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ADOPTING SUSTAINABLE BUSINESS PRACTICES IN THE GLOBAL SMARTPHONE INDUSTRY

INDFØRELSEN AF BÆREDYGTIG FORRETNINGSSKIK I DEN GLOBALE MOBILTELEFONINDUSTRI

MASTER'S THESIS OF
LAURA ANDREA MADSEN
SUPERVISOR: ANNE VESTERGAARD
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Resumé

Dette speciale har til formål, at undersøge hvilke faktorer der kan få den globale mobiltelefonindustri til at ændre forretningspraksis og indføre mere bæredygtige forretningsmodeller og skikke.

Analysen er opbygget af tre dele for at kunne give en samlet og fyldestgørende besvarelse af problemformuleringen; et forbruger perspektiv, et governance perspektiv samt et tredje analyseafsnit, som sammenholder resultaterne fremkommet fra de to perspektiver. Derudfra fremsætter analysen de mekanismer som er påkrævet for en bæredygtig udvikling og ændring i mobiltelefonindustriens forretningsmodel. Den metodiske tilgang til problemstillingen tager udgangspunkt i metodetriangulering som kombinerer et kvantitativt spørgeskema og et kvalitativt fokus gruppeinterview. Metodekombinationen kan give en grundigere analyse og mere kvalificeret afdækning af problemstillingen.

Afhandlingen undersøger antagelsen i samfundet om, at forbrugeren er en ansvarlig og bevist forbruger, som er interesseret i at ændre mobiltelefonindustriens forretningspraksisser. Dette gør de ved at lægge pres på virksomhederne og regeringer. Denne antagelse viser sig gennem opgaven ikke at være gældende. Faktorer som produktdesign, teknologi og funktionalitet er vigtigere for forbrugeren. I stedet påvises det gennem analysen, at forudsætningen for at ændre den globale mobiltelefonindustri primært er ved lovgivning og regler. Derudover skal der føres tilsyn med at virksomhederne opholder disse love og regler. Ud fra analysen kan det dermed konstateres, at interaktionen mellem internationale organisationer, regeringer og virksomheder tilsammen udgør de rette rammer for at få skabt de rette forhold til at ændre og skabe en mere bæredygtig mobiltelefonindustri.

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List of abbreviations

CASM	Communities and Small Mining initiative
CFSI	Conflict-Free Sourcing Initiative
CFTI	The Conflict Free Tin Initiative
CSP	Corporate Social Performance
CSR	Corporate Social Responsibility
DRC	The Democratic Republic of the Congo
EICC	Electronic Industry Citizenship Coalition
EU	The European Union
FLA	Fair Labor Association
GLR	The Great Lakes Region of Central Africa
ICGLR	International Conference on the Great Lakes Region
ICT	Information and Communications Technology
MNC	Multinational Corporation
MNE	Multinational Enterprises
MSI	Multi-Stakeholder Initiative
NGO	Non-Governmental Organization
NSMD	Non-State Market Driven
OECD	Organisation for Economic Co-operation and Development
PDA	Personal Digital Assistant
PPA	Public Private Alliance for Responsible Minerals Trade
SDG	Sustainable Development Goals
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
US	United States
TBL	The Triple Bottom Line
TEG	Transnational Environmental Governance

Contents

1.0 Introduction

"The number of smartphone users worldwide will surpass 2 billion in 2016 [...]" (Web 1), representing over a quarter of the global population. The growth in smartphone usage across today's globalized world has changed the way many of the world's most important industries work. Furthermore, the growth in smartphones has given impoverished people worldwide access to both the internet and banking. This makes smartphones an important part of the modern, global citizen's life. We rely on its usage and we demand and depend on the latest technology. However, the current development has created new global challenges and the production of smartphones carries a cost with regards to economic, social, and environmental aspects, which include the use of minerals mined from conflict-affected areas with untold environmental and social impacts. Furthermore, the recent trend, especially among the younger consumers, is to discard the old smartphone quickly and without hesitation and to invest in a new model with new features and technology (Web 2). This development contradicts the conception that consumers represent the new hope for an ethically improved capitalism (Jacobsen and Dulsrud 2007). The public discourse has shifted from consumer rights to consumer duties, and the notion in society is that the modern consumer is a morally responsible political actor, who has the ability to mobilize and put pressure on businesses and governments about sustainable development-related issues. However, the current behavior by the smartphone manufacturers proves that sustainable business practices are not predominant and instead several notable scandals have characterized the sector within the last few years (Web 3). This highlights the fact that sustainable and ethical conduct is not prevalent across the industry at this stage.

The unsustainable behavior by the consumers as well as the approach to business practices that are embedded in the smartphone industry opts for a governance perspective. This approach will be applied as it can help steer the industry and citizens towards addressing the global sustainability challenges they face and hold the smartphone manufacturers accountable for their conduct (Jacobsen and Dulsrud 2007). Public orchestration offers a strategy of transnational environmental governance, which is *"a process whereby states and inter-governmental organizations initiate, guide, broaden, and strengthen transnational governance by non-state and/or sub-state actors"* (Hale and Roger in Henriksen and Ponte 2015: 3). Hence, a governance perspective with transnational actors, who operate in a political sphere where public and private actors interact across borders and political jurisdiction, can help address the sustainable and environmental

challenges in the smartphone industry (Henriksen and Ponte 2015). This involves combining indirect instruments with more direct regulatory tools (Henriksen and Ponte 2015). Existing international regulations, such as the Dodd-Frank Act of 2010, which demands that American companies disclose the presence of conflict minerals in their supply chain will, among others, be investigated (Web 4). Furthermore, research points to the fact, that states capacity still has an essential role in the facilitating, implementing and enforcement of private regulation and that successful public support is more likely to happen when norms, objectives, and interests overlap between the public and private spheres (Henriksen and Ponte 2015: 2).

Besides the governance perspective, a consumer perspective on the preconditions for sustainable business practices in the smartphone industry will be applied in order to establish how the consumers can influence and pressure the smartphone sector towards a sustainable change. This includes investigating the consumer's values and norms as well as the motives behind their choice of smartphones and if sustainable factors are part of their decision-making process. Based on the governance and consumer perspectives the study will at last, examine and deduce the mechanisms needed for a sustainable change in the smartphone industry's business practices.

Consequently, as smartphones become ubiquitous and information communication technologies continue to pervade the farthest reaches of the world, the need to address accompanying environmental and social sustainability concerns associated with our devices is becoming increasingly evident.

It is in this perspective that this paper seeks to examine the following research question.

1.1 Research question

What can drive the global smartphone industry to adopt sustainable business practices?

The notion of a change towards a sustainable smartphone industry in the research question refers to the smartphone manufacturers adopting a more sustainable business approach at every level of the organization than previously pursued. A sustainable business is *"one that operates in the interest of all current and future stakeholders in a manner that ensures the long-term health and*

survival of the business and its associated economic, social, and environmental systems" (Landrum and Edwards 2009: 4). A sustainable business should focus on all three dimensions of sustainability, also referred to as the 'triple bottom line', which will be defined and used further on in the paper.

1.2 Sub-questions

The answer is ambiguous and leaves many unanswered questions. In order to answer the research question and to conduct a comprehensive and satisfactory analysis, the structure of the paper will progress through the following three questions:

- What are the preconditions for sustainable business practices in the smartphone industry from a governance perspective?
- What are the preconditions for sustainable business practices in the smartphone industry from a consumer perspective?
- In the context of these preconditions, what are the mechanisms needed for a sustainable change in the business practices?

1.3 Delimitation

To narrow the research and make it more relevant answering the research question, choice was made to focus on the Danish results of the conducted quantitative web survey. Through the review and analysis of the results, the findings will be regarded as representing an international consumer point of view regarding sustainable behavior related to smartphones.

Furthermore, the focus on sustainable production practices will primarily concern the mining industry and extraction of minerals used in smartphones originating from the Democratic Republic of Congo (hereafter referred to as the DRC), since the country possesses many of the important minerals used in smartphones and since it is the one of the most debated countries with regards to conflict minerals and violating human rights.

2.0 Literature framework

The globalized world of today opts for a transnational governance approach with regards to more sustainable practices in the smartphone industry, which is emphasized by the definition of globalization, that *"[...] refers to transnational connectedness and encompasses important economic, political, cultural, and environmental dimensions"* Hylland Eriksen 2014: 1).

The following literature will examine the challenges of governing sustainability in a complex constellation of actors and stakeholders in the smartphone industry, focusing especially on the transnational level. The literature will survey the various tools and initiatives available: issues of authority, legitimacy, and effectiveness. Furthermore, the literature will examine to what extent public orchestration can direct a variety of business, government and civil society actors engaged in different sustainability initiatives towards achieving the common goal of a more sustainable smartphone industry. Finally, literature on consumer behavior will be reviewed. The focus is especially on the active and politically aware consumers, who have been acclaimed to be the new hope for an ethically improved capitalism (Jacobsen and Dulsrud 2007: 469). This includes examining the dynamics and mechanisms of political consumption from different theoretical perspectives.

2.1 Transnational governance

Andonova, Betsill, and Bulkeley (2009) argue how, traditionally, multilateral agreements have been negotiated by national governments and regarded as the central mechanism for global environmental governance (Andonova, Betsil, and Bulkeley 2009: 52). However, *"The transnationalization of governance is not a phenomenon constrained to climate change"* (Andonova, Betsill and Bulkeley 2009: 57). Today, the governance of global environmental issues is manifold with governance mechanisms taking on a variety of different forms beyond multilateral agreements. The growing development of transnational cooperation between national governments, regions, NGOs, corporations, and government agencies on environmental matters, have resulted in networks, which the authors argue represent a form of transnational governance. Transnational governance involves *"[...] the authoritative steering of network constituents to achieve public goals, and which is of growing significance in world politics and in climate cooperation in particular"* (Andonova, Betsil, and Bulkeley 2009: 53).

The authors contend how transnational governance is not only characterized by the types of actors involved, but also by a particular set of relations and forms of purposive steering. The authors distinguish between three transnational networks: *public, private, and hybrid* based on the actors and authority involved. For *public transnational governance networks*, the governance mechanisms are established by and for public actors, such as sub-units of government, city or local governments, legislators, judges, or units of intergovernmental organizations (Andonova, Betsill, and Bulkeley 2009: 59). They define public transnational governance networks as typically being *"[…] established through soft forms of cooperation such as memoranda of understanding, rather than intergovernmental agreements formally sanctioned by the foreign policy apparatus of the state"* (Andonova, Betsill, and Bulkeley 2009: 59). This type of network can involve public authorities in network governance across scales from local to global. In the context of this paper, the European Union functions as a public transnational governance network, whose recommendations on conflict minerals legislation previously were non-binding recommendation and soft law on the subject. The commission stated that companies, including smartphone manufacturers, should ensure that minerals from conflict zones are sourced responsibly. Furthermore, The Conflict Free Tin Initiative (CFTI) is an NGO who aims to show that smartphone companies can source conflict-free minerals from the DRC in accordance with legislation, such as the US Dodd Frank Act of 2010, and international guidelines of OECD Due Diligence Guidance for Responsible Supply Chain of Minerals from Conflict-Affected and High-Risk Areas (hereafter called the Guidance) (OECD 2013).

On the opposite side are the *private transnational governance networks.* This category is established and managed only by non-state actors. The characteristic of private transnational governance networks is that they are brought together on a voluntary basis with actors from one or multiple sectors, who can create authority and recognition through the functioning of markets. The networks are able to institutionalize *"[…] a set of moral principles, norms and ideas; or by the combination of normative and market mechanisms"* (Andonova, Betsill, and Bulkeley 2009: 61). The Electronic Industry Citizenship Coalition (EICC) was created based on the need for an industry-wide standard on social, environmental, and ethical issues in the electronics industry supply chain including *"[…] an opportunity to drive positive change and increase efficiency across the industry by creating a unified approach and ensuring that suppliers were held to a common standard"* (Web 5). In the paper, the EICC, as a private transnational governance

network, will be included in the analysis and discussion part with regards to how and if they impact the smartphone industry towards changes in production and behavior.

Finally, a growing collaboration between public and private transnational actors has resulted in *hybrid transnational governance networks*. In this category, actors from the public and private sectors establish joint transnational networks with a set of governance objectives. The authors argue how this field has attracted the most academic attention to examine the emergence of new global public policy networks and public private partnerships (Andonova, Betsill, and Bulkeley 2009: 62*)*. As one of the world's leading smartphone manufacturers, Apple has over the past few years increasingly made engagements with the public authorities. This includes the recycled water project of late 2016 as part of a public-private partnership between California Water Service Company (Cal Water), the city of Sunnyvale, Santa Clara Valley Water District, and Apple. The recycled water produced in Sunnyvale will be diverted to neighboring Cupertino, home of Apple's newest campus (Web 6).

Table 1
Typology of Transnational Climate-Change Governance Networks

Type of Actors			
Function	*Public*	*Hybrid*	*Private*
Information sharing	UK-California initiative	The Climate Group (TCG)	Pew Business Environmental Leadership Council (BELC)
Capacity building and implementation	Cities for Climate Protection (CCP)	Renewable Energy and Energy Efficiency Partnership (REEEP)	World Business Council for Sustainable Development (WBCSD)
Rule setting	Regional Greenhouse Gas Initiative (RGGI)	Chicago Climate Exchange (CCX)	The Gold Standard

Table 3. Typology of Transnational Climate-Change Governance Networks (Andonova, Betsill and Bulkeley 2009: 60).

Furthermore, three governance functions are identified through which steering is accomplished: *information-sharing, capacity building and implementation, and rule-setting.*
Information is the main resource that is channeled to steer constituents towards network goals and which *"[…] takes on a governance function when it is recognized as authoritative and serves to direct constituents within the network*" (Andonova, Betsill, and Bulkeley 2009: 64). The examples

of how information sharing can steer the constituents in a different direction include changing norms, consensus building, and changing practices. The second category of capacity building and implementation refers to networks that provide resources, such as finance, expertise, labor, technology, or monitoring in order to enable action. Besides the policies and practices that come with the resources, the authors consider the capacity building and implementation to be *"[...] a process entangled with negotiation over rights and responsibilities and struggles over the nature of the problem and its appropriate solutions"* (Andonova, Betsill, and Bulkeley 2009: 64). Finally, the rule-setting transnational governance network contributes to validate a set of norms and to establish rules intended to guide and constrain constituents. The three identified governance functions will be applied in the paper to support the findings on how different strategies are used to change the smartphone industry's behavior toward more sustainable practices.

The authors' definition of transnational governance is that *"transnational governance occurs when networks operating in the transnational sphere authoritatively steer constituents towards public goals"* (Andonova, Betsill, and Bulkeley 2009: 56). Governance is organized through cross-border networks of different structures of actors, and the term *'constituents',* used in the definition above, has been chosen to describe the actors and organizations that are part of the network. In order to constitute the network, such actors and organizations must be recognized by network authorities as legitimate parts of the network. This results in a distinction between transnational networks that *influence* the creation and operation of governance institutions but who are not recognized as authoritative, which is the case of non-state actors involved in multilateral negotiations, and those that *govern*, which are those who have the power to establish, operationalize, apply, and enforce the network's behavior and agenda.

The approach concerning the function of constituents and networks will be used in the analysis to determine and examine how the different critical actors and NGOs identified in the smartphone industry are working towards more sustainable practices in the smartphone industry and if, in fact, they have the mandate and ability to influence the industry. Furthermore, the government and other actors within the regulative and legislative section will be included in the analysis to demonstrate networks that govern and can push for more sustainable change in the smartphone industry.

2.2 Public orchestration

Recent literature on transnational governance argues that governments and international organizations need to better orchestrate, i.e. engage and facilitate, a wider variety of actors, factors and mechanisms if they want to succeed in fulfilling their environmental objectives (Henriksen & Ponte 2015: 1). The concept of transnational environmental governance (TEG) will be applied as it consists of *"transnational actors operating in a political sphere in which public and private actors interact across borders and political jurisdictions to address environmental concerns"* (Henriksen & Ponte 2015: 2). Furthermore, the authors make use of the concept of *public orchestration*, which is becoming an important strategy of TEG. It involves national and international public organizations using indirect tools and soft power to steer industries and citizens towards addressing global environmental problems. It also involves combining indirect instruments with more direct regulatory tools, regulatory threats, and/or incentives. The concept of orchestration or steering provides an explicit analytical and normative tool in addressing the current challenges regarding the lack of sustainable business strategies and practices in the smartphone industry. Orchestration entails paying critical attention not only to who is involved in transnational governance, but also to the ways in which transnational networks deploy different sources of authority and mechanisms of steering in order to govern.

Abbott and Snidal in Henriksen and Ponte (2015) distinguish between two broad sets of mechanisms under the concept of orchestration. Some of which are defined *directive* and others *facilitative*. On the one hand, they see *directive orchestration* as relying on the authority of the state and seeking to incorporate private initiatives into its regulatory framework, through mandating principles, transparency, and codes of conduct. On the other hand, they conceive *facilitative orchestration* as relying on softer instruments, such as the provision of material and ideational support, for instance financial support, technical support, and endorsement, in order to kick-start new initiatives and or to further shape and support them.

More recently, Abbott et al. have taken a narrower view of orchestration, and their current definition is "*[...] a specific form of governance characterized by soft instruments and indirect influence on target actors, which distinguishes it from three other kinds of governance: hierarchy (hard, direct), collaboration (soft, direct), and delegation (hard instruments, indirect influence)"* (Abbott et al. in Henriksen & Ponte 2015: 3 and 4). The purpose of knowing more about how

governments and inter-governmental organizations shape themselves and are embedded in transnational environmental governance networks can be used in analyzing the tools needed by the smartphone industry for addressing global sustainability and environmental problems. Also, it can explain the orchestration dynamics and social formation in the governance of the environmental concerns deriving from the smartphone industry.

2.3 Legitimation politics

Voluntary attempts to address pressing social and environmental issues have resulted in a variety of institutional forms. Multi-stakeholder governance is generally seen as having greater legitimacy than others. The text by Fransen (2012) explores the relationship between multi-stakeholder initiatives (MSI) and business-driven programs, which is an increasing competitor to the multi-stakeholder-governed programs. The latter of the two describes a universe of initiatives in which the expertise, skills, and finance of non-profit and for-profit organizations are collected (Fransen 2012: 166). An MSI is defined as *"[...] programmes in which businesses voluntarily participate; agree on standards, implementation and enforcement procedures for improvement of social and/ or environmental conditions of production inside their organizations and their supply chain; and are subject to review on their efforts from outside parties"* (Fransen 2012: 166). Next to MSIs, are the programs developed by businesses without societal interest groups: the business-driven programs. They are defined as *"[...] programmes governing social and/ or environmental standards of production that are exclusively developed by for-profit organizations and governed mainly by such organizations"* (Fransen 2012: 166). Furthermore, Fransen understands the term governance in the multi-stakeholder and business-driven program as in the case of corporate governance, which is describing the organization of power and responsibility inside a program (Fransen 2012: 166).

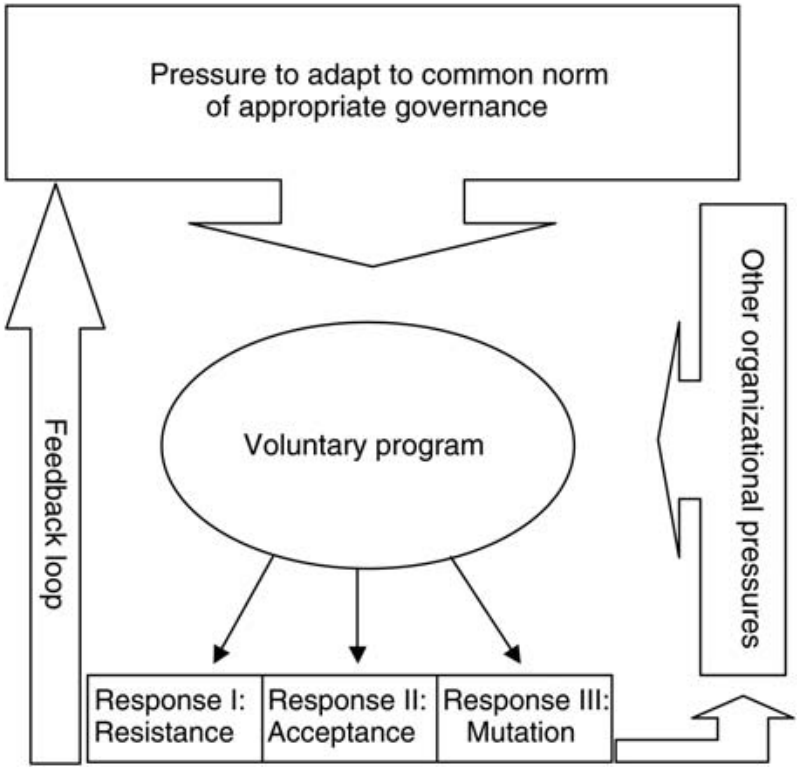

Figure 3. A model of legitimation politics for voluntary programs (Fransen 2012: 153).

2.4 Voluntary self-regulation

There has been a shift from voluntary-based CSR commitment to a more ambiguous line between voluntary and regulative actions (Buhmann 2012a: 88). Generally, businesses prefer the voluntary approach to CSR, because it gives them competitive advantages as they can exceed expectations if they use CSR strategically. Today, non-state actors have demonstrated that despite their lack of a formal role as participants in international law-making, NGOs and private non-state actors engage actively in international law-making processes and intergovernmental rule-making in several ways (Buhmann 2012a: 92). In relation to this, Bernstein and Cashore (2007) investigate how non-state actors through self-regulation, CSR, and public-private partnerships can conduct governance and legitimacy towards global environmental and social problems, where national and intergovernmental regulation is insufficient. The aim is to *"[…] establish political legitimacy whereby firms, social actors and stakeholders are united into a community that accepts "shared rule as appropriate and justified""* (Bernstein and Cashore 2007: 347). They use the term *'non-state market driven'* (NSMD) governance systems as an alternative in the absence of an effective national and intergovernmental regulation to improve global environmental and social problems

(Bernstein and Cashore 2007: 347). They provide a framework with three phases in order to achieve political legitimacy.

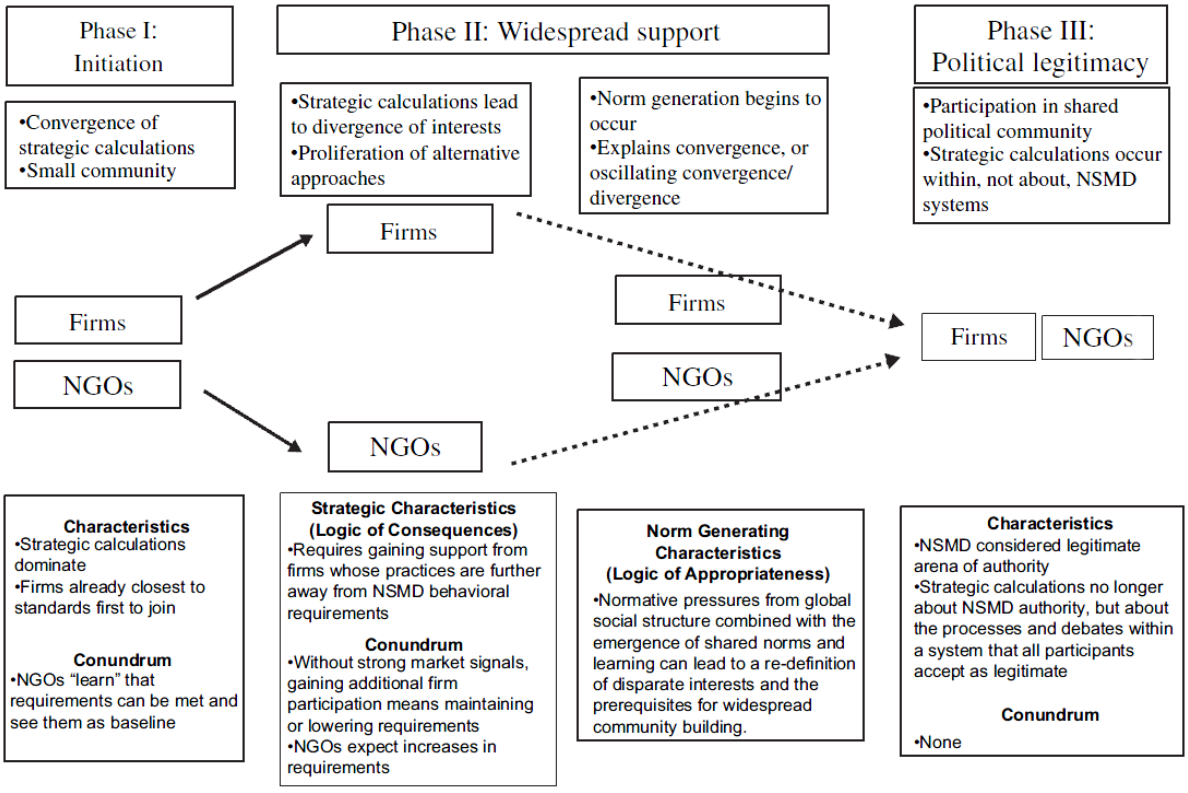

Figure 4. The three phases of non-state market driven (NSMD) governance (Bernstein and Cashore 2007: 356).

In the article, they argue that political legitimacy ultimately rests on community building and that achieving it will be much more challenging for NSMD systems than for other forms of private authority. The reason is that NSMD systems engage a wider array of stakeholders with multiple identities such as producers, consumers, and environmentalists, who are spread across geographic locations and interests. Thus, actors within an NSMD network are more likely to disagree on which performance criteria produce legitimacy and their relative importance in relation to procedural norms (Bernstein and Cashore 2007: 364). Globally institutionalized norms or social structure provide the constitutive and regulative basis for the legitimacy of the NSMD system.

2.5 The political business companies

Scherer and Palazzo (2007) aims to advance the current corporate responsibility discourse. Ultimately, they do so by proposing a new role for business firms: acting as political actors in a globalized society. Based on a thorough review of current schools of thought, they make a compelling argument for rethinking the relationship between business and society. Their argument is further based on the analysis of changes in the communicative and political environment of firms, for example, how globalization diminishes the ability of the nation-state to regulate business activities.

Furthermore, they define positivist CSR as a paradigm *"[...] that tries to uncover correlations and causal relationships in the social world by using the empirical methods of (natural) science"* (Scherer and Palazzo 2007: 1096). Consequently, the literature within this paradigm aims to explain observable phenomena through general or statistical laws and situational conditions (Scherer and Palazzo 2007: 1098). Included in this paradigm are the so-called Corporate Social Performance Models (CSP models) that are designed to explain the social efforts of companies. Positivist frameworks are adequate for providing information about the status quo of morals, the distribution of power, and the structures of influence within organizations. However, they fail to show how one can argue for the pros and cons of the ethical legitimacy of corporate activities.

O'Callaghan (2007) provides another approach within ethical considerations for corporations. In his article, he explores corporate reputation and the impact reputational risk has had on corporate behavior and performance. The article looks into the political and social implications of corporations, and how a new business paradigm of self-regulatory business behavior is emerging. A good corporate reputation has become an increasingly valuable commodity to large global corporations, or multinational enterprises (MNEs). The authors raise the question of whether this represents a genuine ideational change among the managerial class of MNE elites, or whether it is a cynical public relations ploy to please the public without affecting profits and MNE activities. The article argues that it represents both. On the one hand, it is an initiative forced upon MNEs by political and social activists demanding socially responsible conduct by MNEs, and on the other hand, it has increasingly come to frame and instantiate norms of corporate conduct. Consequently, the focus should not only be on traditional forms of state-regulatory capacity as the only medium able to discipline MNEs. Corporate reputation is beginning to function as a market mechanism

constraining MNE activities and producing socially desirable outcomes. In order to maintain a good reputation, it is highly important for a corporation to be aware of all stakeholders and act responsibly towards them: *"[...] the key values and principles that help to define a company's reputation are reliability, credibility, trustworthiness, and responsibility to stakeholders"* (O'Callaghan 2007:105).

If these aspects are considered, it leads the way towards a good corporate reputation. The author also states that reputation comes as a result of actions rather than words. Figure 2 describes the correlation between behavior, identity, and image, and how this shapes corporate reputation.

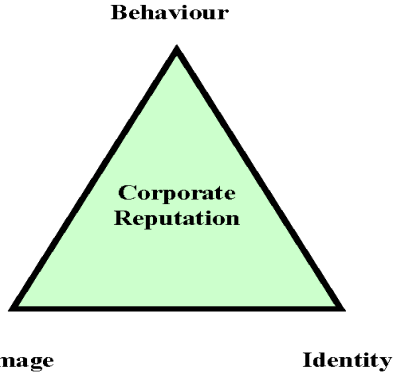

Figure 2. The Corporate Reputation Pyramid (O'Callaghan 2007: 106).

A good corporate reputation will not only prevent negative publicity, but also increase the value of the firm beyond its net worth. These intangible assets are referred to as goodwill and can strengthen the corporation's core business value as well as its shareholder value, as the stocks become more attractive and less exposed to risk. See table 1 below (O'Callaghan 2007: 107).

Table 1. Benefits of a Good Reputation.

- Adds psychological value to a product
- Helps reduce the risks customers perceive when buying a product
- Helps customers choose between products
- Increases employee job satisfaction
- Provides access to better quality employees
- Increases advertising and sales force effectiveness
- Acts as a performance bond in contractual relationships
- Supports new product introductions
- Acts as a powerful signal to competitors
- Provides access to the best professional service providers
- Provides a second chance after a crisis
- Helps raise capital in equity markets
- Enhances bargaining power in trade channels

Table 1. Benefits of a Good Reputation (O'Callaghan 2007: 107).

It is argued that risk assorted with reputation can potentially cause the most damage, as it poses a threat to the entire company across borders – both commercially and socially. See table 2 (O'Callaghan 2007: 109).

Table 2. Elements of Reputation Risk.

Social and political	Commercial
• The environment	• Product failure/recall
• Exploitation of labour	• Poor advice and service
• Indifference to the health and safety of workers	• Fraudulent activities
• Cultural and religious insensitivities	• Poor governance and decision making
• Race and gender	• Intervention by regulatory authorities
• Complicity in human rights abuses	• Litigation by stakeholders
• Lack of concern for local issues	• Unethical behaviour towards competitors
• Inappropriate or inadequate response during a crisis event	• Infighting/disarray of the Board of Directors
• Indifference to human suffering	• Security-related issues
• Corruption and bribery	• Poor policy or strategic decision making

Table 2. Elements of Reputation Risk (O'Callaghan 2007: 109).

2.6 Political consumerism

Jacobsen and Dulsrud apply Michele Micheletti's definition of political consumerism as *"actions by people who make choices among producers and products with the goal of changing objectionable institutional or market practices"* (Jacobsen and Dulsrud 2007: 470). Throughout their text, several terms refer to the subject of political consumerism, such as ethical shopping,

ethical purchase behaviour, ethical consumption, political consumption, political consumerism, and critical consumerism.

In the literature on political consumerism, the approach has mainly been a political participation and governance perspective according to Jacobsen and Dulsrud (2007). The notion of the consumer is taken for granted and the consumer is assumed to exist as a universal recognizable figure across cultural, historical, and institutional settings. Their article makes a critical review of this approach and instead they make the call for an approach that takes accord of the ways consumers and consumer roles are framed in interactive processes in markets, governance structures, and everyday life. They argue that consumers in different countries assess their responsibilities and their powers as consumers differently due to institutionalizations within distinctive contexts (Jacobsen and Dulsrud 2007: 469). Furthermore, they contend that we must take into account that consumers are often resisting to adapt to change and often make the easiest choice with the result that *"[...] moral complexities of everyday life restrict the adoption of an active consumerist role"* (Jacobsen and Dulsrud 2007: 469). There are everyday mechanisms serving to hamper the development of widespread political consumerism including conflicting moral and ethical considerations and aspects. In the smartphone sector, which contains a level of democratic process, it would be considered reasonable and effective for consumers to take on ethical responsibilities. The preconditions for ethically guided consumer choices to be made will be applied and discussed in the paper.

Within the category of political consumerism, Stolle et al. (2005) claims that it is primarily a tool of those who are distrustful of political institutions. Furthermore, they contend that acts of political consumerism should be included in future research on civic and political participation. The article explores three conditions, which should be taken into account in a meaningful analysis of political consumerism, 1) *behavior*: the political consumer buys or boycotts certain goods and services, 2) *motivation*: a reason for boycotting or buying a specific product or service. In the category of *motivation* is also included *awareness,* 3) *frequency:* the condition, which relates to how many times the action is repeated. This also includes the aspect of *habit*. The text also examines the questions: who are the political consumers and what are their characteristics? Stolle et al. (2005) look into their socio-demographic background and investigate if political consumers are frustrated citizens who are fed up with national institutions. Furthermore, they raise the question of how

political consumerism relates to some of the assumptions in the current debate about the decline or transformation of civic engagement (Stolle et al. 2005: 258).

The questions raised and the approach taken support the findings from the empirical data collected for this paper by both survey questions and the focus group interview. The core argument of the article is that political consumerism is an effective way of changing both corporate and governmental policy and behavior, which correlates with the paper's perspective on the political active consumers and their motivation and behaviors when it comes to smartphones.

2.7 Communicative approaches

As members of a democratic society, individuals face complex decisions about whether to support a decrease in climate change, vaccinations, genetically modified food, or a more sustainable and viable smartphone industry. Bruine de Bruin and Bostrom (2013) provide an introduction on how government agencies, NGOs, and other organizations can provide understandable and scientifically accurate communication materials, which aim to improve people's understanding of decision-relevant issues and potential behavior change (Bruine de Bruin and Bostrom 2013: 14062). In addition, research suggests "*that people interpret new information in light of their existing beliefs, also referred to as their mental models"* (Bruine de Bruin and Bostrom 2013: 14063). In order to develop effective communication materials for members of the general public, scientific experts need to understand what information people need to have and how to execute the communication strategies most effectively to the specific target groups. The authors present a mental models approach of four steps to developing communication materials. It involves both the relevant experts and the intended audience members. The four steps of the mental models approach are presented in figure 1. The approach begins by identifying what people should know to make informed decisions about the topic under consideration based on a scientific literature review and recommendations from an expert panels, also referred to as the *expert decision model*. The second step, *the lay decision model*, is to identify what people already know and how they make their decisions. This involves interviews and survey methods to elicit peoples' mental models. In the third step, a systematic comparison of the expert and lay decision models reveals differences in how experts and lay people think about the target risk decisions and reflects on the decision-relevant information that is missing from people's mental models (Bruine de Bruin and

Bostrom 2013: 14063). To design effective communications, scientific educators should address these differences in focus, including gaps and misconceptions, with involvement from experts to ensure accuracy and the intended audience members to improve ease of understanding. In the fourth step, evaluation studies test whether the resulting communication is effective in terms of facilitating recipients' understanding and informed decisions.

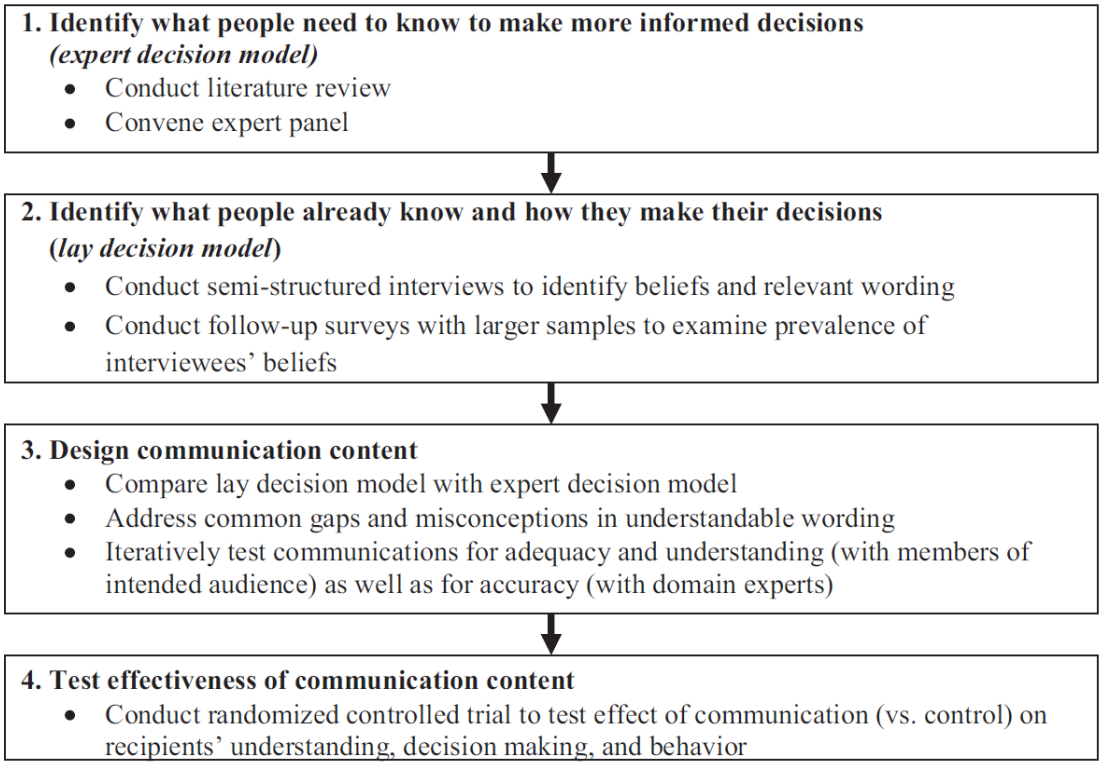

Figure 1. The four steps of the mental models approach to developing communications (Bruine de Bruin and Bostrom 2013: 14063).

This paper will focus on the first and second step of the mental models approach, where the first is to identify what the consumers need to know to make more informed decisions with regards to smartphones. The second step is to identify what the consumers already know about the smartphone industry, especially with regards to the production processes, and how they make their decisions in terms of purchasing, using, and discarding of their smartphones. Gaining insight into consumers' existing knowledge and information on the subject of smartphones as well as identifying gaps and misconceptions with the mental models approach provide some of the required communication tools for enabling consumer behavior change.

Another communicative approach is introduced by Bennett (2004), who explores the rise of what he calls *global citizenship* as characterized by *"[…] broad coalitions of groups using campaigns against corporations, along with other tactics, to press for greater public accountability in trade regimes, labor practices, human rights, environmental quality and other areas of corporate social responsibility"* (Bennett 2004: 2). He claims that a clear distinction between citizen and consumer roles in public life is increasingly hard to establish. Sustainable activist networks have developed successful political strategies based on targeting companies and their brands by using the internet to reach consumers globally. Four communications-related patterns can explain how activists have organized a sustainable politic that moves easily inside and outside of personal, national, and governmental contexts: 1) The Development of Permanent Campaigns, which includes the campaign as a permanent basis of political organization. Furthermore, the campaign becomes the mobilizing and organizing device in a context that lacks strong parties, formal interest groups, or ideologically defined social movements. 2) Global Consumer Activists are Networked, Not Centrally Organized, which means that the internet gives rise to fluid networks and makes it easy to join the campaign networks. In addition, networking makes it possible to organize diverse interests or common interests embedded in different communities or cultures. 3) The Internet Becomes an Organizational Structure, where the internet reduces costs of communication and surpasses geographical and temporal barriers. 4) New Media Influence the Mass Media: How Activist Messages Reach Broader Publics, which means that the internet is changing the way news is made, that activist information offers alternatives to mainstream news, and that journalists might find these in an information search, which is weakening the gate-keeping mechanism of traditional media. The approach of the media will be integrated in the discussion part of this paper to determine the media's role with regards to a sustainable development in the smartphone industry.

3.0 Methodology

This study is set out to investigate what can drive the global smartphone industry to adopt sustainable business practices. In order to do so, the paper will consist of three analyses; first a theoretically based analysis from a governance perspective, which will explore the preconditions for sustainable business practices in the smartphone industry. Secondly, an empirically data based analysis from a consumer perspective will explore the preconditions for sustainable business practices in the smartphone industry. At last, the third analysis will combine the two analyses and

deduce the mechanisms needed for a sustainable change in the smartphone industry's business practices.

In the following section, the methodology around the research design will be described, beginning with the paper's philosophy of science.

3.1 Philosophy of science

All of the objectives above require a focus on language and social relations, which is why social constructionism is considered appropriate and suitable as the overarching philosophy of science for the study. The underlying assumption for this paradigm is that there is no external reality that can be agreed upon. Instead, the way people talk and write about it constitutes the world (Potter 1996 in Bryman 2012: 34). The ontological position of constructionism differs from the objectivist position, which views social phenomena as external facts that are beyond our influence (Bryman 2012: 32). In contrast, the social constructionist paradigm contends that what we consider true about human nature is actually contingent, as human nature is socially constructed through institutions and cultures, and therefore subject to change. This means that social phenomena, such as sustainable development, are in a constant state of revision as they are ascribed different meanings by different actors (Bryman 2012: 33). Hence, the areas explored in this study are considered to be dependent on a socially constructed context. In the light of this social reality, the focus group method will be the primary empirical foundation of this study.

3.2 Research method

This section discusses the research method of this study and the detailed implementation of the research design. In order to answer the research question and sub-questions, a mixed method approach applying method triangulation of quantitative and qualitative methods was chosen (Bryman 2012: 37). When describing the chosen quantitative and qualitative methods, the survey design, sampling, analysis, and possible limitations will be included.

3.3 Mixed method approach

The interest in and practice of mixed methods research have only recently gained momentum (Bryman 2012: 699). Combining quantitative and qualitative types of research into an integrated framework has previously been criticized because the epistemological and ontological principles of these research approaches are said to be incompatible (Bryman 2012). However, from a more technical view, this connection is seen as not fixed and ineluctable, and thus, data collection and data analysis techniques are seen as capable of being fused (Bryman 2012: 631). In fact, using multiple methods can help facilitate a deeper understanding and bring together a more comprehensive research.

Adopting a mixed method approach helps understand complex data and gives a more complete and comprehensive account of the enquiry (Bryman 2012). The complexity in this particular research is the comprehension and comparison of attitudes and actions to assess the consumers' behavior and motivation with regards to driving a sustainable change in the smartphone industry. The quantitative research in form of a self-completion questionnaire will provide evidence and allow for a more thorough analysis. A semi-structured focus group interview will constitute the qualitative part of the research, giving a sense of process and enhancing the breadth and depth of the issue. Unexpected results from any of the methods might be explained through the findings generated by the others, thus offering a more complete understanding (Bryman 2012). As the sample size of this study was rather small, the mixed method approach provided opportunities to gather more detailed and in-depth data.

For choosing the appropriate mixed method strategy, Creswell (2003) defined the following four criteria: implementation sequence; priority; integration; and theoretical perspective. The research strategy employed for this master thesis is a 'concurrent triangulation strategy' where *"qualitative and quantitative methods are used in an attempt to confirm, cross-validate, or corroborate findings within a single study"* (Creswell 2003: 217). The quantitative and qualitative data will be collected concurrently, the priority between the two methods is equal, and the results of the two methods will be integrated during the interpretation phase (Creswell 2003).

3.4 Quantitative method

The research method of questionnaire-based surveys is the most commonly used technique to gain information about individuals' attitudes and views (Bryman 2012). The number of surveys being administered online has been growing and there is a distinction between surveys administered by email (email surveys) and surveys administered through the internet (web surveys). The tendency has been that email surveys were employed in relation to more narrow and homogeneous group of online users, while the web surveys have been used to study a larger group of online users. The latter of the two was chosen for this study where the respondent is directed to a website in order to answer the questionnaire.

3.4.1 Questionnaire design

The questionnaire was designed according to the rules for questionnaire construction, layout, and question content (Sarantakos 2005). A possible problem that could affect the validity of the questionnaire is the carelessness of respondents. The questionnaire contained seven sections as well as an introduction. Table 4 explains the questions, their rationale, and the measurement scale. The actual questionnaire can be found in appendix 1.

Section	Questions and Rationale	Measurement Scale
Introduction	Briefly explain the research topic and target group and ensure confidentiality and anonymity	
Section 1: Demographical information	To gather information on gender, age, country of residence	A combination of closed question with response options and open text box question
Section 2: Attitudes towards owning a smartphone	To gather information on whether the respondents own a smartphone and which brand and model they have to get insight into the distribution of smartphone manufacturers	A combination of closed question with response options Yes and No combined with an open text box question

Section 3: Attitudes towards consumer behavior when purchasing a smartphone	The respondents were asked to explain the reasoning for buying the smartphone they currently have in order to get a better understanding of the decision-making process	Open text box question
Section 4: Information on consumer experience with smartphones	To gather information on whether the respondents are new or experienced smartphone users	Closed question with options of Yes and No
Section 5: Attitudes towards consumer behavior when purchasing a smartphone	The respondents were asked how long they have had the current smartphone as well as the reasoning for choosing a smartphone to begin with	Closed question with various response options combined with an open text box question
Section 6: Attitudes towards consumer preferences including sustainable factors, when purchasing a smartphone	The respondents were asked to indicate the 3 most important factors when acquiring a smartphone, choosing from 8 categories: brand image, technology, product design, price, current trends in electronic use in society, level of information, convenience, and sustainability and environmental considerations	Closed question with various response options
Section 7: Attitudes towards responsibility and sustainable discarding methods	The respondents were asked to reflect and explain how they discarded the previous smartphone in order to determine if responsible and sustainable considerations where part of the decision-making and action	Closed question with various response options combined with a follow-up open text box question to elaborate further
End of questionnaire	Thank you for taking the time to complete the survey	

Table 4. Quantitative questionnaire design (source: author).

3.4.2 Data collection

Self-administered questionnaires require respondents to read and answer the questions themselves, which has the advantage of being quicker to administer, more convenient for the respondents, and without the risk of the interviewer affecting the process. However, there are possible disadvantages compared to interviewer-completion questionnaires, including the risk of incomplete responses, frivolous responses, and more care needed for design (Bryman 2012).

The survey was conducted from May 27th 2016 – June 24th 2016 by using SurveyXact, a professional tool for conducting surveys. The program helps collect, analyze, and present quantitative data retrieved from the program. The final questionnaire was generated through a link, which was distributed through different platforms, e.g. e-mails and networks on the social media platform Facebook. Of the 84 questionnaires distributed, 60 completed questionnaires were collected. This represents a response rate of 71% (Appendix 1).

3.5 Qualitative method

The focus group method includes several participants and the emphasis in the questioning is on a particular defined topic. The focus is on the interaction of the group and the joint construction of meaning. The focus group contains elements of two methods: the group interview, in which several people discuss a number of topics, and the focused interview, in which interviewees are selected because they are known to have been involved in a particular situation and are asked about that involvement (Merton et al. 1956 in Bryman 2012: 502).

3.5.1 Focus group interview

Most focus group researchers undertake their work within the traditions of qualitative research. This means that they are explicitly concerned to reveal how the group participants view the issues with which they are confronted (Bryman 2012). Therefore, the researcher will aim to provide a semi-structured setting for the extraction of their views and perspectives so that people can respond to each other's views and build up a view based upon the interaction that takes place within the group. Open questions in the focus group interview allow respondents to explain their point of view and understanding of sustainability and sustainable business practices, without being limited by preconceived categories provided. The semi-structured focus group interview was therefore the most appropriate approach to address these issues in the study.

The topics covered in the semi-structured focus group interview were based on the quantitative questionnaire in order to reinforce, contradict, or expand on the findings from the questionnaire. Table 5 shows the structure of the interview guide for the semi-structured focus group interview

and the link to the research objectives. The general interview schedule used as well as the transcription is depicted in appendix 2.

Section	**Questions**	**Rational/Objective**
Introduction	Consent to interview	Inform interviewees about the purpose of the focus group interview, the need to record, the interviewer's role, and the fact that the interview is not confidential
Section 1: Presentation by the respondents	Before initiating the interview, the respondents introduce themselves by name, age, education, and whether they have a smartphone – and if yes, which one they have	The respondents did not know each other prior to the focus group interview. Insight into personal information to initiate the conversation and provide background knowledge.
Section 2: Attitudes towards owning a smartphone	Discuss the reasons for having the particular smartphone right now	Insight into the individual reasons for why they each own a smartphone
Section 3: Attitudes towards sustainable factors in smartphone purchase decisions	Were sustainable factors part of the decision-making process when you bought your last smartphone?	To get more in-depth data and information about the attitudes towards and importance of sustainable factors and to what extent they were included in the decision-making process of buying a smartphone
Section 4: Attitudes towards sustainability with regards to smartphones	What is your opinion about sustainability in relation to smartphones?	To get information about opinions and insights into the importance of sustainability related to smartphones
Section 5: Knowledge about sustainability	What do you know about the topic and how do you relate to it?	To gather inside knowledge and information about opinions and experiences
Section 6: Attitudes towards sustainability in other aspects of the respondent's everyday life	Can you relate this to other aspects in your life where you have included sustainable factors in your decision-making process? (e.g. buying organic food or used clothes)	To gather inside knowledge and information about opinions, experiences and practices
Section 7: Perceived responsibility for sustainability	Should you take an interest in this? Do you feel it is your responsibility? If so, how and why? If not, whose responsibility is it?	Discussion about responsibility shows the tendencies towards self-regulation or government regulation and thus gives important insights for sub-research question 5
End of interview	Further comments on	Closing the interview

questions

Table 5. Qualitative interview schedule (source: author).

3.5.2 Interviewee selection

A large number of groups is preferred when performing a focus group interview, not only because of concerns about the representativeness of the views collected during the sessions, but also in order to capture as much diversity in perspectives as possible. However, it may be that high levels of diversity are not anticipated in connection with some topics, in which case a larger number of groups could represent an unnecessary expense (Bryman 2012). The focus group interview consisted of three women in the age group of 27-38 years old. They were carefully chosen because they represent a target group who wants to demonstrate a behavioral change towards more sustainable consumer habits with regards to smartphones. However, for several reasons revealed during the interview, none of them had yet made intentional sustainable decisions with smartphones. For this reason, the opinions and insights of the respondents are considered valid indicators with regards to sustainable and environmental aspects of purchasing, using, and discarding of smartphones. An overview of the respondents used in references is provided in table 6 below.

Respondent	Name	Age	Education	Smartphone brand
1	Isabella	38	Master's Degree in Sociology and French	iPhone 5
2	Stine	27	Master's Degree in International Studies	iPhone 5
3	Malene	28	Graduate student in political communication and management	iPhone 5

Table 6. Primary data (source: author).

3.5.3 Data collection

The focus group interview was conducted in a controlled environment. Prior to the interview, the respondents were informed about the purpose of the research, the need to tape-record the interview, and the confidentiality of the information given. Furthermore, the respondents consented to not being anonymous when recorded. The interview lasted 51 minutes and the

recordings were complemented with notes taken during the interview as well as impressions, ideas, and thoughts of the interviewer that arose from the interview.

3.5.4 Method of data analysis

The entire interview was transcribed and manually coded. At the beginning of any qualitative data analysis, the coding process is essential to structure the data and facilitate how knowledge from the data should be built up. Thereafter, the themes were identified and categorized. Interrelationships within and between the themes were analyzed and integrated into the analysis of the quantitative data.

3.6 Summary of research method and data collection

The chapter has illustrated the methods and procedures employed in order to obtain reliable and valid results and to answer the research question. The chosen mixed method approach combines in a method triangulation the quantitative data from a self-administered questionnaire and the qualitative data from the semi-structured focus group interview. The careful planning, design, and administration of the questionnaire and interview schedule has ensured that accurate information was collected. In the interpretation phase, the methods were integrated to gain a better insight into the data and a more complete understanding of the topic.

3.7 Secondary data

Throughout the writing process, supportive, secondary research was conducted to gain a better knowledge and different perspectives on specific problem areas discovered during the primary data collection and analysis phase.

4.0 Case description

The following section will introduce the international smartphone industry including the origin of the smartphone as well as the status of demand for smartphones. Subsequently, the different smartphone manufacturers on the market will be identified and discussed including the present business models and strategies that dominate the industry. Furthermore, the concept of sustainable development and sustainable business practices will be introduced. In particular, the predefined parameters, which the companies in the smartphone industry need to adopt and live up to in order to obtain a sustainable change in their business practices will be outlined. At last, the section will examine the new and innovative companies that are emerging on the smartphone market, who have created reusable smartphones that can be upgraded. Furthermore, it will be investigated how these companies increasingly pose as competition to the big smartphone manufacturers such as Apple and Samsung.

4.1 Definition of a smartphone

Within the mobile phone category, there is a sub-class of phones known as smartphones. A precise definition of the category of smartphones does not exist. However, throughout this paper the smartphone will be identified as a handheld device that performs many of the functions of a computer, typically having a touchscreen interface, internet access, and an operating system capable of running downloaded applications. The term smartphone is commonly used to distinguish devices with a more advanced computing capabilities and connectivity compared to non-smartphone. Smartphones are generally distinguished for their highly functional and customizable experiences, and their ability to deliver functions that come from the combination of a mobile phone and a personal digital assistant.

While, initially, mostly business users used smartphones, they have become a common choice for consumers as well. Due to the advancements in technology, modern smartphones are smaller and cheaper than earlier versions. Users also have a much wider range of smartphones to choose from than before. While the RIM Blackberry dominated the smartphone market for many years, other manufacturers like Apple, HTC, and Samsung now also offer a wide variety of smartphone options. This increase in smartphone availability has led to a corresponding decline in the usage of standard PDAs (Personal Digital Assistant), which do not offer phone capabilities (Web 7). Since

smartphones have a wide range of functionalities, they require advanced software, similar to a computer operating system. The smartphone software handles phone calls, runs applications, and provides configuration options for the user. Most smartphones include a USB connection, which allows users to sync data with their computers and update their smartphone's software (Web 7).

4.2 The history of the smartphone

The smartphone entered the consumer market in 1993. The difference between then and now is that the first smartphones were used primarily as enterprise devices and were too expensive for most consumers. However, the smartphone gained mainstream popularity with the introduction of Apple's iPhone on the mass consumer market in 2007. The iPhone revolutionized the industry by offering user-friendly features such as a touch screen interface and a virtual keyboard. The first smartphone running on Android was introduced to the consumer market in late 2008. The smartphone industry has been steadily developing and growing since then, both in market size, as well as in number of models and suppliers. By 2017, over a third of the world's population is projected to own a smartphone, an estimated total of almost 2.6 billion smartphone users in the world (Web 8). The invention of the smartphone is a turning point in history because it entails a huge amount of technology. Without smartphones, there would be no such thing as using the internet in different locations around the world. Overall, our lives would be very different without smartphones.

In the light of this paper's perspective and its research on environmental and sustainable smartphone production practices, it is relevant to mention that every smartphone contains about 40 different minerals including tantalum, tungsten, copper, iron, nickel, aluminum, tin, silver, chromium, gold, and palladium (Web 9). Among these, tantalum, tin, tungsten, and gold are often sourced from conflict-affected areas in the DRC.

4.3 High-technology markets

The high-technology market is a particular kind of market that follows different rules compared to traditional markets. In high-tech markets, the difficulties encountered by firms in commercializing technological innovation are intensified by volatility, interconnectedness, and the proliferation of new technologies that characterize such markets (Chiesa and Frattini 2011).

High-tech markets exhibit significant volatility, which is due to the high turnover of industry players and the level of competition (Mohr 2001). In addition, sales can quickly rise or drop on the market, leaving the companies in a volatile position with regards to their whole existence. The interconnectedness of high-technology markets concerns both the industry and the consumer. It affects the industry because decisions about development, market introduction, and adoption are distributed among many interrelated organizations (Chiesa and Frattini 2011). However, the consumer is influenced by the behavior of the adoption network, which means that the user is more likely to switch to a new technological platform if the user is convinced that the majority of other users will switch over (Chakravorti 2004). Furthermore, the product proliferation has two side effects, which need to be taken into consideration. First, it increases competition inside the market, and, secondly, it reduces the length of the product lifecycle. However, the link between product proliferation and the reduction of the product lifecycle is not obvious and requires further explanation. It refers to the situation when the constant introduction of new versions of the product into the market rapidly makes some of the incumbent products outdated.

Last, but not least, there is another important element that distinguishes high-tech and not high-tech markets: the matter of uncertainty. Winer (2000) identifies two kinds of uncertainty: market uncertainty and technology uncertainty. Market uncertainty is essentially due to the question about market needs. When a company launches an innovative high-tech product, it is difficult for the company to forecast the market size and the speed of innovation diffusion. The reason behind this is the consumers' lack of knowledge of the benefits and the different functionalities of the product. Technology uncertainty refers to uncertainty regarding: 1) the performance of the product, 2) the reliability of the new technology, and 3) the obsolescence rapidity.

4.4 Smartphone market demand

Based on the global sales of smartphones in the first quarter of 2016, the five biggest smartphone manufacturers on the market are Apple, Samsung, Huawei, Oppo, and Xiaomi (Web 10).
About a quarter of all smartphone users in the world will be located in China by 2018, with more than half of the population in China projected to be using a smartphone by then. Smartphone shipments worldwide are projected to add up to 1.8 billion in 2019. China is also the world's largest global smartphone market in terms of shipments, accounting for 30 percent of all smartphone shipments in 2015. China alone generated around a hundred billion U.S. dollars from the sale of smartphones in 2014. In 2015, the United States held about 12 percent of the market share, while India accounted for 7.6 percent of all shipments. By 2019, India is expected to surpass United States when it comes to shipments (Web 8).

Until the first quarter of 2011, Nokia was the leading smartphone vendor worldwide, with 24 percent global market share. Today, however, Samsung is clearly leading the pack with about a quarter of all shipments. Apple is the second largest vendor of smartphones worldwide. In 2015, Apple sold more than 230 million iPhones worldwide, the highest figure to date. Other prominent smartphone vendors include Huawei, Lenovo, Xiaomi, and Oppo. When it comes to smartphone operating systems, Android took over as a clear market leader as of the fourth quarter of 2010, and has only further increased its lead since. As of the third quarter of 2015, Android has 85 percent of the market share. Apple's operating system IOS is its main competitor, accounting for about 15 percent of the share (Web 8).

Currently, the average upgrade cycle for a smartphone is less than two years (Web 11). This aggressive cycle helps the smartphone industry grow and generate impressive profits. At the same time, this trend is neither sustainable nor good for the consumers' wallets. In addition, the New York Times writes: *"Smartphones have crossed the threshold from amazing to boring. High-end phones seem to have hit an innovative plateau, with each new iPhone or Samsung Galaxy just incrementally better than the last"* (Web 12).

4.5 Sustainable business practices in the smartphone industry

Generally, the established smartphone industry is characterized by a focus on prosperity and profit. The business model is based on inventing new electronic devices with a limited lifespan for consumers to buy. Lately, competition from Chinese manufacturers Xiaomi and Oppo is challenging the market and the leading manufacturers of Apple and Samsung. As the smartphone market matures, companies will have to change their business model to achieve sustainability and keep ahead of competitors in an increasingly competitive market.

The concept of sustainable development has emerged as a potential pathway towards the definition of sustainability as used in society today. In 1987, the United Nations' World Commission on Environment and Development, often referred to as the Brundtland Commission, published the influential report, 'Our Common Future', in which the definition of sustainability is expressed as *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs […]"* (Web 13). The report recognizes the interdependencies between the natural environment, human social welfare, and economic activity, and the need to establish and maintain a dynamic balance between these three elements. Landrum and Edwards define a sustainable business as *"one that operates in the interest of all current and future stakeholders in a manner that ensures the long-term health and survival of the business and its associated economic, social, and environmental systems"* (Landrum and Edwards 2009: 4). Businesses solely focusing on reducing their environmental impact are referred to as 'green businesses' whereas a sustainable business would focus on all three dimensions of sustainability, which have often been referred to as the 'triple bottom line' (Elkington 2001). In that connection, the Electronic Industry Citizenship Coalition (EICC) dedicated to electronics supply chain responsibility has provided a Code of Conduct, which is a set of standards on social, environmental, and ethical issues related to the electronics industry supply chain (Web 15). The standards set out in the Code of Conduct refer to international norms and standards and they include ensuring *"[…] that working conditions in the electronics industry supply chain are safe […] and that business operations are environmentally responsible and conducted ethically"* (Web 14). Inspired by the standards provided by the EICC above, the following parameters will constitute the frame of reference throughout the paper concerning which parameters the companies in the smartphone industry need to adopt and live up to in order to obtain a sustainable change: 1) ensure safe labor conditions, 2) change production practices to achieve more transparency in the

manufacturing process and supply chains, including sustainable extraction of minerals. 3) focus on the longevity and repairability of the smartphones, which will extend the smartphone's usable life and 4) use more sustainable materials in the products and packaging.

4.6 The manufacturers in the smartphone industry

The key stakeholders in the smartphone industry are the multinational companies Apple and Samsung, who represent the biggest and industry-leading companies in the global market (Web 15). Smartphone manufacturers such as Apple and Samsung have made their billions promoting and taking advantage of the consumers' collective need for technology. Furthermore, the subject of planned obsolescence plays a big part in the manufacturers' current business models. Smartphones are designed as a one-off capture of the latest technology available at the time of manufacture, which means that the only way for the consumer to upgrade a phone is to replace it. This illustrates and characterizes a smartphone industry, which mainly focuses on profit and revenues, and little on sustainable factors. Recently, the market has become more competitive, particularly among smartphone brands. The two leaders, Apple and Samsung, are losing share to manufacturers, especially to Xiaomi and Oppo from China (Web 16).

Apple has previously received a bad rating on the environmental organization Greenpeace's guide to greener electronics because of lack of transparency in their manufacturing process (Web 17). However, sustainable improvements are initiated with solar farms and by deriving the product's packaging from sustainably managed forests (Web 18). The fact that the cardboard from Apple's iPhone cases are sourced from sustainable forest is becoming increasingly vital to the growing number of political consumers. As a result, in 2015, Apple tops the Greenpeace clean energy report (Web 19). Apple's new sustainable initiatives are an expression of an improved external engagement strategy, where Apple has defined how they can contribute to society by knowing their stakeholders and engaging radically with them. Organizations should recognize that they generate long-term value for shareholders only by delivering value to society as well (Browne and Nuttall 2013). Samsung is the first company to achieve recognition for the Galaxy S4 model as the first smartphone to meet internationally recognized requirements for environmental design and socially responsible manufacturing (Web 20). This development of the two leading companies in the electronic industry proves that the sustainable mindset is growing in the global smartphone

industry. When firms engage with the community strategically, they can gain *"[...] legitimacy, manage social risk and even co-develop innovative solutions to social problems with community members through a well-designed community engagement strategy"* (Bowen et al. 2010: 297). Apple is a leading example with the protection and preserving of forests and thereby ensuring sustainable harvesting in the community. Moreover, it is argued that companies should integrate external engagement deeply into every part of the business by defining what they contribute to society (Browne and Nuttall 2013). For communities, the benefits are *"[...] access to charitable dollars, employee volunteers, training, capacity building, influencing projects and substantive improvement to social problems"* (Bowen et al. 2010: 297).

4.7 Modular phones

Besides the established and leading companies on the smartphone market, new and innovative companies are emerging and increasingly pose competition to the big smartphone manufacturers such as Apple and Samsung. However, one of the competitors is already a leading and well-established company in the technology industry; Google. The multinational company is specializing in internet-related services and products. Its mission is to organize the world's information and make it universally accessible and useful (Web 21). Now, the company is expanding its business model by introducing an upcoming modular smartphone, which is made of a central module board with individual modules that can be connected and replaced (Web 22). The key objective is to democratize the mobile hardware ecosystem. This means that users may decide for themselves what their phone should do and what it should look like. This concept should enable developers to reach many people globally. The project is called Ara and it is scheduled to be launched in the end of 2016. The mission is to build a smartphone out of interchangeable parts, which you can easily swap to make your phone exactly what you want right now. The idea is that the ability to swap modules will lengthen the life of a smartphone and make the device last five years instead of the current average of 2 years (Web 2). Consequently, this will also lessen the waste accrued in the rush to upgrade.

In addition to Google's modular smartphone, the European company PuzzlePhone based in Finland is another innovative smartphone manufacturer on the market, who has developed a sustainable and upgradeable smartphone. The company openly comments on the current status in

the industry, which is "*[...] guilty of adding to the great pile of crap in our disposable culture [...]"* (Web 23). PuzzlePhone wants to give the consumers a sustainable option instead of participating in the traditional culture. Furthermore, the company wants to *"optimize logistics chains, return manufacturing to local markets, and ensure production includes nature-friendly practices and responsible business ethics"* (Web 23).

The smartphone market is experiencing a development with emerging companies who want to challenge the existing market with sustainable business models and long-lasting smartphones. Fairphone is another company, which, similar to PuzzlePhone, is producing a more sustainable smartphone with responsible business ethics. However, Fairphone is a social enterprise and the philosophy behind the company started as a project to raise awareness about conflict minerals in consumer electronics (Web 24). As a result, Fairphone developed the sustainable smartphone in order to support their goal by using *"commercial strategies to maximize our social impact at every stage of the value chain, from sourcing and production to distribution and recycling"* (Web 24). Therefore, it can be argued that Fairphone as a stakeholder is in the category of a critical actor towards the established smartphone industry besides being an emerging competitor on the smartphone market.

At the moment, modular phones are a small niche, but they are gaining interest. Aside from Google's Ara Project, the PuzzlePhone and the Fairphone 2 are also getting their fair share of public attention. The whole idea of a modular phone is akin to that of a desktop and its replaceable and upgradable parts. When components in the smartphone gets obsolete and does not work anymore, it is possible to take the component out and replace it with a new and functional one, while keeping the rest of the components. Modular phones are trying to port this desktop feature into handhelds, which, just like the desktop, is supposed to make them easily upgradeable and serviceable. This presents the promise of a reusable device that is more serviceable and which can be upgraded for years to come to meet requirements and thereby lessens consumer spending on newer gadgets. These companies are putting pressure on the established companies, whose business model is concerned with new products as the old ones expire. The idea behind the modular smartphone, as represented by Google, PuzzlePhone, and Fairphone, is a protest against the current age of flagships that will not let users replace the battery for instance (Web 25).

5.0 Analysis

The analysis is divided into three individual sections in order to answer the research question comprehensively. Hence, the structure is based upon three sub-questions, respectively. First, a theoretically based analysis from a governance perspective will explore the preconditions for sustainable business practices in the smartphone industry. Secondly, an empirically data based analysis from a consumer perspective will explore the preconditions for sustainable business practices in the smartphone industry. At last, the third analysis will combine the two analyses and deduce the mechanisms needed for a sustainable change in the smartphone industry's business practices.

5.1 Governance perspective

This analysis section will explore the preconditions for sustainable business practices in the smartphone industry from a theoretically based governance perspective. This includes theories of transnational governance, corporate reputation and businesses acting as political actors by self-imposed regulation. Hence, the section will examine how non-state actors can contribute to legislative processes (Scherer and Palazzo 2007). Furthermore, the governance perspective on the environmental field will investigate how governments and international organizations need to orchestrate a wide variety of actors and mechanisms if they want to succeed in fulfilling their environmental objectives (Henriksen & Ponte 2015).
However, prior to the governance perspective a stakeholder analysis will serve as the foundation for the analysis.

5.1.1 Stakeholder analysis

An analysis from a governance perspective requires insights into the interactions between businesses, governments, and civil society. Therefore, the actors who constitutes the smartphone industry's environment is important to identify and examine in a stakeholder analysis. This section will define who the relevant stakeholders are in the change process the smartphone industry is facing towards sustainable business practices. At first, the innovative smartphone enterprise of Fairphone will be presented as a critical actor who is challenging the established industry with a sustainable smartphone, which is reusable and repairable. Fairphone is the proof that it is possible

to produce smartphones in a more sustainable and ethically responsible way as opposed to the current business practices in the industry. Secondly, relevant international organizations, NGOs and multi-stakeholder initiatives will be reviewed. At last, the analysis will examine the production issues associated with the extraction of the minerals in the DRC and how it impacts the local community. In this connection, the role and responsibility of the government of the DRC as well as the mining companies will be examined.

5.1.1.1 Fairphone

Fairphone started as a project in 2010 in Amsterdam supported by different European organizations. The objective was to create awareness about conflict minerals in consumer electronics and the appertaining wars in the DRC (Web 24). Fairphone describes themselves as *"[…] a social enterprise working to create a fairer economy and change how things are made. We open up supply chains, solve problems and use transparency to start debate about what's truly fair"* (Web 26). The company's overall purpose was to create awareness of more ethical products and the development of a more sustainable smartphone was chosen as a *"[…] device to reconnect consumers to their products and uncover how things are made"* (Web 24). In 2013, Fairphone was officially established as a social enterprise and released the first Fairphone. The Fairphone 2 was released in autumn 2015. From scratch, the Fairphone is designed to put social and environmental values first. They use as many responsible mined minerals and metals as possible and its high-quality components are built to last. So far, only two of the minerals in the Fairphone come from conflict-free mines in the DRC: tin and tantalum. In collaboration with different organizations and initiatives, Fairphone is continuously working to expand the use of responsible mined minerals in its smartphone.

Their smartphone is designed to be easily repairable and comes with its own do-it-yourself repair manual (Web 27). It will be manufactured according to ethical standards that consider the well-being of factory workers. The company has set up a recycling program for used phones and is encouraging suppliers to buy recycled materials. Fairphone focuses on five core action areas: mining, design, manufacturing, the life cycle of a smartphone, and social entrepreneurship - all of which are included in the making of the Fairphone. The enterprise has a deliberate strategy of opening up the processes behind the production and demonstrating the complex and

interconnected supply chains in the industry. The different partnerships with suppliers related to creating the Fairphone is available on Fairphone's website to demonstrate the company's vision as well as the importance of transparency. Manufacturing and consumption are other aspects that Fairphone have included into their business strategy. As part of Fairphone's strategy of limiting resource extraction and encouraging consumers to contemplate their electronic purchases, Fairphone only produces the amount of Fairphones, which has been pre-ordered and paid for by the customers. Currently, the company has launched their second smartphone, the Fairphone 2, which is the first modular phone on the market. The smartphone is designed to be long lasting, which includes repairability with spare parts being available on Fairphone's webshop.
The political conscious consumer is one of the recipients, who deliberately choose their products based on ethical beliefs. Besides creating awareness around the production process in the smartphone industry, the aim for Fairphone is to *"[...] build stronger connections between people and their products"* (Web 24).

In 2015, Fairphone received the United Nations' Momentum for Change Award. The award is given to organizations addressing economic, social, and environmental challenges (Web 28). Fairphone is an example of a non-state actor, who wants to improve global environmental and social problems by self-regulation, corporate social responsibility, and public-private partnerships (Bernstein and Cashore 2007).

5.1.1.2 The role of international organizations in society

The number of international organizations has grown and so has their importance in organizing the global economy (O'Brien and Williams 2010: 135). Both the for-profit and not-for-profit sectors have been busy expanding their international contacts, and forming and governing international or transnational organizations. By increasing their international presence, the not-for-profit citizens' organizations have created transnational advocacy networks to lobby transnational corporations. NGOs have been particularly active in lobbying governments and international organizations as well as implementing international development projects, especially when it comes to sustainable development related issues.

NGOs are non-profit organizations driven by societal visions and beliefs and place emphasis on common action and collective goals. NGOs are neither apolitical nor governmental. They are involved in politics without aspiring to govern or to put an end to government institutions. The objective of NGOs is to influence and alter regulations and laws; their starting point is an intolerance of particular existing practices or discontent from either governments or corporations. Thus, NGOs focus on actions and procedures rather than actions: what concerns them is not who governs, but how government is exercised. Thus, NGOs and citizen groups have become important as actors in the normative and material structures of the global political economy (O'Brien and Williams 2010: 138).

5.1.1.3 International organizations and multi-stakeholder initiatives

International organizations and NGOs have played a pivotal role in creating momentum for sustainable development at the international level by participating in and initiating conversations on critical issues related to sustainable development. As UN member states have adopted the Sustainable Development Goals (SDGs), NGOs are urged by the UN to continue to play a role in driving sustainable development by putting pressure on their national governments to take action to the commitments made and by acting as 'partners for sustainable development' (Web 29).

The increased influence and impact is documented by the report developed by the Organization for Economic Co-operation and Development (OECD), the Guidance (OECD 2013). It was created in cooperation with the International Conference on the Great Lakes Region (ICGLR) with the objective to help companies respect human rights and avoid contributing to conflict through their mineral sourcing practices (OECD 2013). The report is the first example of a government-backed multi-stakeholder initiative on responsible supply chain management of minerals from conflict-affected areas (OECD 2013). Resolve is one of the specialist NGOs who are helping electronic companies, including smartphone manufacturers, and stakeholders understand the complexities related to conflicts over minerals originating from the DRC and the surrounding region. Furthermore, Resolve has provided insight into how these minerals flow through the economy, which has allowed stakeholders such as Fairphone to develop and test potential solutions to change their extraction practices.

Furthermore, the two multi-stakeholder organizations, the Electronics Industry Citizenship Coalition (EICC) and the US Public Private Alliance for Responsible Minerals Trade (PPA) are trying to persuade the smartphone industry of the need to support responsible and sustainable trade in the DRC. The EICC members have produced a paper on the lifecycle environment impacts of electronic products and the organization is continuously working to identify product-related supply chain sustainability projects to address, either as a coalition, in partnerships or with other organizations (Web 30). The PPA is a multi-stakeholder initiative to support supply chain solutions to conflict minerals challenges in the DRC and in the Great Lakes Region of Central Africa (GLR). The PPA provides funding and coordination support to organizations working within the region to develop and demonstrate the feasibility of sourcing verified conflict-free minerals (Web 31). They collaborate with Resolve as well as Enough, who develops practical policies to address crimes against humanity in connection with conflicts (Web 32). In addition, the multi-stakeholder organizations are working with two projects in the DRC; Solution for Hope, which focuses on tantalum (Web 33), and the Conflict Free Tin Initiative (CFTI), who aims to show that smartphone companies can source conflict-free minerals from the DRC in accordance with legislation, such as the US Dodd Frank Act of 2010, and international guidelines of OECD's the Guidance, which *"[...] is intended to cultivate transparent mineral supply chains and sustainable corporate engagement in the mineral sector with a view to enabling countries to benefit from their mineral resources and preventing the extraction and trade of minerals from becoming a source of conflict, human rights abuses, and insecurity"* (OECD 2013).

5.1.1.4 Greenpeace

As an international environmental organization, Greenpeace has created a guide to greener electronics. The guide evaluates leading consumer electronics companies based on their commitment and progress in three environmental criteria: energy and climate, greener products, and sustainable operations (Web 17). Greenpeace's specific demands for smartphone companies are to take back and recycle their products responsibly once they become obsolete. Secondly, the companies should stop the use of unsustainable materials in their products and packaging. Principles that are identical to the principles of Fairphone (Web 24). However, Greenpeace holds two functions as a stakeholder. The primary function is as a partner, who shares the same values and principles as Fairphone and supports the sustainable development. Greenpeace's secondary

function is to monitor if the Fairphone is meeting the requirements of the ranking criteria compared to the other smartphones. When Greenpeace creates rankings and guidelines in order to frame environmental performance of smartphone companies, it also affects the consumer, who may take these rankings into consideration when buying a new phone.

5.1.1.5 The mining companies

The multinational corporations in the smartphone industry buy the minerals required for producing smartphones from the mining companies, who operate in the GLR, which includes the DRC. Most of the required minerals derive from the DRC, which holds some of the world's most precious minerals in the world, including tin, tantalum, and gold.

Both the smartphone manufactures and the mining companies need to recognize the severe impacts, which may be associated with the extraction, trading, handling, and export of minerals from conflict-affected and high-risk areas. Furthermore, the mining companies should recognize their responsibility for the local communities, respect human rights, and not contribute to conflict. The report provided by OECD about responsible supply chains of minerals from conflict-affected and high-risk areas result from an ongoing, proactive, and reactive process through which companies can ensure they are respecting human rights and do not contribute to conflict (OECD 2013).

5.1.1.6 The local communities

The presence of the mining companies in the DRC is one of the implications for the local communities. The country is experiencing recurring cycles of conflict and violence, which is due to the lack of enforcement and regulation of mineral resources by the local governments. The local communities who work in the mining companies are typically from rural areas and low-income groups. Unfortunately, it is not uncommon that the mining companies use child and women labor, violate human rights, and make use of abuses such as widespread sexual violence, forced labor, torture, and degrading treatment (OECD 2013). As a result, many people from the DRC flee to the neighboring countries. The UN Security Council has endorsed a coordinated cross-border development plan for Africa's GLR, including the DRC, focused on addressing the root causes of conflict and the unregulated flows of natural resources, while also working on economic

integration and long-term solutions for displaced persons and refugees (Web 34). The result is the *´Framework of Hope´*, which outlines national, regional, and international actions that aim to end violence and create stability (Web 35).

In addition, the NGO, Resolve provides assessment, facilitation, and strategic and business planning support to the Communities and Small Mining initiative (CASM), a program managed by the World Bank in collaboration with other stakeholders. CASM seeks to promote sustainable development in communities with artisanal and small-scale mining and develop programs to address environmental and social impacts. The work of the CASM program will help solve the complex social, environmental, and economic issues surrounding small-scale mining, which has the potential to alleviate poverty in rural areas (Web 36).

5.1.1.7 The government of the DRC

It is important to strengthen the governance of the public sector institutions in the DRC. Currently, the government is permeated with corruption and instability, which is primarily due to the mining activities in the country and the rebel groups controlling the mines. The interaction between the mining activities and the overall institutional framework is a critical determinant of overall benefits from mining. The potential for mining to catalyze development thus depends on the ability of the DRC government to effectively manage the sector. This requires capacity to manage the entire value chain and ensure a responsible resource extraction.

5.1.2 Transnational governance

The stakeholder analysis provided insights into the relevant stakeholders and their role in the smartphone industry's environment. Furthermore, it provided insight into how they influence the change process the smartphone industry is facing towards sustainable business practices. Perspectives of international organizations and government were also examined, which makes the transition to a transnational governance perspective for this study. Traditionally, developed societies have been made up of three overlapping segments: the government, the private sector, and civil society, with the government controlling the development path of society. However, with the globalization of markets and societies, the nation state's role in driving development has been reduced, and non-state actors such as multinational corporations have gained more influence. The

following section will cover different perspectives associated with transnational governance, starting with the multinational corporations (MNC) change towards a political actor in society.

5.1.3 Corporations as political actors in society

Due to globalization, the international smartphone corporations are starting to realize the role they can play in global governance and how they can influence the political arena in society. This is a new approach and way of thinking for the smartphone corporations and it can be regarded as the driving forces of political CSR (Scherer and Palazzo 2007). There are different conceptualizations available on the definition of corporate social responsibility (CSR). Throughout this paper, the definition offered by Aguinis will be used: *"Context-specific organizational actions and policies that take into account stakeholders' expectations and the triple bottom line of economic, social, and environmental performance"* (Aguinis and Glavas 2012: 933). Hence, the understanding of CSR refers to policies of and actions by organizations, which are influenced and implemented by actors at institutional, organizational, and individual levels. CSR activities are the most common techniques to respond to the growing importance of sustainability, hereunder environmental auditing, eco-labelling and -certifications, and codes of conduct. Apple voluntarily disclosed an almost complete list of its direct suppliers for the first time in 2012. Furthermore, the corporation announced their new NGO membership in the Fair Labor Association (FLA). The two actions taken by Apple can be deemed as an effective strategy to provide information satisfactory to markets and consumers (Bianchi 2013: 497). Observable CSR activities such as Apple developing corporate codes of behavior in collaboration with NGOs and shifting corporate attention to societal challenges beyond immediate stakeholder pressure are indications that the traditional concept of CSR is changing and instead a new link between civil society and the state is emerging *"in the overarching processes of (national and transnational) public will formation and these processes' contributions to solving global environmental and societal changes"* (Scherer and Palazzo 2007: 1108). However, a comprehensive approach that involves a wide range of stakeholders and coordinates across many areas of government policy will be needed. Developing this comprehensive approach to sustainable development and environmental protection will be a central governance challenge including a market challenge in the coming decades (Elkington 2001: 16). This indicates that the interactions between political institutions and businesses on

specific sustainability challenges can result in possible development solutions towards sustainable business practices in the smartphone industry.

5.1.4 Industry self-regulation

In addition to the politicization of global corporations and the increasing interaction with non-state actors to comply with sustainable challenges, the smartphone corporations are concerned about their corporate reputation. In order to maintain a healthy reputation, it is evident that the corporations develop good reputation risk management procedures (O'Callaghan 2007: 110). Managing corporate reputation is a highly complex matter and requires knowledge on internal relations, communication, and politics *"[...] the key to understanding corporate reputation is the behaviour of the company itself. By behaviour is meant what companies do, how they act, how they handle crises, and how well they treat stakeholders"* (O´Callaghan 2007: 105). Thus, in recent years, there has been a rising tendency for the large smartphone manufacturers to engage in CSR in order to ensure strong reputation and avoid risk. One way of meeting these new demands and standards put forward by the surroundings is through strong self-imposed regulative actions and self-binding efforts to consider social and environmental criteria in their business practices. Apple and Samsung have increased their engagement in various public-private partnerships and multi-stakeholder initiatives, as well as become members of different coalitions and network that work with social and environmental issues such as the EICC and the PPA (Web 37). This illustrates that the smartphone manufacturers intend to encourage the implementation of sustainable business practices through voluntary initiatives and self-imposed regulation such as the initiatives mentioned above. However, it is debatable if the motivation is based on a sense of moral responsibility, the corporations' self-interest or simply to prevent constitutional regulation. Furthermore, a reason as to why the smartphone manufacturers are beginning to self-regulate themselves, is that they operate in an international market and in multiple jurisdictions. It is not sufficient to comply with local rules and regulation since social and environmental concerns vary between countries (O'Callaghan 2007:117).

This demonstrates that the smartphone corporations are adopting a new business paradigm as a result of the fear of reputational damage "*Corporate self-regulation can be defined as the voluntary adherence by a corporation to a set of objective rules, norms, or standards"*

(O'Callaghan 2007:115). Differences in corporate self-regulation can be divided into adopting weak self-regulation where voluntary and soft laws meet expectations and demands imposed by authorities and strong self-regulations, which take a proactive approach that exceeds the existing expectations and demands. The positive consequences of self-regulation for the smartphone corporations are promoted as being more effective in preventing unsustainable activities and exceeding minimum standards, which benefit the smartphone corporations' reputation in a positive direction. However, the implementation of voluntary initiatives has been criticized for being solely designed to prevent control by authorities and regulations. Initiatives in the smartphone industry tend not to make a significant difference, as the issue of sustainable development is not considered from a broad perspective and it mostly concerned with environmental issues. Furthermore, the whole aspect of product design is left out in the industry self-regulation rhetoric and is discursively constructed not to be mentioned in external information material by the smartphone manufacturers or industry associations. The overall capitalistic paradigm, which characterizes the industry, is to sell more products and to promote the smartphone industry through growth, profit maximization, and capital accumulation. The concept of modular smartphones is not part of their business strategy according to the arguments above. Preferably, the smartphone corporations should work closely with governments encouraging and supporting the development and implementation of effective policies to promote sustainable consumption and production in the entire industry.

5.1.5 Regulatory mechanisms

To achieve greater sustainability in the smartphone industry, the primary instruments of action include enforcement of laws and regulations as well as voluntary standards and initiatives. However, the multifaceted nature of this industry often presents challenges for government regulations and their enforcement. In particular, the regulation for sustainability is difficult due to the complexity of the concept. Consequently, most governments rely on industry self-regulation to take responsibility for sustainability, however this is not the case with the smartphone industry. Government regulation and legislation have strengthened the sustainable manufacturing debate, while creating legal and non-legal binding frameworks for sourcing materials. The US government and the European Union are stakeholders that all have created soft and hard laws to help ensure that products from corporations in their countries are sourced ethically and responsibly. The American legislators have been leading in the enactment of the hard law known as the Dodd Frank

Act from 2010, which requires transparency for mining companies to disclose the presence of conflict minerals in their supply chains (Web 4). The European Union's recommendations on conflict minerals legislation were previously non-binding recommendations and soft law on the subject. The commission stated that companies should ensure that minerals from conflict zones are sourced responsibly. In 2014, the EU took a first big step in announcing a formal proposal to *"[...] stop profits from the trade of minerals fueling conflicts around the globe [...]"* (Web 38). The change was partly in order to ensure realignment with the 'Protect, Respect, Remedy UN Framework' (Web 39) and the revision of the OECD the Guidance (OECD 2013). Subsequently, the European Commission has initiated an action plan to move towards a circular economy. The 'circular economy' approach pertains to the concept of designing by intention to ensure that a product's life cycle has minimum impact on the environment and with the attempt to limit its impact on marginalized people involved in its development. Furthermore, a circular economy is*"[...] one that is restorative and regenerative by design, and which aims to keep products, components and materials at their highest utility and value at all times, distinguishing between technical and biological cycles"* (Web 40). This concept is important to take into consideration when attempting to remedy the situation of current business strategies in the smartphone industry, which is why the action plan provided by the European Commission can be used in the change process towards sustainable business practices. The action plan includes revised legislative proposals on waste to stimulate a transition, which should boost global competitiveness, foster sustainable economic growth, and generate jobs (Web 41). This proves that *"[...] state capacity still has a crucial role in facilitating the emergence, implementation, and enforcement of private regulation, and that successful public support is more likely to happen when norms, objectives, and interests overlap between the public and private spheres"* (Gale and Haward 2011; Foley 2013; Verbruggen 2013; Auld 2014; Bartley 2014; Guldbrandsen 2014 in Henriksen and Ponte 2015: 2).

Another aspect is that the smartphone corporations' supply chains are global, which make them increasingly recognize the need to monitor and disclose the list of suppliers (Web 42). The Global Reporting Initiative (GRI) provide standards for sustainability reporting, the GRI Guidelines, which *"[...] enable organizations to measure and understand their most critical impacts on environment, society and the economy"* (Web 42). Other international organizations have provided initiatives and frameworks that represent voluntary and non-binding directives on environmental

sustainability, labour standards and human rights. This includes The United Nation's 'Protect, Respect, Remedy UN Framework', which diverges from other initiatives in the field of corporate social responsibility, such as the Global Compact. It deploys normative guidance for companies concerning business responsibilities for human rights when complying with relevant national law as well as ensuring respect for international human rights law (Buhmann, 2012b, 90).

5.2 Consumer perspective

This section provides an analysis of the preconditions for sustainable business practices in the smartphone industry from a consumer perspective. Understanding the sustainability implications of consumption requires an understanding of consumption as a holistic process that goes beyond the economic activity of purchasing, and of how the purchasing context influences the consumer behavior. The following section will first present the consumer society and then explain what constitutes consumer-buying behavior. Thereafter, the results from the quantitative and qualitative data analysis will be presented together with their relation to the literature framework.

5.2.1 Consumer society

Influenced by the media, politicians, and corporations, most people today define themselves primarily as consumers (Christensen, Morsing and Cheney 2013). This implies that we have a level of disposable income that allows us to make discretionary choices about the services and goods that we purchase to meet our wants and needs (Belz and Peattie 2012: 79). Previously, most people considered themselves citizens. To be a citizen implies being a member of a political community. In contrast to the notion of the consumer, citizenship carries with it a right to political participation. Citizens are expected to be actively engaged in the public realm beyond the self and the moment. Consumers have rights, but are not expected to take responsibility. Thus, when people make deliberate choices of purchases, they rarely take the larger good of society into considerations (Christensen, Morsing, and Cheney 2013).

5.2.2 Consumer buying behavior

Consumer buying behavior is defined as the degree of consumer involvement and extent of perceived differences among brands. It involves elements from psychology, sociology, social anthropology, and economic, and it tries to understand the consumer decision-making process both individually and in groups (Howard and Sheth 1969). The elements of the buyer's brand-choice decision are a set of motives that pushes the consumer to act (needs), several alternative courses of action (brands), and the decision mediators by which the motives are matched with the alternatives (rules of the buyer environment and the consumers experience) (Howard and Sheth 1969). Understanding consumer buying behavior is crucial for marketers to better satisfy customers in developing suitable marketing strategies. This is particularly true in high-tech markets, where the risk of negative consequences resulting from the purchase, such as monetary loss, loss of social status, product performance, and loss of future opportunities, is perceived by the consumer as higher compared to other markets (Sarin et al. 2003).

5.2.3 The political consumer

The political consumers choose particular producers or products because they want to change institutional or market practices. They make their choices based on considerations of justice or fairness, or on an assessment of business and government practices. Regardless of whether the political consumers act individually or collectively, their market choices reflect an understanding of material products as embedded in a complex social and normative context, which can be called the politics behind products (Stolle et al. 2005: 246).

5.2.4 Research results

This part presents the results of the quantitative and qualitative data analysis and their relation to the literature framework. The results and the discussion are presented as a single interconnected chapter to benefit from the mixed method research approach and to provide a broader and more in depth understanding of the results and findings.

5.2.4.1 Determining factors when purchasing a smartphone

The quantitative survey conducted proved that political beliefs are not the predominant factor, when purchasing a smartphone. The majority of the respondents values product design, technology, and convenience as the three most important factors as shown in figure 5 on the following page (Appendix 1). The approach towards sustainable factors was more open and accommodating among the respondents from the focus group interview, though comments also included *"It is a sacrifice to switch. I would feel like I would sacrifice my daily life for the greater good"* (Stine 27:13) and *"They (Apple) have become such a big part of our lives, that the trading costs are very high to go to another brand"* (Malene 25:45). The optimal solution for one of the respondents from the focus group is to have Apple *"[...] who is the market leader, produce their phones in more responsible ways and to start demanding things from Apple instead of looking for a new competitor for a competing sustainable product, I would rather keep my Apple and stick with this, because the switching cost for me are too high. I am so used to this now. It is easier to stick to the same product"* (Stine 20:58). The statements indicate that even though the respondents value and support the idea of sustainability, the reality is different and more complex. This includes the fact that the smartphones today are multifunctional and the respondents use them for numerous purposes *"It is my alarm clock, my music device, my phone that I use for calls, my weather channel, my camera, most importantly for me"* (Stine 24:33). The notion of convenience presents many facets and refers to the state of proceeding with something with little effort or difficulty, which is closely connected to the concept of habits. In this case, the convenience factor includes buying the same brand of smartphone as previously, which is elaborated in the comments: *"Because I had one before and it's useful"* and *"The convenience of having everything in one device"* (Appendix 1). It further proves that habits are a dominant part of the decision-making process. Another aspect of habits is the underlying psychological aspect, where the consumer does not always recognize why they chose the product. This includes the value and power of branding and advertisement of the product. The respondents from the focus group interview revealed, *"It is the first time I am reflecting upon why I have this phone"* (Stine 5:44) and *"You could not avoid the brand"* (Stine 6:05). Another respondent also commented that because of previous use of iPhones, it was a natural choice to continue on to a newer model of iPhone, since *"[...] I am used to using it and I like the functionality"* (Malene 9:15). The same respondent was the only one out of three who had inherited the first two iPhones and when buying the third iPhone, a refurbished

one was chosen instead of a brand new one, an action that can be argued to be of a responsible consumer.

Furthermore, the cost of the smartphone is of high importance to the respondents with 48% of them indicating that price is a decisive factor. The respondents back this up from the focus group interview, which states that price is the determinant factor when buying a smartphone. However, in relation to price, sustainable reflections come up *"But I could be more concerned about the environment and the sustainability of the value chain of the production. It is easy for me to talk about it, but in the buying situation, it is not in my mind"* (Malene 10.40). Another respondent to price and sustainable considerations provides an additional perspective, that *"I am just waiting for a new sustainable solution to be available. If it could offer the same functionality for me and the price is acceptable of course, then I would definitely consider it"* (Stine: 38:40). This supports Jacobsen and Dulsrud's (2007) argument that as long as the ethical products are more expensive than conventional ones, people's moral may come in conflict with their ethics.

5.2.4.2 Sustainable and environmental considerations

In the quantitative questionnaire, the sustainable and environmental considerations before buying a smartphone was only perceived it as an important factor in the decision-making process by 8%. This is further supported by one of the respondents from the focus group interview, who said: *"I do not make that reflection and connection and I am generally a consumer, who is concerned with sustainability. But funny enough, I never connected sustainability with technology devices"* (Stine 12:32). The result does not support the argument by Stolle et al. (2005) that the groups of political consumers who choose particular producers or products are increasing since they *"[...] make their choices based on considerations of justice or fairness [...]"* (Stolle et al., 2005, 246). On the contrary, it could be interpreted as supporting Jacobsen and Dulsrud's (2007) argument about human beings' weak will and behavior, and about how the greater part of everyday consumption is embedded in routines and socio-technical systems of everyday life. Furthermore, the high concentration of respondents in the age group of 20-29 years old represents 54%, as shown in figure 6 on the following page. This supports the results above about not valuing sustainable factors, which was represented by the younger consumer fragment.

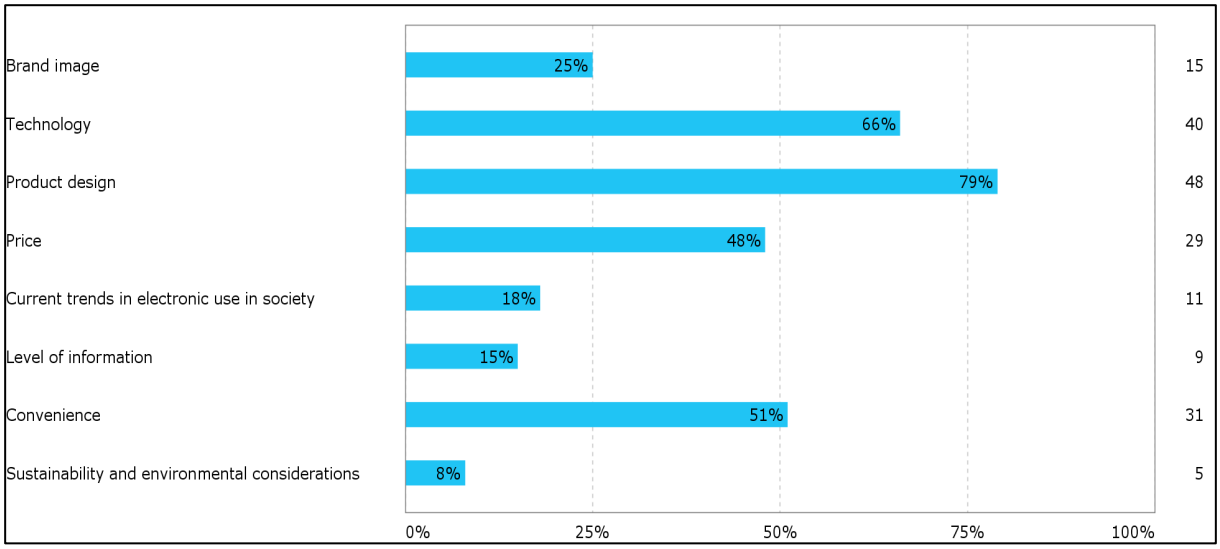

Figure 5. Which of the following factors are important for your choice of smartphone? Please choose the 3 most important factors (Based on data from survey: appendix 1).

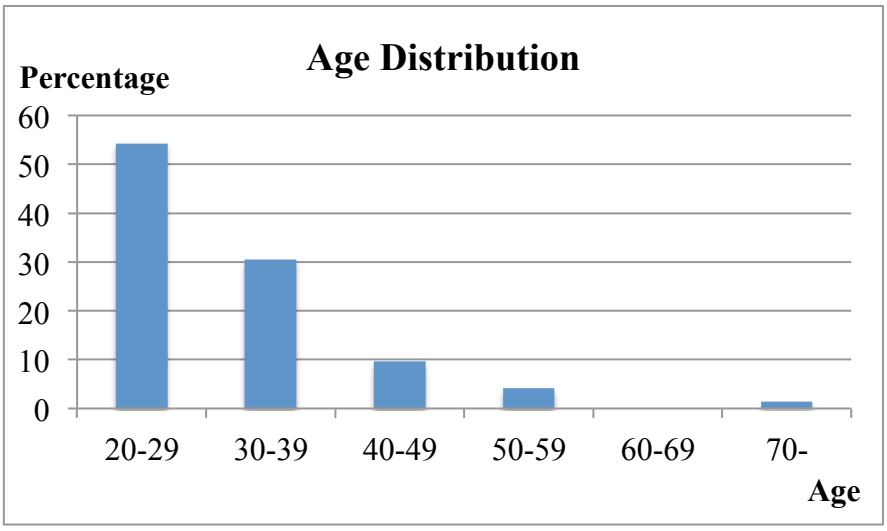

Figure 6. Age Distribution (Based on data from survey: appendix 1).

5.2.4.3 Attitudes towards Apple's business strategy

Following the indications of factors determining the respondents' choice of smartphone, the respondents were asked to inform which smartphone brand they were currently holding. In figure 7, the distribution of smartphone brands clearly shows that Apple's iPhone is leading on the Danish market with 79% of the respondents having an iPhone (Appendix 1). Since Apple is a popular and leading smartphone manufacturer, the high number of iPhone users is not surprising. However, it is an interesting result, given the fact that Apple's devices and platforms help Apple

lock in the consumer in its ecosystem. First, Apple achieves hardware lock-in with the devices. Then, it achieves software lock-in with operating system software, application software, and third-party software and apps. Then, the cloud storage system, iCloud, helps Apple achieve the data lock-in (Web 43). The respondents from the focus group interview express their irritation with Apple's strategy on locking in their customers *"I have bought my music for the past five years on iTunes and that is several thousands of kroners on music that I now only can listen to on Apple products"* (Stine 26:47). Furthermore, they have experienced the non-transparency, which Apple represents *"I got a bit annoyed with Apple lately, because my chargers they break, both for my computer and iPhone. I am pretty sure they do it on purpose. They have a 2-year long life and then they break"* (Isabella 19:25).

The deliberate strategy Apple uses, goes against the modern political consumer, who does not wish to be tied down by a specific product or producer, but instead prefers to make the deliberate choice of certain products they want to buy based on ethical considerations and political beliefs (Stolle et al. 2005). Consumers questioning Apple's strategy are growing in number and the consumers deselect Apple's products based on individual moral judgment. However, the respondents do not express concern in this aspect or worry that they are actually locked down by using Apple's products. Instead, they express satisfaction over the fact that Apple's products are compatible, which they perceive as an advantage: *"It was my first smartphone but I had used my friends' iPhones before so I chose a smartphone I was familiar with and was compatible with my other Apple products", "I like the design and functionality. Also, it works well with my Mac computer"* and *"I had the Apple iPhone 4 and I simply just loved that model, so it was an easy decision to pick a better, but similar version of that. Further, since I have a MacBook and iPad it's easier to choose the same brand as they work better together"* (Appendix 1). A respondent from the focus group interview adds, *"I liked the idea that you could connect the devices to the computer"* (Isabella 8:20).

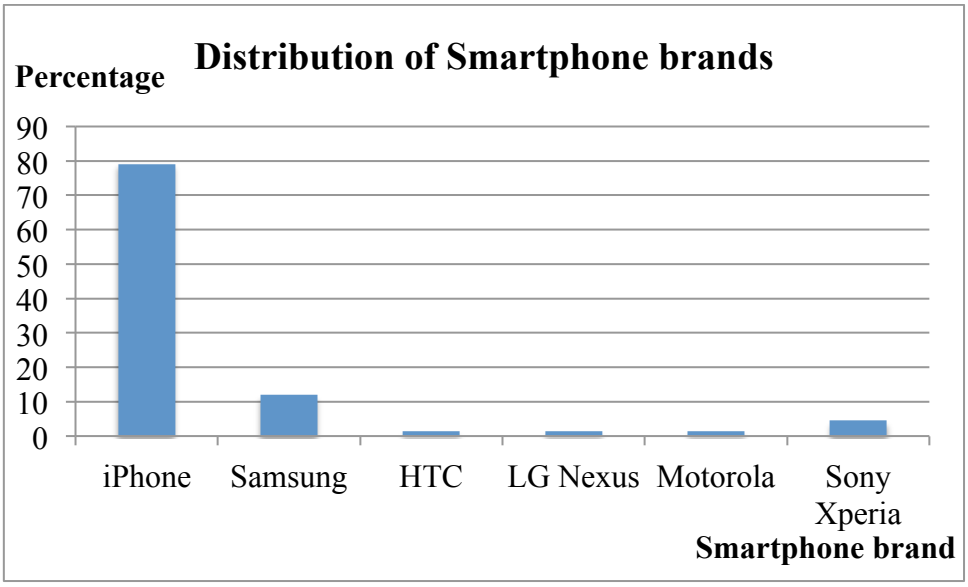

Figure 7. Distribution of smartphone brands (Based on data from survey: appendix 1).

Even though the iPhone scored the highest rate among the respondents, 11% answered that they own a smartphone from Samsung, Apple's closest competitor. The comments included *"Because I have great experiences from using Samsung products"* and *"Economic reasons, the ability to customize, not an Apple product"* (Appendix 1). The statements prove that consumers will buy a smartphone based on passion and loyalty. Moreover, the comments can be regarded as intentional statements from respondents who do not wish to support Apple products because of political, technical, or moral convictions. Though the respondents from the focus group interview are all Apple users, similar incentives make up for why they are loyal to that specific smartphone brand: *"the switching cost are too high, you do not want to go over to another brand now, because at this point it is too late. You are an Apple user"* (Stine 9:20).

5.2.4.4 Attitudes towards recycling and discarding of smartphones

The responsibility for discarding smartphones safely reveals an interesting finding of 46% of the respondents from the quantitative questionnaire who have chosen to save their last smartphone, as shown in figure 8 on the following page. The comments associated to the figure proved that the respondents did not seem to have put much thought into why they had kept the smartphones as well as little concern over the sustainable as well as economic consequences: *"I did not need it anymore. I actually do not know where it went? Maybe it is in some moving boxes somewhere?"* (Appendix 1). Today, there are many shops and platforms available, where the consumers can sell

their old smartphone. This allows other more conscious consumers to buy used, functioning smartphones at a lower price. One of the reasons behind why so many of the respondents have chosen to save their old smartphone instead of selling it or discarding it responsibly, can be connected to habits and lack of information on where to properly discard the old smartphones. Furthermore, socioeconomic aspects such as occupation, income, education as well as people living in affluence can explain the behavior, attitudes, and lack of opinion and stance on the matter of responsible discarding of smartphones.

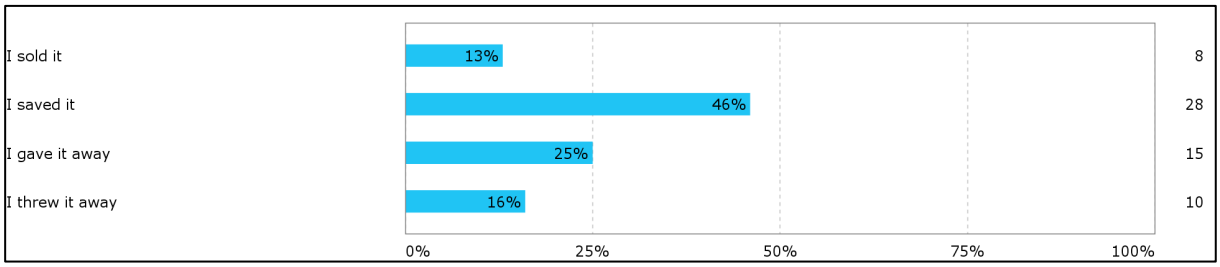

Figure 8. What did you do with your last smartphone? (Based on data from survey: appendix 1).

The social enterprise Fairphone has attempted to engage their political consumers, and has *"Encouraged consumers to replace their phones only when they have reached the end of their usable life"* (Web 44). This invites the political consumer to become a part of the sustainable life cycle of the product and helps create a sustainable product well after the mobile phone is out of the manufacturers' control. Another perspective on sustainable smartphones is the fact that the greenest smartphone available is the one that already exists. If it works, there is no need to replace it. The fairest phone is the one the consumer already owns, which the respondents from the focus group interview agree on: *"I have thought that my next phone should be another brand. But I am also that kind of consumer that does not throw things away that works"* (Malene 16:10). Another respondent reflects on the responsible and sustainable aspects *"[...] a responsible consumer and one who is concerned with sustainability would not throw away their current phone and go buy a new phone even if it was a sustainable phone because that is not a sustainable choice you make"* (Stine 17:41). The responsible choice would be to stick with the current phone as long as possible, until the point where it does not work anymore and then "*[...] hope that a sustainable replacement will be available on the market"* (Stine 18:09). However, reality is that consumers, especially the younger segment, are discarding the old smartphones quickly and without hesitation and investing in a new model with new features and technology. This consumer behavior suits the smartphone

manufacturers on the market well, headed up by the multinational corporations Apple and Samsung, who both produce disposable smartphones. Their smartphones can be repaired, but only to a certain extent. An upgrade of functionality and features requires a new smartphone. Hence, their products are not meant to be repaired but to be replaced by a new product. Planned obsolescence is one of the many environmental and social problems that comes with smartphones today (Web 45).

5.2.4.5 Attitudes related to sustainable business practices

The state of sustainability in the smartphone industry is looked upon with great concern and seriousness by all of the interviewees in the focus group and they all agree that there is potential and need for improvement. However, all of the respondents expressed that even though they believe changes need to be made, they are not capable as consumers to make the difference and ensure that change. The commitment to take action is not present in the respondents: *"Maybe I have heard about it a few times and thought that it would be great if there was a new company who invented a sustainable smartphone, but as a consumer I have not thought of the option that I could bring it to the table and setting demands"* (Stine 12:58).

The respondents do not consider it their responsibility on a consumer level. Instead they call on the international community to take action and confront the multinational corporations with the question of *"[...] who controls what is available for us on the market, [...] who controls them? I am waiting for someone else to take action on this* (Stine 37:45). Hence, the respondents want to be ethically aware consumers, but they expect other institutions to take action and responsibility, which can be perceived as a form of convenient sustainable consumer approach. However, the respondents' explanation to this is that *"The consumer's voice is not strong enough. We are strong enough to boycott Apple or the companies that are destroying the environment and the industry, but I think it is the government's responsibility to regulate the market"* (Malene 40:20) and *"Someone has to push the government as well, especially in developing countries where governments are corrupt; this can easily be an issue"* (Isabella 41:19).

All of the respondents from the focus group interview agreed that sustainable business changes in the smartphone industry have to happen on an international level because it is an international industry. It is not sufficient if a government comes up with a local set of laws for the industry. According to global laws, Apple and smartphone producers must adhere to existing conventions,

though these have proven not to be sufficient, as there are many loopholes (Bianchi 2013). Suggestions as to where to start to implement more sustainable business practices include starting in small areas of the production chain and then over time expand to the entire production line (Malene 42:40). Another suggestion by a respondent is that governments should allocated money to invest in research and development and create a public-private partnership, which could innovate a new sustainable solution. This would be an opportunity to get a completely new product and start demanding more from the established producers (Stine 41:52). The respondents believe that *"Once there is a sustainable option on the market, the consumers will come along"* (Stine 45:05). There is an international momentum right now for sustainable products and it has the potential of putting pressure on the other actors in the smartphone industry. However, aspects of price still play a role in the decision-making process as *"I would be open to it, if I felt it met my expectations and if the price is ok and if I could see the benefits, then I would consider it (buying a Fairphone next time)"* (Stine 48:38). In the statement, it is implied that in order for the respondent to consider changing to a more sustainable solution and smartphone, communicative means are important. The success for the sustainability marketer will depend upon developing a very clear understanding of consumers, their motivations, and the barriers they may face to making more sustainable consumption choices (Belz and Peattie 2012: 86).

5.3 Mechanisms facilitating a sustainable change

The following section will combine the results of the preconditions, which emerged from the theoretically based governance analysis with the results from the empirically data based analysis and explore the mechanisms needed for a sustainable change in the smartphone industry's business practices, also phrased as "*[...] a concern for governance should direct our attention to the mechanisms by which steering occurs as well as the particular social relations that enable governing to take place"* (Andonova, Betsil, and Bulkeley 2009: 56). First, the section will focus on how sustainability can become a strategic driver for innovation and competitive advantage for smartphone corporations and the special challenges and opportunities in realizing it *"The task lies in the process of shifting the sustainable business debate from public relations to competitive advantage and corporate governance"* (Elkington 2001: 6). Secondly, communicative methods will be applied to examine how effective communication strategies can help consumers make

informed decisions and promote constructive public debate about new technologies such as smartphones.

5.3.1 Strategic implementation of sustainable business practices

Successful implementation of sustainable business practices can only be reached when the holistic principle of sustainability is understood and integrated into the strategic planning of the business. If sustainability initiatives are seen as add-ons or as another performance variable, the full benefits of sustainable business practices will not be reached. Strategic sustainability represents a commitment demonstrated by top management that moves beyond compliance and efficiency to avoid risks and minimize costs. The integration of sustainability into strategic planning will also require businesses to develop a more long-term focus and thus help them to examine threats and opportunities and see relationships in the external environment. Furthermore, the principles of stakeholder engagement seek to create better relations with its surroundings and describe how companies can become better at integrated external engagement (Browne and Nuttall, 2013). Traditional corporate social responsibility (CSR) is failing to deliver, both for companies and society. It is essential that sustainability is perceived as a company-wide goal that incorporates every aspect of business and its relationships. This requires a system thinking that everything is related and that each part in the business can contribute towards more sustainability. Therefore, companies should integrate external engagement deeply into every part of the business by defining what they contribute to society, knowing their stakeholders, engaging radically with them, and applying world-class management (Browne and Nuttall 2013: 4). Hence, bottom-up approaches as well as top-down approaches are required including defined goals, tactics and budgets, which should be reviewed and updated regularly. Also, the process and performance obliges regularly monitoring and auditing.

5.3.1.1 Benefits of the implementation of sustainable business practices

The moral obligation or pure desire to contribute to society might be the reason for adopting sustainable business practices for some businesses, but for many the business case for sustainability and the benefits related to sustainable business practices tie the commercial interest of business to the goals of society, hence, *"[...] the sustainable capitalism transition will be one of the most complex our species has ever had to negotiate"* (Elkington 1997 in Elkington 2001: 3).

Economic sustainability is the business' survival thus prime consideration of businesses in operational terms and the most practiced actions. Hence, environmental business practices should be considered as the first step towards a sustainable business. For the smartphone industries the sustainable business strategy considers the economic impact on the community such as job creation, local wages, working conditions and the contribution to local economic growth and prosperity. Furthermore, engagement across the supply chain and with suppliers to ensure similar values and practices are considered issues of economic sustainability. Corporations need to maintain corporate profitability and ensure internal financial stability at the same time.

The most cited benefit of sustainable practices is the reduction of cost (Landrum & Edwards 2009). The prime motive behind introducing environmental initiatives is cost related. In particular, the rising costs for water, energy and waste disposal has led many businesses to look for alternatives, including Apple who has invested in solar farms (Web 18). Operational measures are for example recycling systems, which include using recycled and sustainable materials in the packaging of the smartphones, take back and recycle the products responsibly once they become obsolete, installing water-saving devices and using low energy light bulbs. However, these initiatives focus exclusively on the environmental dimension of sustainability business practices.

Sustainable business practices can also bring benefits to a company in terms of positive public relations and improved smartphone image with shareholders and local community. These benefits can differentiate the business from its competitors and can be the source of competitive advantages and new market opportunities.

5.3.1.2 Barriers to the implementation of sustainable business practices

Businesses can be limited in their implementation of sustainable business practices by external factors that are beyond their control such as government policy or the attitudes of stakeholders and their lack of interest. Internal hindrances within the smartphone corporation might exist. The main barriers with the implementation of sustainable business practices outlined are the involved costs, the complexity of the concept and the lack of information and support.

A common concern of the smartphone corporations is the cost involved in implementing sustainable business practices, which is perceived as being an expense as opposed to an investment. This is due to the fact that the initial investment and transition to energy saving or alternative technologies can be expensive and relatively inefficient.

The complexity of the definition of sustainability and sustainable business practices also pose as a barrier towards a sustainable change. The imprecision in the definition makes the concept difficult to understand and translate into a meaningful context of action and measures.

In order to overcome the difficulties businesses are facing concerning the complexity of the concept of sustainability, information and support from the public sector is required. However, research have criticized that the communication of environmental concerns by governments are ineffective. Findings have revealed that the roles of the employees responsible for development and management of infrastructure and regulation were not understood and a more active role of the public sector as a coordinator was demanded.

5.3.3 Communicative methods towards sustainable behavior

Effective communication can help consumers make informed decisions and promote constructive public debate about new technologies. Furthermore, effective communications are also needed as part of policies that target behavior change, such as sustainable consumer choices (Bruine de Bruin and Bostrom 2013). By using the mental models approach, the first step is to identify what the consumers need to know to make more informed decisions with regards to smartphones. In this case, there is a need for social science research and scientific experts at government agencies, NGOs, or other organizations, who seek to develop communications materials with the goal of informing individuals' decisions and facilitating behavior change. To develop effective communications materials for members of the general public, scientific experts need to understand what information people need to have. The expert decision model's step 1 to develop communications recognizes that people need information that not only fixes the gap and misconceptions in their knowledge but also builds on their existing beliefs and preferred wording (Bruine de Bruin and Bostrom 2013: 14066).

Secondly, there should be an identification of what the consumers already know about the smartphone industry, especially with regards to the production processes, and how they make their decisions in terms of purchasing, using, and discarding of their smartphones. Gaining insight into the consumers' existing knowledge and information on the subject of smartphones as well as identifying gaps and misconceptions with the mental models approach provide some of the required communication tools for enabling consumer behavior change. This step involves interviews and survey methods to stimulate people's mental state. The interviews can provide an initial characterization of people's beliefs and decisions as well as the wording that they prefer to describe the issues related to smartphones (Bruine de Bruin and Bostrom 2013). The intention is to inform and influence the individuals' decision and public debates, and to enable behavior change (Bruine de Bruin and Bostrom 2013: 14062). However, before distributing the communications campaign, evaluation studies with larger samples are needed to examine whether the designed communications material does, indeed, lead to desired improvements on measures of understanding and informed decision-making (Bruine de Bruin and Bostrom 2013: 14067).

The resulting evidence-based communications are more likely to address what people need to know to make more informed decisions, allowing them to obtain better outcomes for themselves and the society in which they live. This illustrates the challenges of facilitating informed decision-making about complex projects, which impact a variety of stakeholders, who may have competing goals and place different values on the same outcome. The design of communications intended to facilitate informed-decision making and behavior is a suggested approach to engage consumers into more sustainable consumption patterns with regards to smartphones. Stakeholder engagement strategies offer an approach to engage with the external environment. Applying a transformational strategy can for the smartphone corporation result in joint learning and sense making for the smartphone corporation and the consumers by framing the problems in the smartphone industry together and managing a solution together *"The most powerful outcomes from a transformational engagement process may be a shared ownership of the problem and a shared vision of solution"* (Bowen et al. 2010: 310). As a concept, transformational engagement strategy moves beyond symbolic engagement activities and relies on authentic dialogue, critical reflection, as well as information and knowledge sharing between the smartphone corporation and the consumers (Bowen et al. 2010). By using a communications strategy to engage with the community and consumers, the corporations can gain and maintain their legitimacy as a corporation if the strategy

is successful. Thus, realizing the role the corporations have in society point to a politicization of the corporation (Scherer and Palazzo 2007).

6.0 Discussion

During the governance analysis other perspectives appeared with regards to the preconditions for sustainable business practices throughout the smartphone industry. This includes a potential conflict of interest with government regulation aimed at ensuring ethically sourced minerals. Though regulations can enhance supply chain transparency and accountability, it can also lead to unintended consequences. The consequences involves that the strategy is not developed and monitored thoroughly in the region, which can discourage companies from sourcing minerals from the very region the policies were meant to be assisting. Furthermore, aspects of chaotic conditions and a weak and corrupt government in the DRC, could make it hard for industrial buyers to tell the difference between legitimate and conflict minerals. In particular, the conflict minerals law of the Dodd Frank Act from the US has inadvertently resulted in increased poverty and unemployment in the DRC (Web 46). Even though the legislation was created to ensure that US companies would not use conflict minerals in their supply chain by instigating a process of change in the mining industry in the DRC, thus weaken the rebel groups and cut off their mining profits, unexpected consequences occurred. The local community and people in the DRC are the main victims who are experiencing the unforeseen consequences. A reason to this is the government in the DRC, who is absent in many areas including corruption, bureaucratic and logistical delays that have affected the process of changing the mining industry into conflict-free minerals. As a consequence of the lack of political will and engagement in the government of the DRC, the well-intentioned law to audit the American companies supply chain has instead left millions of miners and their families deeper into poverty and unemployment (Web 46). Wherefore, it could be appropriate to investigate further who the responsible actors are in the implementing of regulations and how to ensure that they are carried out in the intended and most efficient manner.

6.1 Power perspective

In connection to the issue above the aspect of power is deemed suitable to examine. In the analysis part several regulatory mechanisms was investigated and put forward in order to achieve a sustainable change in the smartphone industry. However, it could be interesting to conduct an in depth study on who has enough power to make the demanded change and to accelerate the transition in the smartphone industry's business practices. The paper has focused on the preconditions needed to make a change from different perspectives as well as central mechanisms and cooperation types. Among these coalitions and interactions between various organizations, businesses and governments were analysed. A study of who are the actors that holds sufficient power and the ability to influence and control the behavior of the industry to ensure an actual change is interesting. In that connection authority power is perceived as legitimate by the social structure, hence, representing an important factor with regards to the fundamental change in the smartphone industry's business practices.

6.2 Media perspective

In this paper, the focus was a combined governance and consumer perspective on a change towards sustainable business practices. However, a media perspective on how the media is portraying the smartphone industry with regards to sustainable strategies and business practices would also be interesting to conduct. Given the increasing awareness about the environmental and social impacts of economic activity in society, the media can play a pivotal role in creating momentum for sustainable development both on national and international platforms. A media perspective for this paper would concern the Danish media due to the focus on the Danish results of the quantitative and qualitative research methods. However, an international media perspective is nonetheless interesting to investigate. Furthermore, the media have the ability and power to bring awareness to the critical issues related to sustainable development in the smartphone industry *"The press also has a say in this, they are such a strong voice [...]* (Isabella 50:41). Hence, the media today is playing an important role in creating and shaping the public opinion and strengthening of society. This was furthermore commented on by one of the respondents from the focus group interview *"We are shaped by the media [...] we are no better than what we are told"* (Stine 35:20). The function of the media is partially to act as a watchdog to protect public interest against malpractice and to create public awareness. However, within the last decade there has been

an increase in criticism of the media and their approach to information sharing as well as the strategic choices they make on which subjects they cover and how they frame the news. The media have a powerful position in society, which entails a lot of responsibility as well. For this paper, the medias role in knowledge sharing as well as strategic cover on the subject of a needed sustainable change in the smartphone industry could be interesting to investigate. This includes looking into how the information is communicated to encourage and reach consumers around more sustainable behavior.

Given the aspect on consumer behavior and media with regards to sustainable business practices in the smartphone industry, the anti-corporate movement is another aspect to consider investigating in the paper. The anti-corporate movement is also described as a protest field due to the diverse nature of the participants. This movement is a global mobile movement with access to information, which makes them highly powerful. It is a counter-culture to the corporate world, the citizen's guardian, and voice in society that poses a significant threat to corporate reputation. These activists are largely against the power of corporations, which is overshadowing the authority of nation government and does not benefit society but only shareholders. These groups put pressure on corporations and have a strong influence on the media agenda and the reputation of not only companies, but also entire industries (Bennett 2004). These activists pressured lawmakers in the US to pass the measure in the Dodd-Frank Act in the 2010 (Web 4). Hence, many activists feel that global economic arrangements such as trade unions and deregulated labour empower corporations to escape regulations from nations. As a consequence activists are now using various communication methods that made globalization possible, to question globalization. (Bennett 2004).

7.0 Conclusion

This paper set out to investigate what can drive the global smartphone industry to adopt sustainable business practices. In order to do so, the paper was divided into three individual sections in order to answer the research question comprehensively. Hence, the structure was based upon three sub-questions, respectively. The analysis explored the preconditions for sustainable business practices in the smartphone industry. First, from a theoretically based governance perspective and secondly from an empirically data based consumer perspective. At last, the third

analysis combined the two analyses and deduced the mechanisms needed for a sustainable change in the smartphone industry's business practices.

The theoretical foundation for the paper was the concept of transnational governance, which included the challenges of governing sustainability in a complex constellation of actors and stakeholders in the smartphone industry. This included examining various tools and initiatives available such as issues of authority, legitimacy, and effectiveness. Furthermore, public orchestration was used to show how a variety of business, government and civil society actors engaged in different sustainability initiatives can be directed towards achieving the common goal of a more sustainable smartphone industry.

A mixed method approach was chosen in order to apply method triangulation of the quantitative and qualitative research methods (Bryman 2012: 37). This particular research method helped to understand the complexity in the comprehension and comparison of attitudes and actions to assess the consumers' behavior and motivation with regards to driving a sustainable change in the smartphone industry. The quantitative research in form of a self-completion questionnaire provided evidence and allowed for a more thorough analysis. The semi-structured focus group interview constituted the qualitative part of the research and gave a sense of process and enhanced the breadth and depth of the issue. The focus group method was the primary empirical foundation for this paper.

The analysis showed that the notion in society of the modern consumer as a morally responsible political actor, who mobilizes and put pressure on businesses and governments about sustainable development-related issues is not predominant. Instead, the results from the quantitative and qualitative data analysis on consumer behavior displayed that there is a divergence between how the consumers wants to incorporate sustainable behavior when buying smartphones and the reality, which proves that other factors such as product design, technology and convenience as well as price are more important factors in the buying situation.

The governance perspective with transnational actors, who operate in a political sphere where public and private actors interact across borders and political jurisdiction, proved to be the important link in order to create solutions with regards to the sustainable and environmental

challenges in the smartphone industry (Henriksen and Ponte 2015). Hence, governments, international organizations and smartphone companies can each draw on their respective competences and roles to contribute to ensuring that trade and investment in natural resources is beneficial to society at large. Furthermore, the analysis proved that there is an increase in smartphone companies who have applied self-imposed regulation. However, it is questionable if the motivation is based on a sense of moral responsibility, the corporations' self-interest or simply to prevent constitutional regulation since the expectations of smartphone corporations never have been higher from consumers and governments. Besides obeying the law, the smartphone corporations are expected to ensure high standards across their supply chain.

The globalized world economy creates networks of interdependencies and bonds of common interests among various actors, thus facilitating international cooperation. Although states remain important actors they are enmeshed in a network of transactions and interdependencies, which limit and constrain their authority (O'Brien and Williams 2010: 349). Therefore interactions between businesses and states as well as organizations can pave the way for the needed sustainable change in the smartphone industry. Also, the long-term planning horizon is important for the success of sustainable business practices. There is a need to create long-term value in the use of resources and to develop a more inclusive growth model in the smartphone industry. The strategic planning is significantly related to the actions taken by legislators in order to ensure that the smartphone companies will adopt them. The regulatory mechanisms needed combine indirect instruments with more direct regulatory tools (Henriksen and Ponte 2015). This includes existing international regulations, such as the Dodd-Frank Act of 2010 as well as regulation from the European Union as emerged in the analysis. Furthermore, the analysis showed that there is a continuously need for the activities from the smartphone corporations to be monitored and critically assessed in order to ensure that the corporations comply with the law. Thus, pressure from a political part can help drive the shift towards sustainable business practices that is needed in the smartphone industry. Evidently, there is still a long way from reaching the objective, but significant progress has been made recently with the existing international regulations.

In the third analysis it was proven that effective and strategic communication can encourage a change in consumer behavior through the expansion of knowledge about the smartphone industry's current production practices as well what it takes to engage consumers towards more

sustainable behavior. Consequently greater information and disclosure about the impacts of the products is necessary to influence the consumers.

At last, the paper overall demonstrated how business is here to serve society, thus the need for conduction business in a sustainable and more equitable way not only with regards to resources but also regarding business models that are sustainable and generate reasonable returns. The corporations in the smartphone industry need to be part of the solution and not be a bystander in the system that gives it life in the first place. Furthermore, the corporations have to take responsibility and instead realize how sustainability can become a driver for innovation and competitive advantage. Though it requires long-term thinking about their business model imposed by regulatory tools by the governments. The development of a comprehensive approach towards sustainable business practices in the smartphone industry will be a central governance challenge including a market challenge in the coming decades (Elkington 2001: 16).

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9.0 Appendices

9.1 Appendix 1: Questionnaire

Introduction

Please help me gather information for my master's thesis project on consumer behavior with regards to smartphone consumption. The goal is to examine the usage and motivations behind the consumers' choice of smartphones.

The survey only takes a few minutes to complete, thank you!

Section 1: Demographical information

Question 1: Please state your gender:

Male: 34%

Female: 66%

Question 2: How old are you?

Age group	Number of respondents	Percentage
20-29	39	54,2
30-39	22	30,5
40-49	7	9,7
50-59	3	4,2
60-69	0	0
70-	1	1,4
	72 respondents in total	100

Question 3: Where do you live?

Copenhagen, Denmark: 75%

Other part of Denmark: 7%

Other: 17%

Based on responding "Other", the following question appeared:

Please state which country you are from?

Country	Number of respondents	Percentage
Belgium	1	8,3
Canada	1	8,3
Jamaica	1	8,3
United Arab Emirates	2	16,7
United States of America	7	58,4
	12 respondents in total	100

Section 2: Attitudes towards owning a smartphone

Question 4: Do you own a smartphone?

Yes: 100%

No: 0%

Based on responding "Yes", the following question appeared:

Which brand and model?

Smartphone brand	Number of respondents	Percentage
iPhone	53	79,1
Samsung	8	11,9
HTC	1	1,5
LG Nexus	1	1,5
Motorola	1	1,5
Sony Xperia	3	4,5
	67	100

Section 3: Attitudes towards consumer behavior when purchasing a smartphone

Question 5: Why did you choose that particular smartphone?

Brand Image	Technology	Product Design
I like the brand	I like the iOS interface, and my old iPhone broke	I like the design inside out
Brand and user-friendly features	Operating system, functionalities, applicability	I like the design and functionality. Also, it works well with my Mac computer
Brand value, user friendly	Good camera	Easy and great design
Company brand	Camera	The phone is pretty and easy to use. User-friendly
	Quality, great camera	I like the design and functionality of it. Also, it seemed like the "only" real option at the time when I bought it.
	Takes great pictures	Screen size and Apple-ease
	More memory	I choose Apple due to the smart design and easy usability.
	It is compact, powerful, and has the best camera currently in a smartphone.	I liked the look and picture quality
		User friendly, need design, high quality, trusted brand

Price	Current trends	Convenience
It was cheap and an Apple. It has worked and followed me for 3,5 years know	Good reviews from friends	It was handed to me for free
Could buy it cheap	Because my friends had it and they really enjoyed its features. First I was reluctant because I did not want what everybody else had but now I am glad that I listened	Reliability and upgrade from older iPhone 3Gs

Economic reasons, the ability to customize, not an Apple product	I had one before
	Always used Apple products. Camera on it is good. Size is good for me.
	Previously I have had an iPhone and I have always been satisfied
	It's easy to use
	Because my brother had a spare
	I like Apple and my last phone was an Apple too
	I have always used iPhones
	I had the Apple iPhone 4 and I simply just loved that model, so it was an easy decision to pick a better, but similar version of that. Further, since I have an MacBook and iPad it's easier to choose the same brand as they work better together.
	My old iPhone died and it was easy just to stick to apple products + I knew I would be able to keep all my apps
	It is convenient and smart
	Knew the setup from previously owned phones
	Didn't choose it - it was a gift.
	Company paid - only option
	Easy to use, no instruction needed, and due to FaceTime
	Have other Apple products

	Because I have great experiences from using Samsung products
	After a long track of iPhones it seemed like the obvious choice. Like the setup, how it's easy to navigate etc.
	I had an iPhone before and I like Apple's products
	it was my first smartphone but I had used my friends' iPhones before so I chose a smartphone I was familiar with and was compatible with my other Apple products
	Supplied by employer
	The most attractive phone for me
	My girlfriend got a new work phone so I got her old one
	Work
	It was a gift
	Because my old iPhone 5 died and I've been happy with having an iPhone
	I prefer Apple and at the point of purchase this was the newest model
	I got it as a Christmas gift

Section 4: Information on consumer experience with smartphones

Question 6: Is this your first smartphone?

Yes: 11%

No: 89%

Question 7: When did you buy it?

Less then 6 months ago: 13%

6 months ago: 19%

1 year ago: 30%

2 years ago: 27%

3 years ago: 8%

4 years ago or more: 3%

Section 5: Attitudes towards consumer behavior when purchasing a smartphone

Question 8: Why did you buy a smartphone?

Convenience	Product design	Functionalities
Convenience	Because of the quality of the camera and because of the design	Internet, apps, video calls etc.
Because I had one before and it's useful.	To get an all-in-one device to use as camera, phone, calendar etc.	Information in my hand - need to be able to see mails and calendar being on social medias
Because my old one broke. Also so I can Skype, check apps, etc.	For a good camera	Lots of information at finger tip
You can pretty much only get smartphones these days and once you had one you can't live without it	Because of the many functions - camera, map, translate function, Facebook, Instagram, Snapchat	So I can access all types of apps
I cannot live without the social media apps, or Google maps! Once you've gotten used to it, its impossible to do without	User friendly, cool design, good camera, good apps and I love Apple's products	
My old phone stopped working and I wanted to access apps and a camera on-the-go.	I needed to try iPhone	
The convenience of having everything in one device	I wanted to be part of the "cool"/ "hip" group at that time. I was embarrassed of my old cellphone.	
Convenience and to (gain easy) access certain communities/ platforms (Facebook, Instagram, Snapchat etc.).	Improve pictures, postings, and speed.	

Just makes everything a bit easier. To not need your computer every time you use the internet etc. Just more handy and nicer than an old school phone.	I needed something to my music and a new phone at the time. It is practical.
Easy to use and use it for many purposes	

Section 6: Attitudes towards consumer preferences including sustainable factors, when purchasing a smartphone

Question 9: Which of the following factors are important for your choice of smartphone? Please choose the 3 most important factors:

Brand image: 25%

Technology: 66%

Product design: 79%

Price: 48%

Current trends in electronic use in society: 18%

Level of information: 15%

Convenience: 51%

Sustainability and environmental considerations: 8%

Section 7: Attitudes towards responsibility and sustainable discarding methods

Question 10: What did you do with your last smartphone?

I sold it: 13%

I saved it: 46%

I gave it away: 25%

I threw it away: 16%

Based on responding "I threw it away", the following question appeared:

Please elaborate on why you threw it away?

- It didn't work
- Broke
- It was broke and died
- It got stolen
- It died
- I did not need it anymore. I actually do not know where it went? Maybe it is in some moving boxes somewhere?
- I was drunk
- It was broken
- It got stolen, that is all

Thank you for taking the time to complete the survey!

9.2 Appendix 2: Focus group interview

Presentation of the focus group interview

Interviewer: *Welcome to this focus group interview in connection to my master's thesis project on consumer behavior with regards to smartphone consumption. For this interview I have three participants. First I would like each of you to introduce yourself by name, age, education and whether you have a smartphone and which one you have, before we begin.*

Isabella: *My name is Isabella Hjorth Falsted, I'm 38 years old, I have a master's degree in sociology and French and yes, I do have a smartphone. An Iphone 5.*

Stine: *My name is Stine, I'm 27 years old. I have a Master's degree in international studies. I have an iPhone 5, the first model. It is fairly old, it is from 2013, and I'm thinking about buying a new one.*

Malene: *My name is Malene, 28 years old. I study a Master's degree in Political Communication and Management. I also have an iPhone. I currently study at Copenhagen Business School.*

Interviewer: *Thank you very much for taking part in my focus group interview. The purpose of my thesis is to examine the motivations behind the consumers' choice of smartphones, and therefore I would like you to start by discussing the reasons for why you have the particular smartphone you have right now.*

Isabella: *My reason (for possessing an iPhone) is that I spent a couple of years in Tanzania and when I came back to Denmark, I started a new life and a new phone and I had just read Steve Jobs biography actually in Tanzania and I was very inspired by him, his history and the idea of an iPhone, computers and everything you can connect to each other. I did not know much about technology before, I'm not sure I know a lot now either, but I came home from a country with no iPhones and I got my first iPhone ever. I came home 3-4 years ago and I have not changed it. I still work.*

Interviewer: *So, your iPhone is from 2013?*

Isabella: *Yes, it is the same one.*

Interviewer: *Malene, you also said you have an iPhone 5. When did you buy it?*

Malene**:** *Yes, it is also an iPhone 5 and I bought it last year, I think. But they have a new concept, Apple, that if you buy a phone and it breaks down, then they send it back to Apple and repair that part and then they sell it again with the guarantee.*

Stine: *A refurbished one?*

Malene: Y*es, I bought one of them last year and I think it is from 2013.*

Malene: Yea*h, and it still has the two years guarantee.*

Interviewer: *A 1000 kroner cheaper than the original price or 1000 kroner for the new (refurbished) iPhone?*

Malene: *No, 1000 kroner cheaper than a new iPhone.*

Malene: *I started with an iPhone 3, which I got from my sister, I think. And then I got an iPhone 4, which I also got from my sister. I inherited them both. And then I bought the refurbished iPhone 5 that I have now.*

Interviewer: So *you are saying, that the two first ones were used?*

Malene: *Yes.*

Stine: *I got my (iPhone 5) when we moved to New York and I just acquired a MacBook computer and I was very happy about that. I started to get to know the software, the Apple software and I liked it and it appealed to me, so that is why I thought, I had an HTC phone before and I did not like it. So that is when I decided to take the big step and buy an iPhone. I was a big deal for me back then. Because it is an expensive purchase (5:36). It is the first time I am reflecting upon why I have this phone (5:44).*

Interviewer: *Why did you choose an iPhone instead of for example a Samsung?*

Stine: *I arrived in New York City in Grand Central station and you see the big, illuminated Apple sign and it was just a brand that was everywhere, you know. You could not avoid the brand (6:05). So I did not even think twice about it, it was just given that I should have an iPhone. Like someone chose for me, made the choice for me (6:15). But actually, if I can give an example. My husband also has an iPhone, but he hates his iPhone. But his company, Maersk have decided that all of their employees, as an employee benefit, they get iPhones. So it is just, it is not a matter of consumer choice. It is both his work and private phone. They gave him a completely new iPhone 6 when he started working there (6:54). Should he just take the new phone and throw out the old one? The company chose for him.*

Isabella: *I have not reflected about it for years, but I just remember that in 2013 I had never had a phone on which I could get on the internet. For me it was completely new, because I left Denmark in 2011 and went abroad and when I got back everyone was online and had all this technology all the time and I felt a bit alienated coming from Africa (7:42). And that is why it was new for me to get a phone. And I think maybe because I read this book, that is the reason I chose that phone. I liked the idea that you could connect the devices to a computer and it was all so new to me and I never thought about it before. I sounded so modern and smart (8:20).*

Interviewer: *Functionality, technology, but also marketing in terms of, what is available out there, that was part of you decision-making process? You felt draw to the fact that it was pretty much only Apple on the market?*

Malene: *From my point of view, it is also the habit. I started with the iPhone 3, and then the 4 and now the iPhone 5. I am used to using it and I like the functionality (9:15).*

Stine: *The switching cost are too high, you do not want to go over to another brand now, because at this point it is too late. You are an Apple user (9:20).*

Interviewer: *So it is convenience in terms of what you are used to? Are there other factors you could think of that could make you choose differently? What are your thoughts about that?*

Malene: *No, I do not think so. What I look for, mostly, is the price (9:57). If I should be true to myself. But I could be more concerned about the environment and the sustainability of the value chain of the production (10:17). It is easy for me to talk about it, but in the buying situation (10.40) it is not in my mind.*

Isabella: *I agree with you, it is very difficult. I watched a documentary about the phone industry, which included child labor etc. I am very touched but I do not know what to do (11:00). It is complicated to know where to start (11:11). If this phone breaks and I would like to buy a new phone where the supply chain and I know the different steps, this CSR is so difficult and if you go into the websites (11:40).*

Stine: It is not something they talk about themselves (the smartphone companies). If say, you go to Apple's website and they said: the new most sustainable phone on the market. Then you would instantly be interested, but because it is not there*, I do not make that reflection and connection and I am generally a consumer, who is concerned with sustainability. But funny enough, I never connected sustainability with technology devices (12:32). Maybe I have heard about it a few times and thought that would be great if there was a new company who invented a sustainable smartphone, but as a consumer I have not thought of the option that I could bring it to the table and setting demands (12:58).*

Interviewer: *You never considered looking it up yourself?*

Stine: *I would, if it was a topic that was brought up, but I am a lazy, complaisant consumer but if news came out that the iPhone was ruining the planet or violating human rights or something similar and that we are contributing to this, then I would stop and think, but because nobody asks these questions, then how am I supposed to know and there should I start? (13:39)*

Malene: *There has already been some small exposure of Apple's products and environmental rights. But sustainability, but I do not know if they use child labor? They use factories where it is not safe and also their products, they put parts in them that breaks and after two years they do not work anymore (14:41). That is also a part of my view on sustainability.*
Stine: *The lifecycle and the lifespan of a product. The buying and throw out culture (15:11).*

Malene: *Apple has been exposed for this, but funny enough people still buy their products (15:18).*

Interviewer: *I assume you have heard all of this on the news and maybe read it on websites. Information you have searched for yourself or how did you acquire this information?*
My second question is, now you know all of this about Apple, could it make you choose another smartphone in the future?

Malene: *Yeah, I think so. First of all, I have heard about it in the news and articles and also research with articles and I have thought that my next phone should be another brand. But I am also that kind of consumer that does not throw things away that works (16:10). A big part of my*

decision process is that the functionality and easy going as well as convenience with the smartphone (needs to work) and it take a long time to get to know a new system. I have thought about it a lot and decided that next time.

Stine: *In continuation of what you are saying, is that a responsible consumer and one who is concerned with sustainability would not throw away their current phone and go buy a new phone even if it was a sustainable phone because that is not a sustainable choice you make. You would make a purchase and increase consumption and pollution and so on (17:41). The responsible choice would be to stick with your current phone as long as possible, until the point where it does not work anymore and then hope that a sustainable replacement will be available on the market (18:09).*

Isabella: *There was a documentary about getting things repaired: the consumer spends, use it and throw it out. The documentary was about what if we fixed it. In my street (where I live) there is a shop where they repair phones and computers etc. I got a bit annoyed with Apple lately, because my chargers they break, both for my computer and iPhone. I am pretty sure they do it on purpose. They have a 2-year long life and then they break (19:25). But after they repaired it at the shop for approximately 200 kroner instead of buying a new one for maybe 700 kroner I started thinking it is better to get things repaired instead of giving up and buying a new phone.*

Stine: *I will admit, that I am currently considering buying a new phone, Apple smartphone and that is because I want to have a nice, new camera. My phone breaks down several times a day and I will use this as an opportunity to get a new smartphone. Now, I am being honest. I do not want the new iPhone 6, I think it is too big (20:13). I am considering that one, but the win-win situation for me, the optimal situation for me as a consumer who is really, honestly most concerned with the functionality of the product when it comes to smartphones, at least. The optimal solution for me is to have Apple, who is the market leader, to have them produce their phones in more responsible ways and to start demanding things from Apple instead of looking for a new competitor for a competing sustainable product, I would rather keep my Apple and stick with this, because the switching cost for me are too high. I am so used to this now. It is easier to stick to the same product (20:58).*

Isabella: *Social media, Facebook*

Stine: *I think it has to be a collective thing and I think it has to come from a scandal, like a burning platform. Now we really discovered the horrible situation, Apple is polluting so much and new research. It has to start with a horrible story that could open up the movement of consumers and the gathering (22:35).*

Malene: *I think that has already happened, but in small doses. But are they doing anything about it? In my point of view, it takes a regulation of the market from politicians (23:03).*

Stine: *It is built into your life (the operating system). It is not another ball, kitchen item or sofa this is something that is so built into our every day life. It is a multifunctional product. It is my alarm clock, my music device, my phone that I use for calls, my weather channel, my camera, most importantly for me. It has to be extremely bad for me to throw all of this away. There would have to be a catastrophe for Apple for me to throw away all of the things (24:33).*
Malene: *They (Apple) have become such a big part of our life, that the trading costs are very high to go to another brand (25:45).*

Isabella: *That is the tricky part; you cannot just change your photos, different apps to another phone, like Samsung or another brand. It is like a sect (26:14).*

Stine: *It is difficult to demand change, I think (26:25).*

Malene: *You buy music on iTunes and it is not possible to listen to it on an Android phone.*

Stine: *I have bought my music for the past five years on iTunes and that is several thousands of kroners on music that I now only can listen to on Apple products (26:47)*

Stine: *It is a sacrifice to switch. I would feel like I would sacrifice my daily life for the greater good (27:13)*

Isabella: *I am sure that it was their vision, from the very beginning (27:21)*

Interviewer: *I hear all three of you say that sustainable factors do play a part in your lifestyle, for example by repairing your charger, which has inspired you to think more in that direction with regards to your iPhone and electronics in general. My question to you is: can you relate this to other aspects in your life? Where you have included sustainable and environmental factors in your decision-making process? Do you take it to the active level and do something about it?*

Stine: *Yes. Food is the easiest thing, because there are so many options now in Danish supermarkets so you can make a choice and I try to minimize the amount of plastic. Wrapping is a big issue for me and try to limit that and do not use foil. It is connected to fossil fuels (28:58). I divide my trash between cardboard, plastic, metal and then the rest (29:55). I can keep on living my life; it does not take up my time and I do not have to sacrifice any convenience.*

Isabella: *Having lived abroad, I think about it a lot and I have seen how the environment has been completely destroyed. I think about it in terms of clothing for my children at least I buy most of it as second hand. They (the children) do not demand a specific brand or color, at least not yet when they are small. I switch off the light and do not let the water run for a long time. I try to pass on the information to my 3 year old as much as he can understand, for example not to throw plastic on the street. I try to pass on the information to the next generation.*

Malene: *I think about sustainability in terms of organic food and I do not throw large amounts of food out in the trash. We buy used furniture and make use of old furniture. We have recently bought a car and in the decision-making process it was very important for us that we chose an environmentally friendly car. We invite other people to go with us in the car, for example use Gomore or friends. It is not radical things, but in the small. It is not omnipresent in our lifestyle, but when we do it, it is a bit of sustainability.*

Isabella: *When I hear the media talk about it. That big accident in the clothing industry in Bangladesh and when it comes out in the media I am very much affected by it and I want to change where I buy my clothes. But then it fades away and I am not proud of it, but it shows the effect the media has, also on me. My habits are stronger than stepping out of it.*

Stine: *We are shaped by the media and by the government and of the companies, we are no better than what we are told (35:20).*

Malene: *The human being is driven by habits. Our generation is used to buy clothes from Vero Moda, H&M. the media has exposed some of the scandals, our habits are still driving us in another direction but our mind is over here.*

Interviewer: *Which leads me to my last question. You have discussed sustainable factors in your every day life and now I would like to know should you take an interest in this? Do you feel it is your responsibility? Both in terms of smartphones and also in regards with other aspects where you are trying to be socially responsible?*

Stine: *Yes, you should take an interest in this. Honestly, I do not think it is my responsibility, I feel bad saying this, but I think someone should do something about it (37:29) not on the consumer level. These are the big companies, who control what is available for us on the market, so who controls them? (37:45). I feel like it is almost a monopoly on the smartphone market even though I know there are other options than Apple. In Denmark Apple is everywhere. If you go to Asia it is more Samsung but there are not that many options available for us, who can create those options for us? (38:17). I am just waiting for a new sustainable solution to be available. If it could offer the same functionality for me and the price is acceptable of course, then I would definitely consider it (38:40). I am waiting for someone else to take action on this.*

Interviewer: *Whose responsibility is it? Who should take action? Do we trust the corporations to take responsibility and make a change?*

Malene: *The consumer's voice is not strong enough. We are strong enough to boycott Apple or the companies that are destroying the environment and the industry, but I think it is the government's responsibility to regulate the market (40:20).*

Stine: *It has to be on an international level because it is an international industry. If a government comes up with a local set of laws it won't work. We already have the conventions that Apple and*

smartphone producers already must adhere to according to global laws, but there are many loopholes (40:31). In terms of pollution and human rights it is difficult to track.

Isabella: *Someone has to push the government as well, especially in developing countries where governments are corrupt; this can easily be an issue (41:19). But that does not mean we should close our eyes and ignore it. Obviously, corruption is a huge problem.*

Stine: *Another solution could be that the government said that we allocate this amount of money to invest in R&D and then a private or public foundation could look into the research and innovate a new sustainable solution and then these smaller start-up companies could try and compete. It is an option to get a completely new product and starting demanding more from the established producers (41:52).*

Malene: *It has to start in small areas because if you say it is the whole production line and it has to be in a safe environment and avoid child labour (42:40). Since it is technology, you need to look at how and what it is made of. Maybe the smartphone can be flammable and there have also been cases where chargers start fires. Look at that area and see what they can do about that.*

Stine: *One area at a time.*

Malene: *And how much electricity does it use. Can we start in some areas and then work our way down the value chain. Because we have experienced that when the consumers criticize some parts of the finished products, they do it over. For example the iPod that broke after two years (44:10). If it is the entire production line that needs to change, it becomes too fluffy.*

Stine: *Once there is a sustainable option on the market, the consumers will come along (45:05). There is an international momentum right now for sustainable products (45:46). It will put pressure on the other actors and revolutionize the decision-making process for the consumer.*

Interviewer: *A company like the one you describe already exists. An organization from Holland called Fairphone, who have created their second smartphone, which is acknowledged as the most fair and sustainable smartphone on the market so far.*

Stine: *I would be open to it, if I felt it met my expectations and if the price is ok and if I could see the benefits, then I would consider it (buying a Fairphone next time) (48:38).*

Malene: *(in response to why the respondents have not heard about Fairphone) I think it depends on how many that buys the phone and if they get a large customer base, then they will get attention and will be able to pressure the industry.*

Stine: The*ir customers become their ambassadors. They go out in the community and show their phone (49:54).*

Isabella: *The press also has a say in this, they are such a strong voice. Unfortunately, they choose the bad stories. We do not hear about the mining industry (50:41).*

Total length of interview: 51:24 minutes.