by (Icelandair Group, 2018, pp. 64):

- Minimising [their] carbon footprint and raising awareness
- Reducing waste by increasing recycling
- Promoting responsible use of resources
- Increasing the use of environmentally friendly products and services

The airline utilises Continuous Descent Approach (CDA) as Finnair does, in order to reduce emissions. For ground and service activities, Icelandair has goal to maximise the use of green energy and minimise waste in all operations through adopting sustainable solutions. It created its own Waste Management Programme for this purpose. (Icelandair Group, 2018)

Internally, Icelandair's employees are encouraged to adopt more environmental friendly practices, such as use other options than drive-alone commuting, to reduce their contributions to greenhouse gas emissions. The group commits to increase environmental awareness among all employees. Besides training programmes, the company executes dialogues and

communications for information exchange. Externally, Icelandair applies a purchasing policy that favours sustainable and green procurement. It works closely with current suppliers to improve the optimisation of environmental impacts. Icelandair is continuously working on reducing its environmental impacts on the communities around airports. Beyond that, the group sponsors Icelandic Forestry Association's Open Forest project, which is designed to enable greater public recreation in forest and forestry locations. (Icelandair Group, 2018)

The year 2017 saw a decrease in fuel use at Icelandair. Figures dropped both in RKP (fuel burn per 100 revenue passenger kilometres) and OKP (fuel burn per operational tonne kilometres). Icelandair is waiting for 16 new airplanes from Boeing. The new airplanes are said to have more efficient engines. They are supposed to reduce fuel consumption greatly: 20-25% per seat. Noise from air traffic complies with the International Civil Aviation Organisation (ICAO). Regarding ground facilities, 100% of used electricity is guaranteed from renewable sources (hydroelectric). (Icelandair Group, 2018) In general, there are more words and information from Icelandair related to environmental issues than statistics and figures of actual activities' outcomes. Based on the proportion of the environment part in the group's annual report, it seems that the company has not put as much resources and efforts into environmental topics in comparisons to other airlines such as SAS and Finnair.

3.4.4 Norwegian Air Shuttle (ASA)

ASA is the parent company and a part of the Norwegian Group. Four major areas of the group include assets/financing, aircraft operations, people and services, and other business areas. ASA does not publish reports on each business entity, because the Executive Management considers the whole group as one under the brand of Norwegian, a low-cost air passenger travel. The business' strategy is *'affordable fares for all'*. (Norwegian, 2018) Therefore, this study would take the same approach. When it discusses the company's operations and activities, it encompasses the aforementioned identity.

In 2017, Norwegian operated more than 500 routes with 23 operational bases in 13 countries and hired 9593 staff worldwide. In fact Norwegian owns five airline operators in four different countries (Norway, Ireland, United Kingdom, and Argentina), all unified under the flag of Norwegian Air. The airline is the third largest low-cost brand in Europe and seventh in the world. Norwegian has 17608 shareholders, from whom the ten biggest ones hold 75,6% of all shares. Norwegian's CEO, Bjørn Kjos is the major owner of HBK Holding AS, which in turn is the biggest shareholder of Norwegian. Besides, Norwegian's Chair of the Board of Directors, Bjørn H. Kise, also has ownership interests in HBK Holdings AS. (Norwegian, 2018)

The Group's revenues for 2017 was NOK 30948 million, approximately EUR 3239,03 million (xe.com, 2018a), grew by 19% from 2016, thanks to an increase in number of passenger (13% from 2016). Total earning before interest, tax, depreciation and amortisations (EBITDA) was NOK 59 million (2016: NOK 3116 million). The financial year saw a loss before taxes at NOK 2562 million

(2016: profit at NOK 1508 million) and after taxes at NOK 1794 million (2016: profit at NOK 1135 million). This performance resulted in the earnings per share in 2017 become negative (NOK -50,2), compared to 2016's positive NOK 31,7. The loss was related to growth in the 787 operations and prevention of pilot shortages. (Norwegian, 2018)

"Norwegian strives to be a good corporate citizen in every area of operation. The Company is committed to operating in accordance with responsible, ethical, sustainable and sound business principles, with respect for people, the environment and the society. (Norwegian, 2018, pp. 18)" That generally concluded Norwegian's take on sustainability (which it calls 'Corporate Responsibility'). The company does not produce a separate report on sustainability, but the annual report delicates one section for this topic. Within sustainability, Norwegian builds three pillars for its activities: *Environment, Local development and Humanitarian engagement*, and *Responsible people culture*. On environmental issues, Norwegian aims to continue reducing emissions per passengers and to make aviation industry carbon neutral by 2050. The company acts on that by introducing modern and fuel-effective fleet. In addition, Norwegian is supporting various tree planting projects around the world. In 2017, the company launched its own *Plant a Tree Program* in partnership with UNICEF. The central goal is to encourage local staff engagement in this initiative. (Norwegian, 2018)

Norwegian claims that it has one of *the greenest fleets* in the world. In 2017, the company accepted 17 Boeing 737-800s, nine Boeing 787-9s and six Boeing 737 MAX 8s. Under the same period, four old 737-800s were phased out of use. The new aircraft helped to reduce CO2 emissions per passenger kilometres by 1,2% compared to 2016. The average age of Norwegian's 144-airplane fleet is 3,6 years, arguably the youngest among the samples. This young fleet also contributes in noise reduction. In 2018, Norwegian will get deliveries of 11 Boeing 787-9 Dreamliners, 12 Boeing 737 MAX 8, two Boeing 737-800s. Additionally, the company has a special method for engine and aircraft wash that reduces carbon emission by approximately 16 thousands tons per year. The flight landings use the Continuous Descent Approaches (CDA) in further cut down greenhouse gas emissions. (Norwegian, 2018) In general, there are more texts than statistics in the report, which is similar to Icelandair's case. This phenomenal might be a result of difficulties in reporting environmental issues, short on resources, or/and a lack of interests from the management.

4 RESEARCH FINDINGS

This section analyses, displays, and discusses the research findings. First, the data is analysed based on social media platforms. After that, data from each case company is examined separately, put in contrast to other companies' whenever needed. The structure for each company's profile is as follow: firstly, the platforms that have been used the most for general posts and qualified posts. Secondly, the platforms with the highest engagement rates from the audience. Last but not least, main theme(s) of the company's social media contents are discussed, together with deeper analyses on the post(s) that represents a typical communicating situation for the company. Based on the findings and analyses, the next chapter will discuss further consequent managerial implications, and proposes several suggestions for better communication in environment-related topics.

4.1 Platform-wise analyses

In this section, the collected data is analysed on social media platform perspective. Mainly, the researcher points out the highest and lowest figures in each measure unit and which platform holds them. In other words, it is meant to find out which platform is used the most, for general posts and qualified posts. Besides, which platform is preferred by each case companies for general purposes and environmental related purpose. The section also examines which platform has highest interaction rates. Finally, it discusses the posts with highest interaction rates on each platform. The detailed data sets used for this section are found in Appendix 1 and 2 enclosed at the end of this report.

The platform, which *has been used the most*, is Instagram. During the studied period, case companies posted 3351 posts on this platform. However, the platform that *has been used the most for qualified posts* is Twitter. There have been 47 posts related to environmental issues uploaded onto this social media within the studied timeframe. This leads to the results where Twitter held highest qualified post rates in 2018 (2,18%) and in general (1,88%) (YouTube

had the highest rate in 2017 at 2,02%), and Instagram had the lowest rates of environmental-related posts in 2017 (0,75%), 2018 (1,14%), and in general (0,9%). Facebook's figure for 2017, 2018, and in general are 1,14%, 1,55%, and 1,31%, respectively. That gives them a position that is only higher than Instagram's. Therefore, Twitter is conclusively the most preferable platform for companies to communicate environmental related topics.

Breaking down the collected data, one may find out which platform is preferred by each case company. SAS, Icelandair, and Norwegian use Instagram the most (in total 551, 1141, and 1063 posts respectively), while Finnair updates their Twitter more frequently (in total 1482 posts). However, when it comes to environmental issues, SAS and Finnair use their Twitter accounts (in total 9, and 18 posts respectively), Icelandair post onto YouTube (in total 3 posts), and Norwegian stays with Instagram (in total 26 posts). This is a very intriguing picture, where each company has their own preferences. The platform, which each company usually uses for sustainability posts, might not be the most used platform in general.

Due to their characteristics, platforms contrast each one other on environmental-related post length (L1), number of comments per qualified post (C1), and number of words used in comments per each qualified post (C2). Twitter had previously the rule of 140 characters and that affects the lengths of both the posts and replies. Therefore this platform has the lowest average L1. Average figure from four companies is 24,92 words. Instagram focuses more on photos than texts. That is the reason why Instagram has very low average L1 (39,73 words) and the lowest C2, at 110,66 words. In contrast, Facebook holds the highest C2: 1940,75 words but unexpectedly second lowest average L1: 39,27 words. As surprisingly, YouTube claims the highest L1 (116,83 words). Moreover, Facebook has the highest rate of comments per post (C1) (83,17 comments). YouTube, Twitter, and Instagram are lagging behind with rates respectively are 31,25, 19,36, and 12,46 comments per post. In short, companies send stakeholders *longer messages via YouTube*, while *Facebook evidently offers a medium for deeper conversations* between companies and external stakeholders upon sustainability topics.

Facebook and Twitter are the two platforms on which can conduct data collection for unit S1 (total shares of qualified posts) and S2 (shares per qualified post). Due to its retweet function, Twitter has higher average S1 across four companies (344,25 in comparison to 292 of Facebook). However, average number of shares per post is higher on Facebook platform (251,21 shares per post), while on Twitter there are only approximately 106 shares per post. This is quite surprising, but understandable, because of high posting rates from companies on Twitter compared to Facebook (2496 posts compared to 1370 posts).

On Facebook, the post with the highest numbers of comments and shares is from Icelandair. Interestingly, this company has only one qualified post on Facebook, but the reaction from the audience is enormous. The post got 274 comments (C1) and has been shared 977 times (S1). No other post from any case companies has reached more than 100 comments and 50 shares. The post was posted on June 6th, 2018, and is about Icelandair's new airplane, Boeing 737

MAX, which is described “revolutionary [...] for the environment and for [their] customers (Icelandair, 2018, June 6)”. Attaching to the post is a video presenting the new aircraft. Environmental friendliness is not the only features showed in the video. Most of the related comments are responding to other features such as legroom, seat pitch, and inside noise. There is only one comment mentioned sustainability topic. The comment asserted that people should avoid flying to protect the environment. Icelandair did not reply to this claim. This is a missing chance for the company to open a conversation with its stakeholders about environmental issues.

On Instagram, the situation is a bit more complex. However, Norwegian got the highest reaction rate from the audience. They have the post with the most comments (C1) and the most number of words in comment per post (C2). Norwegian’s post on April 11th 2017 attracted 91 comments. The post is a video of their Airbus A30 overtook another aircraft. The company slipped in some information including that Norwegian is “the greenest [...] airline (Norwegian, 2017, April 11)”. The post went on to ask the audience to suggest their proposed destinations to the airline. Because of the final question, most of the comments are answers to it. Only one comment claimed that no airline is green, but at least Norwegian is outpaces American counterparts. There is no respond from Norwegian account. On the other hand, the post with the highest number of words used for commenting is uploaded on June 5th 2018. Norwegian celebrated World Environment Day with a photo of their plane and claimed that the most important thing an airline could do to lower its impacts on the environment is renewing its fleet. The company continued boasting that they have the youngest fleet in the world. Even though the post only got 59 comments, but there has been 1083 words used, 170% more than the April 11th 2017 post. Because the post is very straightforward about environmental feature of Norwegian’s fleet, the discussion in comment section is more relevant. Audience argued about which plane types should be better for the environment, and how Norwegian should do in order to optimise their carbon footprint. However, there has been no comment from Norwegian regarding this topic. Whether the company is aware of this discussion is out of the author’s knowledge. Again here the case company missed out a chance to engage with its stakeholders.

On Twitter, the tweet with highest C1 (124 replies), C2 (1422 words), and S1 (712 retweets) is from Icelandair. It is the same video that they posted on Facebook on the same day (6th June, 2018), which wins them the most popular post among the case companies. The situation is more or less the same. There have been only three replies regarding environmental aspects. Two of them disapprove the information that flying is in any way “green”, and one asserts that the commenter would not choose flying because flying produces too much pollution. No response has been found from Icelandair side. The company’s account answers some other comments regarding seat pitch, complaints, etc. However, they did not touch those environmental topics. This is another unfortunate occurrence. Not only Icelandair missed out dialogues that are environmental related, but also lost potential customers.

On YouTube, Icelandair again took the throne with that same video they posted on Facebook and shared on Twitter. The post was also posted on June 6th 2018. Using only 55 words (L1), the company attracted 291 comments (C1) where 5669 words were typed (C2). The most heated discussion is however about the improvements of the new aircraft model from older ones. A few comments related to environmental features, namely 14% reduction in fuel consumption. There is one comment expressed that the commenter would only be interested in flying when Icelandair have electric planes. This is a quite extreme opinion, but shows that passengers do care and know about the topic. Unfortunately, Icelandair again have not responded to those mentioned comments, closing opportunities to engage with the stakeholders.

To summarise this section, the most noteworthy point is that companies have not been engaging with their external stakeholders in dialogues about environmental topics. The social media used the most is Instagram, yet the platform utilised the most for environment-related posts is Twitter. Each airline has its own preferences for general and qualified posts. Due to distinguished characteristics, the studied platforms offer different data for the measure units. Last but not least, it is not necessary to create many posts in order to gain high interaction rates. Icelandair is lagging far behind the other three case companies regarding the number of environment-related posts, but they own the posts with the highest engagement rates across three social media platforms: Facebook, Twitter, and YouTube.

4.2 Profile: SAS (Scandinavian Airlines)

SAS post the most of their contents on Instagram. During the two-year period, the company has posted 551 times. This figure, however, is the lowest among four case companies. The others have used Instagram more extensively, especially Icelandair (1141 posts) and Norwegian (1063 posts). On average, each month SAS posts about 23 times (F1) on this platform. However, most of the qualified posts from SAS (56,25%) are found on Twitter. On this platform, the airline scored the highest rate of qualified posts among total posts (F2): 5,23% (in comparisons, Finnair scored 1,21%, Icelandair 0,99%, and Norwegian 2,81%). This is also *the best performance of any company on any platform*. The result was partly achieved thanks to a low posting rate in general of SAS on Twitter. The companies posted in total 172 tweets under the two-year period, the lowest figure among the four companies' (in comparisons, Finnair posted 1482 tweets, Icelandair 202 tweets, and Norwegian 640 tweets).

Consequently, Twitter produced the highest engagement rates from stakeholders. This platform triumphed clearly over the sharing rates. Twitter's S1 scored 205 shares and S2 reached 22,78 shares per qualified posts (Facebook's figures are both 7). The highest average number of comments per qualified post (C1) was found on Instagram (19,67 shares), and the highest of number of words in comments per qualified post (C2) was found on Facebook (463 words). However, Instagram's C2 reached only 129 and Facebook's C1 is

only 5. Meanwhile, YouTube's C1 and C2 are 19 comments and 231,33 words. These are not the highest but the most balanced. Twitter scored the lowest C1 (4,78) and C2 (100,33). Taking all data into consideration, Twitter and YouTube have arguably been the best media for SAS in gaining engagement from the audience. Twitter is for sharing and YouTube is for conversations.

TABLE 8 Collected data for SAS

		Facebook	Instagram	Twitter	YouTube
2017	F1	4,08	23,9	9,17	6,33
	F2	0%	0,70%	3,64%	2,63%
	L1	0	39	18,75	559,5
	C1	0	26	1,5	28,5
	C2	0	159,5	14,75	347
	S1	0	-	139	-
	S2	0	-	34,75	-
2018	F1	22,58	22	5,17	3,83
	F2	0,37%	0,38%	8,06%	2,17%
	L1	49	88	32,6	166
	C1	5	7	7,4	0
	C2	463	68	168,8	0
	S1	7	-	66	-
	S2	7	-	13,2	-
Total	F1	13,33	22,96	7,17	5,08
	F2	0,31%	0,54%	5,23%	2,46%
	L1	49	55,33	26,44	428,33
	C1	5	19,67	4,78	19
	C2	463	129	100,33	231,33
	S1	7	-	205	-
	S2	7	-	22,78	-

There are three main themes presented in SAS's qualified posts. The first one regards the airline's *CO2 compensation for all Youth ticket*. This type of ticket is tailored to passengers who are below 26 years old. It is claimed to be cheaper than normal ticket type. Young passengers contribute to the CO2 compensation scheme without paying any extra fee. It reassures young generation, who usually has higher awareness of environmental issues, to fly, knowing that their emissions would be compensated. Signitzer & Prexl (2008) inserted that one important task of CSC is to reinforce sales of sustainable products. SAS has been correctly practiced this approach here. In contrast to its competitors, the Youth ticket of SAS is an advantage for the company.

The second theme is *biofuel*. SAS actually use biofuels for their planes and invest in development projects for biofuels. The airline aims to use an amount of biofuels equals to the consumption needs for their domestic routes in 2030. This is an ambitious yet plausible goal. This is in accordance with reports from

SAS (2018a). The airline is proud of itself for being the only airline in Nordic who has actually used alternative fuels for their flights. As mentioned earlier in this paper, the piloted route Oslo-Bergen consumed 100 tones of biofuel. At the same time, SAS has been very active in supporting and investing in the productions and commercialisation of biofuels. They have of course been telling about this on the Internet constantly.

The last theme is about SAS's *new aircraft* - the Airbus A320neo. This theme has been mentioned the most times across platforms. SAS claims that this new type of planes could reduce up to 15-20% fuel consumption (see e.g. SAS, 2016, November 3). The company also works on improving aircraft's aerodynamics and weights, as well as in aircraft planning and management, in order to reduce environmental impacts. This act improves also economic efficiency. (SAS, 2018a)

Compared to the focuses of SAS in environmental issues (see SAS, 2018a), there are some themes missing from social media communications. The first topic is environmental adapted products. It is not quite clear even in the corporate report that which kinds of products would be more environmental adapted, and where those products would be mainly used. On social media, this is also not discussed and introduced. The second programme missing from communication is dialog/work with air traffic management, airports, and wet-release operators, etc. These contents might be condemned too technical and "dry" for the audience. That could be why they have not been presented (but so are aircraft's specifications). It would be more coherent to the sustainability report if these areas were also communicated via Web 2.0 platforms. Nevertheless, SAS has wide and rich sustainability agendas and actively broadcast their activities to the stakeholders.

The Instagram post on January 03rd 2017 attracted several comments addressing directly the post's content, which is about the use and investment of SAS in biofuels. While some participants expressed their sceptics, there is one comment showing appreciation towards these activities. However, there has been no response from SAS. Similarly, there is one suggestion in an Instagram post on October 26th 2016 that SAS should expand the CO₂ compensation scheme across all ticket types. There has also been no respond from SAS upon this subject. However, SAS was slightly more engaging with the audience on other platforms, especially Twitter. For example, in a tweet thread regarding biofuels on January 03rd 2017, when one commenter asked how much biofuels had been used in comparison to the total consumption of SAS' fleet, the company responded. Unfortunately, the response did not offer any figure but a promise that the question would be answered if the data could be found. There has been no more activity after that. SAS might have contacted the person privately. However, it would be much better if SAS posted in public so that everyone could access the information.

The best engagement of SAS in conversations with their audience was found on a tweet on July 04th 2018. This tweet quoted Lars Sandahl Sørensen, Group Director and COO at SAS, regarding the Youth ticket's CO₂ compensation initiative. One commenter mentioned the airline sector's goals for 2050 as a potential motivation for SAS in working actively on sustainability

agenda. The response from SAS is fairly informative and straightforward: “IATA has set [the] 2050 goals. Our 2030 goal to reduce our total emission with 25% is a step in [...] that direction and on the path for an even more ambitious SAS goal for 2050. (SAS, 2018, June 5)”

In short, SAS prefers Instagram to connect with stakeholders, but chooses Twitter to communicate about environmental topics. YouTube and Twitter are the best platforms for SAS to attract engagement from the audience, regarding sustainability issues. The company’s overall performance across social media platforms was good. On average, environment-related posts make up 1,37% of total posts (F2). This is the second best among the case companies (only lower than Norwegian’s 2,74%). Besides promoting its new aircrafts and their environmental-friendly features like other case airlines, SAS has also been advocating the CO2 compensation initiative for its Youth tickets, as well as painting itself as a green company that is actually investing and using biofuels. SAS has been moderate in term of participating in dialogues with its stakeholders. However, there is room for improvement. More detail information should be made available for the personnel that manage SAS’ social media accounts. In that way, information could be diffused on-demand just in time, the audience could be more engaging, and the company could achieve better communication efficiency.

4.3 Profile: Finnair

Twitter is the platform where Finnair has chosen to upload their contents the most. There have been 1482 posts created under this study’s timeframe. No other case company created as much as half of that figure (SAS: 172, Icelandair: 202, and Norwegian: 640). In fact, the number of tweets Finnair has posted is more than the other airlines’ combined. To put the figure into perspective, Finnair has tweeted roundly 62 posts per month (F1) (or 2 posts per day) for the last two years. The airline has also used Twitter most frequently for their environment-related posts. Finnair has in total tweeted 18 tweets concerning sustainability and environmental issues. That is 1,21% of all tweets (F2).

The engagement rates differ from platform to platform. It is not possible to establish a concrete case for any platform as the best social media choice for Finnair in order to gain more interactions with stakeholders. Facebook offers the highest comments per post (C1) at 23,75 comments (Instagram: 3, Twitter: 0,78, and YouTube: 7). YouTube produced the highest number of words in comments per post (C2) with 111,5 words (Facebook: 48,75, Instagram: 22, and Twitter: 13,11). There is only one qualified post on Instagram; therefore the data is not reliable enough to be used in comparisons here. As one may realise, Twitter has been doing poorly in C1 (0,78 comment) and C2 (13,11 words). However, this platform surpasses Facebook in total shares (S1) and shares per post (S2): 193 to 33 and 10,72 to 8,25, respectively. Factoring in the higher posting rate of Twitter, it could be argued that in general Facebook generates a

slightly higher engagement rate. Nevertheless, this finding has statistically low reliability and validity.

TABLE 9 Collected data for Finnair

		Facebook	Instagram	Twitter	YouTube
2017	F1	27,5	29,92	54,42	5,83
	F2	0,61%	0,28%	0,92%	1,43%
	L1	19	49	17,33	83
	C1	2,5	3	1,33	12
	C2	50,5	22	11,67	220
	S1	3	-	80	-
	S2	1,5	-	13,33	-
2018	F1	23,67	19,75	69,08	6,75
	F2	0,70%	0%	1,45%	1,23%
	L1	21	0	23,5	93
	C1	45	0	0,5	2
	C2	47	0	13,83	3
	S1	30	-	113	-
	S2	15	-	9,42	-
Total	F1	25,58	24,83	61,75	6,29
	F2	0,65%	0,17%	1,21%	1,32%
	L1	20	49	21,44	88
	C1	23,75	3	0,78	7
	C2	48,75	22	13,11	111,5
	S1	33	-	193	-
	S2	8,25	-	10,72	-

The main themes of Finnair's qualified posts range quite extensively. However, there are three main topics have been mentioned the most. Firstly, *Earth Hour* was repeated every year on different platforms. This is an international movement to raise awareness about environmental issues by inviting participants (both individuals and organisations) to switch off the lights in one hour. This movement started as a symbolic event in Sydney in 2007. It has been evolved into an international event that attracts millions of people around the globe. Earth Hours is self labelled itself as public-run initiatives, but has also been coordinated by WWF and other volunteer organisations. The ultimate goal of this initiative is to encourage everyone to engage in difficult conversations about climate change and environmental issues that have never been touched. (Earth Hour, 2018) Finnair has been an active member of this initiative.

Secondly, similar to other airlines, Finnair often boast about the renewal of their fleet, in this case, the new Airbus A350 XWB. This is the most significant environmental action of the company. This has helped Finnair in CO2 emission reduction but also noise reduction. (Finnair, 2018a) As in the sustainability report, Finnair does not mention about its older fleets on social media

platforms. Norra (Nordic Regional Airlines) operates the old airplanes. Some readers may argue that this is one example of green washing. Nevertheless, other airlines employ the same approach. It is simply strategic marketing communication and they have practiced it properly. The ethics of this approach are beyond the topic scope of this research.

Thirdly, Finnair mentioned its engagement in the production and use of renewable energy. The Finnair Cargo hub has been produced and utilised solar power, which covered about 10% of total its consumption need. This is in accordance with Finnair's sustainability report. (See more in subsection 3.4.2) Besides, the airline offers passengers to choose to support either the use of biofuels or the carbon capture initiative. Finnair evidently would like to bring sustainability topics closer to their customers and invite them to join in sustainability actions.

There are a lot more initiatives and activities that have not been mentioned in any form on any social media by Finnair. For example, there is not introduction of the continuous descent approach (CDA) in landing. This method reduces energy consumption. Perhaps Finnair considers that 1% of its total flights using CDA is not an attractive enough figure for the audience. Moreover, information about Finnair's cooperation with national and international parties in various schemes and agreements regarding sustainability are also not broadcasted on the airline's profiles. One possible explanation for this is that the information might be too heavy for social media. However, these activities are positive for the company image. Finnair should bring those topics closer to its stakeholders. The communication function, especially content marketers need to find a way to transfer heavy texts into light contents for social media posts. At the very least, Finnair should provide the audience with links and accesses to the information. In short, Finnair could communicate much more than it has been doing. The company has a lot of materials need to be put into use.

The post that attracted the most comments is a live stream on Facebook on July 18th 2018. In this live stream, Kati Ihamäki - Finnair's Vice President, Sustainable Development - discussed the possibility for passengers to support the use of biofuel or the carbon sinking initiative. The language used is Finnish, and due to the writer's insufficient skill in Finnish, the whole content of the live stream could not be analysed much further. Nevertheless, the audience generated totally 87 comments and 13 shares. However, most of interactions were made by emojis. Therefore, the number of words reached only 74, less than one word per comment. Consequently, there has been no deep conversation occurred during the live stream regarding its topic. Nevertheless, the content has been successfully communicated to the audience.

In contrast, there are two posts on Twitter on June 29th 2018 and July 17th 2018 that generated higher number of words in comments per post (C2): 102 and 64 respectively. Both tweets present advantages of Airbus A350, especially regarding fuel efficiency and emission reduction. In total, the tweets attracted six replies, which consist of 166 words. This amounts to nearly 30 words per comment. Moreover, the comments actually addressed the main topics: the Airbus A350. However, the only reply from Finnair engaged in a conversation

about potential flight route with this new aircraft type, not regarding its environmental-related features. This is a mistake because there are a lot of materials about the topics available. It is questionable if this is a strategy, or the person in charge simply has no access to and/or no broadcast authority over the information. The needed conversations have not been engaged.

Finnair is highly active on social media, ranked first among the cases. Across the four platforms, the company has created 2843 posts during a two-year period. This is 134% more than the figure of the next ranked airline (Norwegian with 2120 posts), and higher than the combined numbers of posts from SAS and Icelandair (1165 and 1625 respectively). On average, every day under the two-year studied period, Finnair has produced approximately four (04) posts across the social media platforms. Finnair is especially active on Twitter, where it has created both the most number of general- and qualified posts (1482 and 18 posts). However, the engagement rates from the audience are slightly better on Facebook. On another perspective, Finnair has discussed a wide range of topics, but in focus are the new fleet, renewable energy, and Earth Hour. Ineffectually, there are more topics, which were mentioned in the corporation's sustainability report, have not been realised into contents. The overall performance of Finnair across platforms (F2) is 0,88%, ranked only higher than Icelandair (0,37%). This is mainly due to the excessive posting rate on Twitter. In additional, making the same mistake as other airlines in this study, Finnair has not been active enough towards stakeholders' engagements in environmental-related conversations. Nevertheless, Finnair has been considerably enthusiastic in educating and introducing sustainability topics to external stakeholders. Whether merely raising the questions is enough or there is a need for more involved participation in two-way dialogues is open for further studies.

4.4 Profile: Icelandair

Icelandair prefers Instagram as their major social media platform. Within the studied timeframe, the company created 1141 posts. This is the highest number among four airlines (SAS: 551, Finnair: 596, and Norwegian: 1063). This is also equivalent to approximately 47,54 posts per month (F1), or three (03) posts every two days. However, there is *no post* related to environmental topics on the airline's Instagram feed. This platform is used mainly as an inspirational board for travellers and visitors. Beautiful and professional photos of Iceland are the focuses of Icelandair's Instagram profile. On the other hand, YouTube is the platform where Icelandair have uploaded the most qualified posts (three (03) posts). This helps measure unit F2 (qualified posts per total posts) on YouTube reached 3,33%, the highest among four sample companies (SAS: 2,46%, Finnair: 1,32%, and Norwegian: 1,16%).

Facebook produced the highest engagement rates; despite there is only one (01) post on this platform. The total number of comments (C1) is 274, the total number of words used in comments (C2) is 6485, and the total number of shares (S1) is 977. Because there is only one post, the rate of total shares per post

(S2) is also 977. On the opposite side of the spectrum, Twitter gained the lowest engagement rates. There are two (02) qualified posts on Twitter during the studied period. In contrast to Facebook, Twitter's C1, C2, S1, and S2 are 62 comments, 711 words, 758 shares, and 379 shares, respectively. On the middle ground, YouTube's C1 and C2 are 97 comments and 1889,67 words, resulted from three (03) qualified posts. Instagram is excluded from the comparisons here, because there is no qualified post on this platform.

TABLE 10 Collected data for Icelandair

		Facebook	Instagram	Twitter	YouTube
2017	F1	5,58	58,17	9,25	3,92
	F2	0,00%	0%	0%	2,13%
	L1	0	0	0	74
	C1	0	0	0	0
	C2	0	0	0	0
	S1	0	-	0	-
	S2	0	-	0	-
2018	F1	10,42	36,92	7,58	3,58
	F2	0,80%	0%	2,20%	4,65%
	L1	42	0	26	54,5
	C1	274	0	62	145,5
	C2	6485	0	711	2834,5
	S1	977	-	758	-
	S2	977	-	379	-
Total	F1	8	47,54	8,42	3,75
	F2	0,52%	0%	0,99%	3,33%
	L1	42	0	26	61
	C1	274	0	62	97
	C2	6485	0	711	1889,67
	S1	977	-	758	-
	S2	977	-	379	-

The major themes across Icelandair's social media platforms are Icelandic tourism and Icelandair's special Stopover programme, but both are not in focus of this study. Regarding their qualified posts, the main theme is their new fleet, especially the new Boeing 737 MAX. The video about this new aircraft type was posted simultaneously on Facebook, Twitter, and YouTube on June 6th, 2018. The next paragraph discusses and examined deeper into this post.

The post's wordings are slightly different on three platforms. The main idea is inviting the audience to find out more about the new Boeing 737 MAX. Icelandair claimed that this type of aircraft is revolutionary for the environment and passenger, and is the new way of flying (see Icelandair, 2018 June 6 a, b, & c). This content is not purely environmental related. Across the three platforms, the content gained totally 689 comments, which contain 13576 words. The video has been shared 1689 times. That means roughly 229 comments, which contains

4525 words, and 845 shares per platform. This is an extensive achievement for Icelandair, at least regarding the audience's engagement. However, as discussed in subsection 4.1, there has not been much response from the company towards comment and arguments that are related to environmental issues. This is an adverse situation for Icelandair. Not only the company has not addressed the audience's arguments, it missed out opportunities to persuade sceptical travellers who do not prefer flying due to environmental reasons. The image of a green company might get damaged if Icelandair does not reinforce their information and direct the conversations in their favour.

Similar to other airlines, Icelandair has also left out potential topics for its sustainability communication. There are more usable materials from the company's sustainability agenda, at least according to the corporate report. One of the most regrettably missed topics is the use and disposal of sustainable material. Another is the internal initiative to encourage employees to adopt more environmental friendly practices, such as public transports. The airline's sponsorship to the Icelandic Forestry Association's Open Forest project could also be proudly introduced. (In the case of Norwegian, the company has extensively promoted its cooperation with the Global Climate Institute for the project "Plants for the Planets". More about this can be found in the next section.) However, as discussed in subsection 3.4.3, Icelandair published more texts than real figures and data regarding its sustainability activities. Therefore, it might not be too surprising that Icelandair has not been so actively communicating environment-related topics on social media. Its digital communication strategy seems to put the emphases on other topics.

In conclusion, Icelandair is considerably active on social media, especially on Instagram. However, the company has not touched sustainability issues that much in comparisons with other airlines within this study. Icelandair has zero, one, two, and three qualified post(s) on Instagram, Facebook, Twitter, and YouTube, respectively. In consequences, the airline's total performance across platforms (F2) is 0,37%, less than a half of the next ranked company's figure (Finnair: 0,88%) and about seven times lower than the first ranked company's (Norwegian: 2,74%). This is extremely *low* and *unimpressive*. Even though Icelandair achieved an extremely high engagement rate from the audience, the extremely low posting rate of qualified posts reduces total efficiency and long-term effects. It is unreliable to interpret the company's data into positive conclusions, although the figures are very high. The amount of data and an occurrence frequency needed for statistically valid conclusions has not been found. On qualitative analysis perspective, it is clearly not necessary to post a lot in order to get a wide attention from the audience. Nevertheless, if the company does not communicate sustainability topics frequently enough to external stakeholders, the total effect is arguably mediocre. This is a very interesting situation that should be explored further in future research.

4.5 Profile: Norwegian Air Shuttle (ASA)

Norwegian ranked second among the case companies in posting rate on Instagram. The airline posted 1063 times on this platform within the studied two-year period (behind Icelandair with 1141 posts, but beyond SAS and Finnair with 551 and 596 posts). This amount resulted to roughly 44 posts per month (F1) or three (03) posts every two days. Similarly, the majority of environment-related posts were found on Instagram, 26 out of 58 across the four platforms, to be exact. This is *the highest number of qualified posts from any case company on any social media platform*. It also makes up almost a quarter (25%) of the total number of qualified posts in this study (26 out of 105 posts). However, Norwegian's Facebook account scored a higher rate of qualified posts per total posts (F2) - 4,92%, in comparison to Twitter's, Instagram's, and YouTube's figures - 2,81%, 2,45%, and 1,16% respectively. This is because there have been much fewer posts on Facebook (in total 244 posts) than on the other platforms (with the exception of YouTube), especially on Instagram as mentioned above.

TABLE 11 Collected data for Norwegian Air Shuttle (ASA)

		Facebook	Instagram	Twitter	YouTube
2017	F1	10,08	65,08	28	4,5
	F2	4,96%	1,66%	2,68%	1,85%
	L1	31,5	42,62	17,33	40
	C1	29,67	22	2,44	2
	C2	527,17	161,85	25	48
	S1	72	-	101	-
	S2	12	-	11,22	-
2018	F1	10,25	23,5	25,33	9,92
	F2	4,88%	4,61%	2,96%	0,84%
	L1	60,67	66,54	34,22	100
	C1	30,17	32,31	17,33	2
	C2	1005,33	421,38	427,56	53
	S1	79	-	120	-
	S2	13,17	-	13,33	-
Total	F1	10,17	44,29	26,67	7,21
	F2	4,92%	2,45%	2,81%	1,16%
	L1	46,08	54,58	25,78	70
	C1	29,92	27,15	9,89	2
	C2	766,25	291,62	226,28	50,5
	S1	151	-	221	-
	S2	12,58	-	12,28	-

Instagram is also the platform that has improved the most in year-on-year's frequency of qualified posts per total posts (F2). In 2017, this figure stood at 1,66% but increased more than double in 2018 and reached 4,61%. Under the same period, YouTube's F2 decreased by more than half, from 1,85% in 2017 down to 0,84% in 2018. This phenomenon might be resulted from the opposite development of the two platforms' frequency of posts per month (F1). For the period 2017, Instagram's F1 is 65,08 and YouTube's is 4,5. Under the period 2018, Instagram's F1 decreased almost three time, down to 23,5, while YouTube's increased by almost double, up to 9,92. Facebook's and Twitter's figures are pretty stable during the two-year studied period (see more in table 11).

Facebook is the channel that achieved highest engagement rates for Norwegian. The platform ranked first in three measure units: number of comments per qualified post (C1) - 29,92 comments, number of words used in comments per qualified post (C2) - 766,25 words, and shares per qualified post (S2) - 12,58 times. Particularly, Facebook's C2 is more than the combined figures of the other three platforms (Instagram: 291,62, Twitter: 226,28, and YouTube: 50,5; in total: 568,4). Instagram follows closely in measure unit C1, at 27,15 comments per qualified posts. However, Twitter and YouTube have been lagging far behind in this perspective, with their C1 figures are 9,89 and two (02), respectively. Interestingly, the total number of shares (S1) of Twitter is higher than Facebook's - 221 to 151. However, because there are more posts on Twitter, the efficiency of Facebook is deemed to be slightly higher: Facebook's and Twitter's S2s are 12,58 and 12,28 shares per qualified posts. Also from the data, it has been evidently proved that YouTube generated the lowest engagement rates for Norwegian. (This platform's C1 is 2 comments and C2 is 50,5 words.) In other words, Norwegian's YouTube account has been considerably inadequate in audience engagement aspect.

Norwegian achieved generally good engagement rates. The average C1 and C2 across platforms reached 17,24 comments per qualified post and 333,66 words in comments per qualified post. The company's posts on Facebook and Twitter have been shared in total 372 times, or 12,43 shares per post. However, most of the comments did not respond directly to the main topics of the posts. Norwegian witnessed a common problem among airlines: passengers bring their complaints onto whichever post they want. Out of the studied company, Norwegian has the most serious situation. The majority of comments are about cancelled flights, lost luggage, etc. Those comments dilute the conversations regarding environmental issues and reduce the validation of the data from Norwegian's social media activities.

One typical example of interactions between Norwegian and the audience is an Instagram post on June 5th 2018. In this post, Norwegian asserted that the most important thing an airline can do to reduce its environmental impacts is to renew its fleets. The company went on to promote its youngest and greenest fleet. Among the comments, besides unrelated opinions, there are some that addressed the airline's intended content. Part of the audience expressed their affection and adore towards Norwegian and its fleets. On another hand, some stated their disgust and disappointment. At the same time, the others discussed

about Norwegian choices of planes and suggested better options. Throughout the thread, Norwegian has not answered or responded. As argued earlier, this is an unfortunate situation. The airline has been a bit more active on e.g. Facebook in replying the audience's comments. However, the frequency of two-way dialogues is not as high as it should, especially when it concerns environmental topics.

There are two main themes being mentioned repeatedly in the contents Norwegian posted across four platforms. First of all, just like other airlines in this study, the company constantly promoted its *new fleets*. Norwegian took this theme even more seriously, and communicated it excessively to the audience. The company claimed that it has one of the *youngest and greenest* fleets in the world (see e.g. Norwegian, 2018, June 5). The airline's fleets have an average age of 3,6 years old (Norwegian, 2017, December 23). Norwegian expects deliveries of new airplanes, namely Boeing 787 Dreamliner, Boeing 787 MAX, and Boeing 787-800. The 787 Dreamliner is claimed to be the most environmental-friendly option available, with 20% less emission than other comparable types (Norwegian, 2017, December 23). All of these contents are closely in line with the information presented in the airline's corporate report (see more in section 3.4.4). In general, Norwegian has reduced 30% of its emission per passenger kilometre since 2008, thanks to continuously renewing its fleets (Norwegian, 2018, August 3).

The second repetitive theme is an initiative called "*Plant for the Planet*". Norwegian has been in cooperation with the Global Climate Institute to plant thousands of trees around the world. (See e.g. Norwegian, 2017, December 19) Even though this theme has been addressed much less frequently than the first one, the audience would possibly get enough impression upon the topic and remember this initiative from Norwegian, thanks to rather high amount of posts. Here again, high communication frequency might create better efficiency for CSC.

Regardless Norwegian's substantially active behaviour on social media platforms, the airline fell to communicate all of its sustainability agendas to external stakeholders (at least according to the information from the group's annual report). One activity has been left out is similar to Finnair: the continuous descent approach (CDA). Additionally, the method used for aircraft washing, which is claimed to reduce carbon emission by approximately 16 thousands tons per year (Norwegian, 2018), has not been mentioned. As discussed in subsection 3.4.4, the annual report contains more texts than statistical figures, as in the case of Icelandair. This might again prevent Norwegian from diffusing the information to a broader audience. Nevertheless, this is another case of materials have not been exhaustively utilised.

Norwegian has produced *the highest amount of qualified posts* among the studied airlines, more than a half of the total amount (58 out of 105 posts). Its *overall performance across platforms also ranked first* - 2,74% (F2). This figure is twice as much SAS', who ranked second with 1,37%, and almost eight (08) times higher than Icelandair's, who ranked last with 0,37%. It could be argued that Norwegian ASA is evidently *the most active company* in this study regarding communicating environmental topics to stakeholders. Norwegian uploads most

of its contents onto Instagram (70,22% of the company's total social media posts). The contents concerning environmental topics have also been posted mostly on Instagram (26 posts under the two-year studied period, 44,83% of the company's total qualified posts). Content-wise, Norwegian promotes heavily its constantly renewed fleets, claiming that they are one of the youngest and greenest fleets in the world. Besides, the company exhibits its involvement in different sustainability initiatives and programmes, e.g. "Plant for the Planet". Despite of attaining the most substantial achievement among four case companies in this study, Norwegian still shares common flaws: leaving out potential materials for social media contents and being inactive in dialogues with stakeholders on Web 2.0 platforms, especially regarding environmental topics.

5 DISCUSSIONS & CONCLUSIONS

This chapter starts with a summary of the whole study. Responses to the first research question could be found in section 5.1 and to the second research question in section 5.2. The findings and managerial implications of this study are presented and discussed in comparisons with findings from prior studies. Last but not least, the author examines limitations of his project. Base on the limitations, this paper proposes directions and ideas for future research.

5.1 Summary of this Study

Sustainability has become a major part in doing business. Companies around the globe are embracing this concept in their operations. Current studied have shown that sustainability helps companies to maximise economic benefits and provides stakeholders with other benefits. Communication about sustainability topics, however, is not an easy task for organisations. Corporate sustainability communication (CSC) has been founded as an academic branch and practical tool to assist companies in conducting this activity properly and effectively. In the era of social media, CSC faces challenges and opportunities. Web 2.0 platforms create platforms where companies and stakeholders could engage in dialogues regarding sustainability subjects. The special characteristics of these media make traditional marketing communication practices out-dated, and there has been a need for more appropriate approaches.

Many scholars have conducted research on social media and how companies should participate in online communication with customers in various topics. Some of the studies paid focuses on sustainability. Nevertheless, sustainability in those studies encompasses all three pillars of sustainability, namely economic, social, and environmental aspects. There is a lack of research on each element of the triple bottom line. Therefore, this master degree thesis work would like to *explore the current situation of companies in using social media for communicating with external stakeholders regarding one chosen pillar of sustainability – environmental aspect.*

Aviation industry was chosen for this study. The reason is that this industry has commonly been condemned as a major pollution-contributor. It would be intriguing to learn how airlines have been working on CSC and how they could improve their practices. The geographical scope of this study is Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden). Those scopes ensure that the researcher, within his finite resources and abilities, could finish the study accordingly. The selected airlines, which makes up this research' sample, are Scandinavian Airlines (SAS), Finnair, Icelandair, and Norwegian Air Shuttle (ASA). Those companies were chosen after a series of minor preliminary research.

This study is a deductive research. The data was collected and analysed on a longitudinal basis, using both quantitative and qualitative content analysis methods. There is no standard set of metrics to measure social media communication. This research employed a framework that was created specially for the research problems and questions. The researcher built this framework based on examples and suggestions from previous studies.

This research found out that companies have been fairly active on social media. Instagram is the platform where case companies have posted most frequently. On the other hand, Twitter has been used the most for environment-related posts. Company-wise, SAS, Icelandair, and Norwegian have been most active on Instagram, while Facebook is the choice for Finnair for uploading contents. However, when it concerns environmental issues, SAS and Finnair turn to Twitter, Icelandair chooses YouTube, and only Norwegian stays with Instagram. Each company have achieved different rates of audience engagement on different platforms. In general, most companies gained high interaction rates on Facebook and Twitter. Norwegian has been the most active company in communicating with stakeholders about environmental topics across four platforms under this study. Icelandair ranked last, yet it owns a content that has ignited enormous reactions from the audience. SAS and Finnair have been fairly decent in working on their tasks. *These findings suffice to answer the first research question of this study* (see section 1.2).

Lodhia (2014) conducted a research about CSC via web-page communication. He found out that the reduced initial costs for setting up the channels (compared to traditional ones such as print materials, TV advertising, etc.) are the major influence over managers for choosing digital platforms to communicate sustainability with the audience. Tiago and Veríssimo (2014) confirmed this in their paper. Social media platforms offer even lower costs compared to Internet websites. Companies may pay for additional services and features, but in general the platforms are free to use. Consequently, companies can make tests and trials with different social media platforms to see which one(s) suits best for their purposes, without being afraid of losing substantial investments. This brings out economic efficiency for the companies. The findings might explain why all four case airlines have been considerably active on those channels. The finding in this study reconfirm a trend of using digital platforms, especially social media, for CSC, thanks to their low investment requirements. The researcher of this paper did not examine if case companies have paid anything for their communicating operations across platforms.

Nevertheless, advertising is often the main form of paid-service for businesses on social media, and it is not included in the scope or interests of this study. Therefore, the author did not explore that aspect much further.

Surprisingly, sustainability communication via corporate report (in both printed and digital forms) is still considered the primary approach for companies (Lodhia, 2014) and in general firms assign most of their resources for environmental report, following by economic- and then social reports (Gill et al., 2008). This phenomenon is similar with the findings of this study. Sample companies' sustainability reports contains much more and in detailed information, especially for their environmental activities. This study does not emphasise on economic and social reporting; therefore the assertion of Gill, Dickinson, and Scharl could not be fully confirmed. Nevertheless, it is evident that four case companies have put more resources in their reports than social media posts, regarding sustainability and environmental aspects. Moreover, there are data and materials, which are contained in those corporate reports, have never been realised into contents for social media. This unbalance is unfortunate and will be discussed more in the next section. The public (especially environmentalist and sustainability activists) might consider this practice "green wash", or in McDonagh (1998)'s words: "communication by capitalists with strategic intent (pp. 607)". On a different perspective, the reports from sample companies are well produced. Readers could find a lot of information regarding the companies' agendas and activities in sustainability field. Data and figures were showed and illustrated in easy-to-understand methods. However, as discussed earlier, some environment related aspects were mentioned merely with words. Statistical and realistic figures are missing quite often. The risk of using CSC as cosmetic appeal for companies still exists, just like Anderson (2005. Cited by Signitzer & Prexl, 2008) and Dach and Allmendinger (2014) have warned in their papers.

The evidences of customer engagement on webpage platform have been found but in minor scale, not as high as the managers expected (Lodhia, 2014). On contrary, this study's collected data shows that the audience has been fairly active in conversations about environmental issues. The difference might come from distinguished characteristics between webpages and social media. As presented in section 2.2 and 2.3, social media offer a more democratic and open place for everyone, which give CSC activities both opportunities and challenges. The audience are much more proactive on Web 2.0 platforms. They have more tools for interacting with companies than on webpages. Real-time conversations could be engaged and the flow of information could be speeded up remarkably. The problem found here in this study is that the case companies have not been interacted adequately with the audience. This is a waste of resources, where companies do not maximise social media's advantages in order to produce positive results and gain valuable benefits. Lodhia (2014) also confirmed that the companies could not continually manage expectations from stakeholders for real-time communications, even on webpage environment. This topic has been mentioned in the previous chapter and will be discussed further in the next section.

5.2 Managerial Implications

This section provides answers to the second research question of this study (see section 1.2). It summarises and discusses the managerial implications emerging from the research findings and content analyses. Besides, the author attempts to insert several suggestions for companies to improve communication activities towards external stakeholders via social media platform regarding environmental issues. The focus is how to attract more engagement from the audience. It is expected that the advice would help organisations in effectively building a reliable green profile on the Web 2.0 platforms. Prior researches are also mentioned at some points to support the discussions.

First of all, Facebook and Twitter are the platforms that generate the highest engagement rates from the audience. In this study, Facebook has particularly proved to be the most effective tool for companies. For example, Finnair, Icelandair, and Norwegian ASA have received high stakeholder reaction rates on this platform. Twitter in turn provided high rates for SAS and Finnair. There could be many explanations for this phenomenon. However, a fundamental reason is that Facebook has a huge user base, which is a highly valuable advantage for companies to send their messages to more people. On the other hand, Twitter facilitates the sharing of posts (hence diffusing of information and contents) thanks to its special characteristic. That is an effective tool for CSC to spread its contents more widely and to more potential audience. As a conclusion, it seems to be advisable for companies to connect with the audience via Facebook and Twitter to conduct communication and conversations about environmental issues.

Secondly, videos get more engagement from the audience. Icelandair's video for its new aircraft was an important achievement for the company. The reactions from the audience have been enormous. The video has also been shared widely. Similarly, the Facebook live stream of Finnair has gained considerable success. This is in line with Dach and Allmendinger (2014)'s advice. Videos can help companies to illustrate and present information in a realistic and understandable way. They are more interesting, as well as easier for viewers to digest. Companies could pack more information into a video than e.g. a photo and especially a body of text. With the same amount of information, a text would be too long and heavy to read. Nowadays, people mainly use handheld devices to surf social media; therefore videos would get more attention from users. However, a video must be wisely made and straightforward. The majority of the audience checking their social media on daily commuting or in short breaks; a long content would easily be skipped in favour of more compact pieces of information.

Interestingly, as proven in the case of Icelandair, it is not necessary to post a lot of environment-related contents in order to get more engagement from the audience. The company has been left far behind in term of total number of post regarding environmental topics. However, Icelandair accomplished the biggest success among the studied companies for a single content. There have been a lot

of comments that compliment this content, which is a video. The implication here is that quality wins over quantity. It is cliché but true. If a company puts more effort into creating a well-made content, its social media post(s) might gain substantial results.

However, *more frequent communication is advisable*. Lodhia (2014) also suggested that timely communication is a key element for sustainability communication. It is true that Icelandair landed a significant win, but on a big picture the effectiveness is not so powerful through time. The conversation rates (C1 and C2) of Icelandair are apparently desirable. Yet if one considers the total of comments and words used in comments in all posts across the platforms and through out the studied two-year period, Norwegian has the advantage. Norwegian attracts 1247 comments; almost double the comments Icelandair has received (689 comments). As a result, Norwegian collected totally 20951 words from the comments, while the audience has typed only 13576 words towards Icelandair's posts. Moreover, the comments have been spread out more evenly during the two-year timeframe in the case of Norwegian. That is not the situation for Icelandair. Marketing departments usually hope for a big impact for their contents. That is understandable. However, constantly keep in touch with stakeholders is a more effective approach on a long-term perspective.

An utmost important lesson from the studied cases is that *company should be more active in dialogues with stakeholders*, particularly regarding environmental topics. Nwagbara and Reid (2013) emphasised this as an impact of new media on corporations, namely issue management in communication (see Table 1). Kaplan and Haenlein (2010) encouraged companies to be social, polite, and proactive on social media. Doing so would help them to establish fruitful relationships with stakeholders. In this study, all of the airlines have not been engaging and responsive enough. It is not advisable to force the public to agree with companies' opinions, but that does not mean the companies should stay outside of the conversations. If the audience give contents positive responses, companies should acknowledge and show gratitude. If the opposite scenario happens, companies should address the issues and try to fix them. In case the discussions/conservations go toward directions that are unfavourable for the companies, the companies should defend themselves by getting involved and offering more information in order to clarify the issues. Those actions would help the audience to gain a clearer picture of the topics and evaluate the companies' sustainability initiatives in a less biased way. In any case, the companies should definitely engage more in the dialogues emerging in their posts on social media.

More contents from the company's sustainability activity data should be used for social media communication. Interestingly, Du, Bhattacharya, and Sen (2010) noted that CSC contents from corporate sources are more likely to face sceptics and resistance than from non-corporate sources. This might explain why companies hold on to some of the information regarding their environment agendas. In this study, most of collected contents are from corporations themselves nevertheless. There should not be any hesitance to broadcast more information to the audience, because there will be sceptical opinions anyway.

The key approach to deal with criticism is the managerial implication discussed in the previous paragraph, being more active and engaging in two-way dialogues with the audience. In addition, there is a need for fresh, interesting, objective, and credible information, as advised by Kaplan and Haenlein (2010) and Dach and Allmendinger (2014). Self-absorbed, self-portrayal appeal, and advertising should be avoided. Transparency and accountability are also required for effective communication (Jones et al., 2009). This would improve the company profiles' attractiveness and reliability, as well as prevent the risk of being accused by the public of green wash, as mentioned in the previous section. McDonagh (1998) emphasised that "public accountability and openness are [...] key dimensions (pp. 617)" for a communication project to survive on a long-term perspective.

One implication tailored for aviation industry: there are two main themes that attract a lot of attention from the audience. First is *the renewal of the fleets*. Second is *the use of renewable energy*, particularly biofuels nowadays. The studied airlines in this research employed the first theme extensively. All companies praise their new airplanes and advertise their renewed fleets assiduously. For some people, flying is still a luxury, and planes are quite extravagant. For the others, planes are like cars or boats, a hobby of sort. Therefore, contents about new airplanes are often met by positive and enthusiastic reactions. Besides, ecological awareness among passengers is on the rise. The passengers know about negative impacts of aviation industry towards the environment and their own carbon footprints. New airplanes reduce the environmental impacts of flying. This encourages and reassures passengers to keep choosing to fly. This is extremely important for airlines, because it relates to economic and financial performances. Here, sustainability agendas strongly support business operations.

The second theme, on the other hand, has been exploited insignificantly. Only SAS and Finnair touched this topic in their posts. In reality, the production and use of biofuels in fuelling aircraft tanks are very much limited. SAS is the only airline that has actually been using biofuels for their planes. That is why there is little to none material for the companies to promote this issue to stakeholders. Nevertheless, renewable energy does not mean merely biofuels for planes. It concerns also the energy consumed in company operations, e.g. office energy. There are much more aspects in this area, which companies could make improvements. That would consequently provide more contents for the company's social media activities.

To summarise this section, there are seven major managerial implications for companies in using social media for communicating environmental topics to external stakeholders. (1) Facebook and Twitter are the most optimised choices for posting contents. (2) The type of contents that would likely attract the most engagement from the audience is video. (3) There is no need to create an abundant amount of posts to gain high interaction rates. However, (4) being in touch constantly with stakeholders and communicate more frequently about sustainability topics are better approaches on a long-term perspective. Moreover, (5) companies should utilise more information from their sustainability activities for CSC contents, but the contents should be interesting

and credible. (6) It is highly important for companies to engage more actively in dialogues with the audience on social media platforms, particularly regarding environmental issues. Last but not least, (7) for aviation industry, the renewal of aircraft fleets and the use of renewable energy (especially biofuels for airplanes) are the two most attractive themes for contents. Company should explore these topics more for CSC activities.

5.3 Limitations and Suggestions for Future Research

Regardless all the efforts and hard works of the researcher, this study is by no mean perfect. Nevertheless, the project has been considerably successful in answering the research questions. Research findings have also been interpreted into managerial implications and suggestions for improvements. Those aspects were mentioned in previous sections. In this section, the author attempts to self-examine several limitations of this study. These limitations could be used as basis for future research.

Concerning this research scope, one could easily recognise a couple of limitations. This study focuses only on the aviation industry. Single industry is a common choice for many scholars in previous researches (e.g. see Kutzschenbach & Brønn, 2006; Ciletti et al., 2010; Mallen et al., 2013; Lodhia, 2014; and Dach & Allmendinger, 2014; etc.). Nevertheless, new research could explore the situations in other industries, or even employ cross-industry method (as has been used by Gill et al., 2008; Park & Kim, 2014; and Tiago & Veríssimo, 2014; etc.). Besides, this research' geographical scope covers merely Nordic countries. Signitzer and Prexl (2008) claimed that CSC is more likely to happen in developed countries with liberal markets. Nordic countries evidently belong to that definition, and the case companies have confirmed Signitzer and Prexl's theory. Therefore, it should be interesting to conduct the study in other countries, especially in developing regions of the world, to gain comparative results and confirm (or defy) Signitzer and Prexl's assertion.

In additional, this study was conducted on the company perspective. More studies could be conducted on the other side of the conversation. That means employing methods that collect more and deeper data from the audience regarding CSC from companies, as Dach and Allmendinger (2014)'s approach. The findings would supplement for the body of knowledge about the effects and importance of social media for CSC, especially in environment-related issues.

Besides, the researcher collected data from only four social media platforms and under a two-year period. This is due to the restricted resources and limited capabilities of the author. Other researcher could expand the scopes into more social media platforms and/or conduct the data-collecting task for a longer period of time. That would reinforce the validity and reliability of findings.

After conducting their research on web-based CSC, Lodhia (2014) and Dach and Allmendinger (2014) found out the importance of web design and

web utility upon the engagement level of the audience. Dach and Allmendinger (2014) even claimed that these features are more important than contents. This study did not include social media platforms' designs into considerations. Future studies could attempt to discover different effects of different platforms, with those platforms' designs and functions as the base for analysis. The findings might explain why companies choose certain options for their CSC and/or measure distinguish performance of each platform.

The qualitative content analysis employed in this study provided meaningful contribution to the whole project. However, because of its very nature, presumptions and subjectivity might have occurred. The researcher has done everything within his capability to counterbalance this issue. Moreover, the analyses in this study might not meet expectation of some readers. This is again due to the resource boundary within which the author worked. Researchers with better situations should invest more time and efforts in the analysing task, so that the findings would be more in-depth. Finally, as discussed earlier, this paper selected environmental issues from sustainability as its central topic. Studies in future may take other elements of sustainability under the microscope, especially social aspect.

One intriguing topic mention by Lodhia (2014) is the effects of organisational restructuring on CSC strategy. During his research, there had been several changes in structures at case companies, and consequently changes in activities on webpage CSC activities. This research was also witnessed changes at sample airlines during the research time. The collected data also point out some clear patterns of changes in the use of social media in general and for environmental topics. Unfortunately, as Lodhia (2014), this study did not work on identifying the actual correlation between organisational restructuring and CSC strategy change, because it is not the main focus. Future studies should explore this relationship further.

5.4 Final Words

Communicating with external stakeholders on social media is not a simple task. It becomes even more difficult when the topics are environment-related. The case companies in this study have been conducting their CSC tasks fairly well. However, there are rooms for improvements.

This paper identified several implications from the research findings and suggested several suggestions for the management on how a company should handle CSC activities towards external stakeholders via Web 2.0 platforms, particularly regarding environmental issues. The author hopes that this study could assist companies in enhancing their communication practices and attracting more interactions from the audience. It is also hoped that future studies would advance further the findings in this research, so that the knowledge body in this field could be enriched, benefiting both of the academic and business spheres.

There is no easy conversation. One just has to engage in the process and learn from mistakes to become better. That is the final message this paper would like to deliver.

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APPENDIX 1 Total posts across the platforms from companies

			SAS	Finnair	Icelandair	Norwegian	Total
Facebook	General posts	2017	271	330	67	121	789
		2018	49	284	125	123	581
		Total	320	614	192	244	1370
	Qualified posts	2017	1	2	0	6	9
		2018	0	2	1	6	9
		Total	1	4	1	12	18
Instagram	General posts	2017	287	359	698	781	2125
		2018	264	237	443	282	1226
		Total	551	596	1141	1063	3351
	Qualified posts	2017	2	1	0	13	16
		2018	1	0	0	13	14
		Total	3	1	0	26	30
Twitter	General posts	2017	110	653	111	336	1210
		2018	62	829	91	304	1286
		Total	172	1482	202	640	2496
	Qualified posts	2017	4	6	0	9	19
		2018	5	12	2	9	28
		Total	9	18	2	18	47
YouTube	General posts	2017	76	70	47	54	247
		2018	46	81	43	119	289
		Total	122	151	90	173	536
	Qualified posts	2017	2	1	1	1	5
		2018	1	1	2	1	5
		Total	3	2	3	2	10
Total	General posts	2017	744	1412	923	1292	4371
		2018	421	1431	702	828	3382
		Total	1165	2843	1625	2120	7753
	Qualified posts	2017	9	10	1	29	49
		2018	7	15	5	29	56
		Total	16	25	6	58	105

APPENDIX 2 Qualified post per total post rates across the platforms from case companies

	SAS	Finnair	Icelandair	Norwegian	Total
Facebook					
2017	0,37%	0,61%	0,00%	4,96%	1,14%
2018	0,00%	0,70%	0,80%	4,88%	1,55%
Total	0,31%	0,65%	0,52%	4,92%	1,31%
Instagram					
2017	0,70%	0,28%	0,00%	1,66%	0,75%
2018	0,38%	0,00%	0,00%	4,61%	1,14%
Total	0,54%	0,17%	0,00%	2,45%	0,90%
Twitter					
2017	3,64%	0,92%	0,00%	2,68%	1,57%
2018	8,06%	1,45%	2,20%	2,96%	2,18%
Total	5,23%	1,21%	0,99%	2,81%	1,88%
YouTube					
2017	2,63%	1,43%	2,13%	1,85%	2,02%
2018	2,17%	1,23%	4,65%	0,84%	1,73%
Total	2,46%	1,32%	3,33%	1,16%	1,87%
TOTAL					
2017	1,21%	0,71%	0,11%	2,24%	1,12%
2018	1,66%	1,05%	0,71%	3,50%	1,66%
Total	1,37%	0,88%	0,37%	2,74%	1,35%