Material Weight: The Performativity of Designed Things in the Space of Corporate Responsibility

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Doctor of Philosophy: Design
2019

Die Dissertation kann wie folgt zitiert werden:

urn:nbn:de:hbz:468-20190522-104355-2
[http://nbn-resolving.de/urn/resolver.pl?urn=urn%3Anbn%3Ade%3Ahbz%3A468-20190522-104355-2]

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I, Katrin Ilka Staudinger-Morgan, declare that this thesis is submitted in fulfilment of the requirements for the award of Doctor of Philosophy: Design, in the School of Design at the University of Technology Sydney and the School of Art and Design at the University of Wuppertal.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This thesis is the result of a research candidature conducted with the University of Technology Sydney and the University of Wuppertal as part of a collaborative doctoral degree.

This document has not been submitted for qualifications at any other academic institution.

This research is supported by the Australian Government Research Training Program.

31 March 2019

Acknowledgements

I would like to acknowledge the support of my two supervisors, Dr. Susan Stewart and Prof. Dr. Brigitte Wolf. I thank them for their help and advice over the last five years. They both have shaped this project with their feedback and encouragement.

This doctoral research was conducted under joint supervision. This comprised spending part of my candidature at the University of Technology Sydney and part of it at the University of Wuppertal. I would like to express my gratitude to both design schools for providing a supportive and collaborative work environment for me. I also would like to acknowledge my gratitude for receiving a UTS Chancellor's Research Scholarship for conducting this research. Further I would like to thank Deutsche Post DHL Group for granting me permission to display various images in this thesis.

During my candidature, I have been accompanied and supported by many people, too numerous to name. I especially would like to thank Adam for editing my thesis. Those that shared a research office with me deserve a special mention as we got to know each other quite well during this intensive time. Thank you Jenni, Mona and Barnaby.

I don't think I would have made it to the end without the support of my family and friends. I know that many of my family and friends are looking forward to the project coming to an end. This is especially the case for my son, Tom. While only being a little person, he has been very patient and understanding. Thank you Tom. I would like to thank my parents, Resi and Norbert, for always supporting me, and for being there in times of need. Finally, I would like to thank Adam. I could not have done it without your support.

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Abstract

This thesis is about designed things acting in the context of corporate responsibility (CR). It explores how designed things are mobilised by corporations to address CR issues. This research project was conducted by a designer through an interdisciplinary research project bringing together design, business and the social sciences.

Previous research has explored design in the space of CR. This work predominantly focused on the potential of design to make CR more effective. My project has a different focus. It does not advocate for design in the space of CR but, rather, is interested in how designed things participate in CR activities; it examines the different roles performed by designed things on behalf of the corporation.

The theoretical lens through which questions were framed and data interpreted in this project is Actor-Network Theory (ANT). This interpretive lens allows designed things to be recognised as actors with agency and effects. ANT concepts help to unpack how designed things shape CR activities, and how they are used to address issues of public concern. Equally, designed things operating in this space are shaped by corporate ends. They might be mobilised to smooth relations between the corporation and other actors or to mitigate risk for the corporation. This is complex territory and needs to be considered when looking at designed things acting in this space.

CR reports from Deutsche Post DHL (DPDHL), an internationally operating mail and logistics company, were used as data material. Qualitative data analysis was performed on this material using a combination of discourse analysis and visual methods. Out of this process understandings of how designed things are mobilised in the context of CR emerged. The data also revealed the corporate ends that drive CR.

Zusammenfassung

Die vorliegende Arbeit beinhaltet die Untersuchung gestalteter Dinge die im Kontext von Corporate Responsibility (CR) agieren. Es wird erforscht, wie Unternehmen gestaltete Dinge mobilisieren, um CR-Aufgaben anzugehen. Dieses Forschungsprojekt wurde von einer Designerin in einem interdisziplinären Forschungsprojekt durchgeführt, das Design, Wirtschafts- und Sozialwissenschaften zusammenführt.

Forschung, die sich mit Design im Bereich CR befasst, konzentriert sich häufig darauf, CR-Aktivitäten durch Design effektiver zu machen. Das vorliegende Projekt hat einen anderen Schwerpunkt. Es befasst sich nicht mit vorbenannter Problematik, sondern beleuchtet, wie Design CR mitgestaltet; es untersucht die verschiedenen Rollen von gestalteten Dingen, welche vom Unternehmen initiiert wurden.

Der theoretische Ansatz dieses Projektes ist Akteur-Netzwerk Theorie (ANT). Dieser Ansatz hat sowohl die Forschungsfragen, als auch die Dateninterpretation beeinflusst. In ANT werden gestaltete Dinge als Akteure mit Handlungsfähigkeit und Effekten verstanden. Dieser interpretative Ansatz ist hilfreich, um aufzuzeigen wie gestaltete Dinge innerhalb von CR-Aktivitäten agieren, und um besser zu verstehen wie sie mobilisiert werden, um Probleme von öffentlichem Interesse anzugehen. Gleichermaßen werden entworfene Dinge in CR-Aktivitäten im Interesse des Unternehmens genutzt, zum Beispiel, um die Beziehung zwischen Unternehmen und Öffentlichkeit zu verbessern. Darüberhinaus werden sie eingesetzt, um potentielle Risiken für das Unternehmen zu reduzieren. Dieses Spektrum an Einsatzmöglichkeiten macht CR zu einem komplexen Konstrukt, welches berücksichtigt werden muss, wenn man entworfenen Dinge, die in diesem Zusammenhang agieren, analysiert.

Das Datenmaterial für dieses qualitative Forschungsprojekt waren CR-Berichte von Deutsche Post DHL (DPDHL), einem international tätigen Post- und Logistikunternehmen. Dieses Datenmaterial wurde mit einer Kombination aus Diskursanalyse und visuellen Methoden analysiert. Das Resultat dieser Analyse sind Erkenntnisse darüber, wie gestaltete Dinge im Kontext von CR mobilisiert werden. Ein weiteres Ergebnis dieser Analyse ist, dass die Unternehmensziele den Umgang mit CR mitformen.

1.
Introduction

Chapter 1
Introduction

This thesis is about design in the context of corporate responsibility (CR). Its purpose is to better understand the roles played by designed things in the space of CR. More specifically, it is interested in how corporations address CR through designed things and how designed things facilitate CR. These topics are explored through an interdisciplinary research project undertaken by a designer. The materials and methods used in this project have been drawn from design, business and the social sciences.

CR is an appropriate and relevant focus for design research, as design is active in this space. Design is mobilised by corporations in the service of CR. Practical examples of designed things that act in the space of CR can be found when glancing through CR portfolios of corporations, CR reports and other modes of corporate communication. They all report on designed things that act in this space. These designed things participate in and enable corporate action that is claimed 'responsible,' and therefore 'ethical,' by the corporation. However, claims made for the ethical status of CR activities are controversial. Despite their claimed good intentions, CR initiatives are often criticised (Banerjee, 2008; Dobers & Springett, 2010; Hennig, 2015). It may be perceived that the CR initiative is an attempt to 'greenwash' the corporation's image, or to distract from other more problematic issues within their business practice.

Design researchers have been wary of this territory, observing that design contributes to the unfolding of corporate power by working in its service (Crocker, 2014; Von Busch & Palmas, 2016). Rather than avoiding this contested space, this research project sets out to attain a better understanding of what designed things are doing in the space of CR.

1.1 Theoretical Approach Used

This project started with an interest in bringing together design, CR, and Actor-Network Theory (ANT). ANT originated in the social sciences and there is a large body of work within those disciplines that uses ANT to analyse and interpret human and nonhuman actors in larger social contexts (Michael, 2012a; Latour & Weibel, 2005). Influential in the choice of theoretical lens was the work by Michael (2000a, 2000b, 2012a, 2012b), Yaneva (2009), and Nimmo (2010, 2011). These authors provide interesting examples of how an interpretation of designed things through ANT can reveal new ways of understanding how designed things act within wider social contexts. While there is an extensive scholarship, following Callon, that uses concepts from ANT to interrogate different economic contexts (Callon, 1998a; MacKenzie et al. 2007), little work was found that translates ANT to the space of CR.

CR is concerned with the mitigation of issues. Corporations are powerful actors that participate in negotiating how issues are addressed and approached. ANT, in particular work from 2005 and onwards (Latour & Weibel, 2005; Marres, 2005), is interested in political issues and how they are shaped by various actors. ANT provides descriptive and interpretative concepts that enable one to explore how issues are understood and approached, and how change can be initiated or prevented by powerful actors.

My interpretation of the roles played by designed things in the space of CR has been guided by Actor-Network Theory (ANT). ANT offers an interpretative lens for better understanding the roles of human and nonhuman actors within actor-networks. ANT provides interesting concepts in order to understand what designed things are doing in the space of CR, how they act in concert with other actors, and how these actions generate effects. Actor-network theorists argue that humans and nonhumans have equal participation in performances that generate effects. As such, they both have agency in the world (Latour, 1987, 1992, 1999; Callon, 2007). The emphasis on the role of nonhumans is important for those interested in the roles played by designed things. The participation of nonhuman actors in human concerns has previously been overlooked or taken for granted; to the point where they become effectively invisible (Michael, 2012a). Objects, interfaces and processes have been seen merely as tools without being grasped for the performative force they have in shaping situations, practices and habits. Actor-network theorists address this neglect of the roles played by nonhumans.

This project contributes to a body of work that is interested in designed things as part of actor-networks that generate performative effects (e.g., Nimmo, 2011; Shiga, 2007; Molotch & Noah, 2008, Yaneva, 2009). The focus on how designed things act in wider social contexts is an important one for designers. This territory has become far more richly theorised over recent decades. Literature drawing on ANT concepts to interpret the agency of designed things provided important guidance on how ANT concepts might inform a discussion about designed things acting in the space of CR. Reviewing this body of work was important to frame and position my project. This literature can be divided into two fields: 1) literature on design research or interdisciplinary design research (e.g., DiSalvo et al., 2011; Ward & Wilkie, 2008; Wilkie & Michael, forthcoming), and 2) literature from the social sciences (e.g., Nimmo, 2011; Shiga, 2007; Molotch & Noah, 2008). Both groups understand designed things as participating in actor-networks that generate effects, and are interested in the combined agency, or co-agency, that is exercised through these actor-networks.

ANT is particularly appropriate to design research, as it draws no distinction between human and nonhuman actors when exploring an issue. Nonhuman actors are given equal attention in the study of actor-networks. Here, attention is directed towards actions performed by the different actors and the effects these actions have. Actors within actor-networks are further explored through their relationships to other actors.

Some design scholars suggest that engaging with ANT concepts can be helpful within the design process (e.g., DiSalvo et al., 2011; Ward & Wilkie, 2008; Wilkie & Michael, forthcoming). ANT concepts are mobilised to a) research an issue, b) to describe it, and c) to design for it. Ward and Wilkie (2008) suggest that engaging with ANT concepts during the design process raises “awareness of the designer’s ability to intervene and interfere” (p. 4) and the way in which designers shape society through “materialized refiguration” (Haraway, 1994, p. 5, cited in Ward & Wilkie, 2008, p. 5). Similar to Ward and Wilkie (2008), DiSalvo et al. (2011) suggest that an engagement with ANT concepts during the different stages of a participatory design process can generate insights that help designers to better understand the complexities of the issues they are designing for.

Other design scholars draw on ANT concepts to create rich descriptions of how designed things shape human perceptions and experiences (Tonkinwise & Lorber Kasunic, 2006; Stewart, 2015; Yaneva, 2009, 2012; Yaneva & Zaera-Polo, 2015; DiSalvo, 2014). They conceptualise, often retrospectively, existing designed things as actors with agency within complex assemblages. Often, these authors study micro actor-networks with a focus on those designed things that shape the social dimensions of everyday practices. They explore the scripts for action suggested by designed things and how these scripts shape a “grammar of action” (Yaneva, 2009, p. 278).

Exploring the roles of design in the context of CR, its performative dimension, its intended and unintended effects, its rhetorical and political power, sheds light on what Tonkinwise (2017) calls “The Magic that is Design” (p. 1) or what Stephan (2015) refers to as “design voodoo” (p. 216). These are witty terms that attempt to capture design’s performative dimension. Studying concrete examples of how design acts in the space of CR starts to reveal some of the characteristics of design that one might perceive as magic or voodoo. These characteristics point to the agency of design and its material weight within performative actor-networks. Bennett (2004) introduces the term ‘thing-power,’ which she defines as “the curious ability of inanimate things to animate, to act, to produce effects dramatic and subtle” (p. 351). She notes that “a material body always resides within some assemblage or other, and its thing-power is a function of that grouping” (pp. 353-354). This research pursues a similar direction to that undertaken by Bennett. It aims to raise awareness of how designed things are part of actor-networks that generate effects and have agency in the space of CR.

1.2 Methods Used

The access point chosen to understand how design is acting in the space of CR are CR reports. They provide documented evidence of how corporations approach CR, and of the designed things mobilised in this space. They also provide insights into CR programs and activities over time. They are an established and legitimate data source used in existing research (Nielsen & Thomsen, 2007; Shabana et al., 2016; Ziek, 2009). This makes them a valuable data source for this project.

CR reports are designed things themselves. Their agency is complex. They are rhetorical and they contain claims of various kinds. In CR reports, designed things are portrayed as straightforward and simple actors in service of corporate responsibility agendas. Text, images and visual elements, such as graphs, tables and diagrams, are mobilised to tell these straightforward stories. Following Nimmo's (2010, 2011) interpretation of modes of documented communication, it is argued that a detailed analysis of CR reports reveals more than the obvious claims that are foregrounded in these representations. This project reveals insights into the functional and rhetorical roles that designed things perform in the context of CR. These insights go beyond the stories told in the CR reports.

The CR reports selected for this study are from a single case study corporation, Deutsche Post DHL (DPDHL). I decided to focus on a single corporation as it offered a number of advantages. First, it enabled me to study the CR portfolio within which these designed things were operating in detail. I was able to get a detailed overview of the spectrum of CR activities in place by this single corporation, and how examples of designed things are positioned within these activities. It also enabled me to study the designed things over a longer time period, where shifts over time could be noticed. As the designed things were all acting within the same corporate setting, I was able to compare their actions and effects within the one organisational context. The decision to focus on a set of examples from one corporation was also informed by Flyvbjerg (2001, 2006). He refers to "the power of the good example" when discussing the strengths of in-depth case study research (2001, p. 77). For Flyvbjerg, this kind of research generates "concrete, practical, and context-dependent knowledge" (2001, p. 70).

Nine CR reports produced by DPDHL were analysed, covering the years 2008 to 2015. Combined, 1401 pages of CR reports were analysed. The CR reports selected provided insights into the kinds of designed things operating within DPDHL's CR activities. They also provided information on how these designed things were mobilised in this space.

Mixed methods were used to analyse and interpret these nine CR reports. In the first place, qualitative methods for developing themes out of the data were informed by discourse analysis. Discourse analysis was identified as a suitable method for this project, as it enables inclusion of both text and visual material in qualitative data analysis (Kress, 2012; Rose, 2012). It was also fitting for my rather open and broad research questions, which are introduced below. Discourse analysis is exploratory in nature allowing different iterations of data analysis, with different takes on coding and interpreting the data as the research evolves (Rose, 2012, p. 215). Discourse analysis has been used alongside ANT by other scholars, and these two approaches are recognised as appropriate to each other (Nimmo, 2010, 2011).

ANT, as the theoretical lens used for this research, guided how examples and methods for the research were selected. Law (2009) suggests that ANT provides "material-semiotic tools, sensibilities and methods of analysis" (p. 141) to unpack assemblies of human and nonhuman actors that act in concert. He argues that these tools, sensibilities and methods help to make some of the agencies of the material/nonhuman more visible. ANT concepts enable the exploration of "material-semiotic relationality" (p. 146). In doing so, they pay attention to the roles of nonhuman actors within actor-networks.

In addition to discourse analysis, visual design methods were used to analyse and interpret the representations and information contained in the CR reports. Some approaches employed visual forms of content analysis. Others were more experimental, drawing on the themes that emerged from the qualitative data analysis. Together, these ways of interrogating the data material offered new and interesting ways of interpreting how designed things are acting in the space of CR.

Taken together, the approach to the data analysis is synthetic. Iterative analysis was undertaken in four distinct phases. Each phase generated a different set of understandings, and is presented in a separate chapter. The first phase generated initial findings that helped to orient and direct the research. The second phase identified some of the corporate ends that drive an engagement with CR and how designed things are mobilised to achieve these ends. The third phase explored the different roles of CR reporting. The fourth phase produced the core findings. It generated understandings of what designed things are doing in the space of CR.

1.3 Aim and Research Questions

The aim of this research project is to contribute to a better understanding of how designed things act in the space of corporate responsibility (CR). The research is guided by the following research question:

Q1. What are designed things doing in the space of CR?

This thesis uses visual methods to assist in the interpretation of how designed things act in the space of CR. As a designer approaching this interdisciplinary research topic, two additional questions emerged:

Q2. As a designer, what can I reveal about what design is doing in the space of CR?

Q3. How are visual methods useful to address Q1?

As mentioned above, this research project has been conducted by a designer and has two research questions related to this. I was trained as a designer with a focus in branding and typography. My visual style is one of simplicity and clarity. Through this research project, I became more aware that a clear and simple design needs to remove layers of complexity. This is not only true for the visual language found in CR reporting, it also applies to my own practice. Translating something complex into a clear and simple form is only achieved by reduction, by taking away details – to make other details appear. My training as a designer influences how projects are approached and my way of working. This project is no different. It offered an opportunity to reflect on my particular way of working.

1.4 Chapter Overview

The structure of this thesis is provided below. As an overview there are ten chapters. The first four chapters provide the background to the research I undertook. Chapters 5 to 8 report on the four phases of data analysis I conducted. Broader discussions are provided in Chapters 9 and 10, which bring together the understandings that emerged from this project.

Chapter 2 examines literature on two topics that inform this thesis: Corporate Responsibility (CR), and designed things in the context of CR. In each case, understandings are drawn from the literature that will inform this thesis as a whole.

Chapter 3 introduces Actor-Network Theory as the theoretical lens used to interpret what designed things are doing in the context of CR. It outlines specific ANT concepts that have been mobilised to interpret how designed things participate in actor-networks, or performative associations that have agency and generate effects. The ANT concepts introduced in this chapter are: agency, performativity, performative association, script, translation, mediator and intermediary, and black boxing.

Chapter 4 introduces the case study corporation selected for this research. It then takes a closer look at CR reports as data material. From there, it introduces the approaches used to analyse the CR reports, which are discourse analysis and visual methods. This chapter gives an overview of the data sources and approaches taken in this thesis. It frames the research conducted and gives a rationale for the approaches chosen. The chapter closes with an outline of the four phases of data analysis undertaken. These four phases, including the specific methods and procedures of data analysis employed in each phase, are described in detail in Chapters 5, 6, 7 and 8.

The first phase of data analysis is presented in Chapter 5. It outlines my initial engagement with the CR reports and the understandings that arrived from this engagement. Chapter 5 also presents some general observations on the CR reports and the content within these reports.

Chapter 6 presents understandings emerging from my second phase of engagement with the CR reports. In this chapter, the focus was DPDHL's reasons for engaging with CR. My engagement with the literature on design and CR pointed to different ends for why corporations invest in CR. This observation prompted me to raise the question: What are the ends that drive CR? This chapter seeks to provide an answer to this question. It also discusses how designed things are mobilised to achieve these ends.

Chapter 7 presents understandings emerging from my third phase of engagement with the CR reports. When discussing the ends for why corporations engage with CR in Chapter 6, it was found that designed things play different roles, they are mobilised in different ways. This raised the question: What kind of roles are performed by the CR reports themselves? This chapter explores this question.

Chapter 8 covers my fourth and final phase of engagement with the CR reports. This phase focuses on four designed things that play a role in achieving CR goals and appear in the CR reports. This phase engaged with the data in more detail to provide a deeper understanding of how designed things operate in the space of CR. This chapter has three sections, the first of which provides an overview of the phase. The second section presents the understandings that were generated in this analysis. These understandings are discussed in the final section of this chapter.

Chapters 5 to 8 analysed and interpreted designed things in the space of CR. Each of these chapters offered different understandings of what designed things are doing in the space of CR. In Chapter 9, understandings that emerged from the four research phases undertaken are further developed by drawing explicitly on concepts from ANT.

Chapter 10 is the final chapter of the thesis. It provides answers to the research questions associated with my project. It comments on the data sources and approaches used throughout the project. It discusses the strengths and limitations of the research conducted and potential future research directions. The contribution to knowledge this project makes is then given, followed by a concluding comment.

2.
On Corporate Responsibility and Design

Chapter 2
On Corporate Responsibility and Design

> "The great divide between economics and politics, economy and society is revealed as the partial and provisional outcome of a long historical project of separation. More concisely, politics and economies are not so much separate as they are made separate" (Cochoy et al., 2010, p. 141).

This chapter examines literature on two topics that inform this thesis: Corporate Responsibility (CR), and designed things in the context of CR. In each case, understandings are drawn from the literature that will inform this thesis as a whole.

2.1 On Acting Responsibly as a Corporation

This first section concerns the central concept in this research project: Corporate Responsibility (CR). CR is a broad term used for activities initiated by corporations that are claimed to be positive for society. The term CR is one of many to describe this kind of corporate activity. Other terms are, for example, "Corporate Social Responsibility" (CSR) or "Corporate Citizenship." Corporate Responsibility (CR), rather than Corporate Social Responsibility (CSR), has been chosen for use in this thesis, as it emphasises a more holistic understanding of a corporation's responsibilities, comprising the social, the environmental, and the economic dimensions. The term CR does not foreground the social as CSR does, but makes the social equal with the other dimensions. CR is also the term used by the case study corporation, and thus adds consistency to the language used in this project.

There are many definitions of CR provided in corporate management literature. A review of this material by Dahlsrud (2008) identified five dimensions of CR that are present in most definitions: the stakeholder dimension (present in 88% of definitions analysed), the social dimension (present in 88% of definitions analysed), the economic dimension (present in 86% of definitions analysed), the voluntariness dimension (present in 80% of definitions analysed), and the environmental dimension (present in 59% of definitions analysed). An example of an often-referred-to definition of CR, one which contains all five themes, is from the Commission of the European Communities published in 2001. It describes CR as: "A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (cited in Dahlsrud, 2008, p. 7).

In general, corporations set their own CR agendas, including decisions on the breadth of their CR portfolio, levels of intensity and involvement, and monetary contribution. Particular CR initiatives may be adopted for altruistic or strategic reasons (Lampikoski et al., 2014). Strategic reasons may include a repositioning of the corporation in relation to future resources or markets, to manage brand reputation, or as a form of risk management.

Despite their claimed good intentions, CR initiatives are often criticised (Banerjee, 2008; Dobers & Springett, 2010; Hennig, 2015; Crocker, 2014). It is often perceived that the CR initiative is an attempt to 'greenwash' the corporation's image, or to distract from other more problematic issues within their business practice. Efforts and improvements made by the corporation are perceived to be too incremental compared to the damage done at other ends, or it is perceived that initiatives are pursued for the wrong reasons, such as image rather than effect (Porter & Kramer, 2002[1]). In most criticism is an underlying scepticism that social or environmental interests can sit alongside economic forces, interests and pressures. Banerjee (2008), for example, is sceptical about the fundamental idea behind CR and questions the extent to which corporations are capable of supporting social agendas. He argues that "corporations do not have the ability

1 Porter and Kramer (2002) report: "Tobacco giant Philip Morris, for example, spend $75 million on its charitable contributions in 1999 and then launched a $100 million advertising campaign to publicize them. Not surprisingly, there are genuine doubts about whether such approaches actually work or just breed public cynicism about company motives" (p. 57).

to take over the role of governments in contributing to social welfare simply because their basic function (the rhetoric of triple bottom line aside) is inherently driven by economic needs" (Banerjee, 2008, p. 74). While being sceptical of CR, Banerjee does emphasise that corporate engagement with social and ecological issues has the potential to influence corporate actions for the better.

Criticism towards CR is also raised from a different angle. Some argue that CR is irrelevant or counter-productive to the core business interests of the company. Expenses, time and effort related to CR activities must be justified to management and shareholders as returns on investments are closely observed. In neo-liberal economies, in which everything is measured and evaluated to identify its effectiveness, CR activities are equally subject to scrutiny. Often, CR initiatives are seen as gestures that are necessary to operate the daily business. Porter and Kramer (2011) explain: "Corporate responsibility programs—a reaction to external pressure—have emerged largely to improve firms' reputations and are treated as a necessary expense. Anything more is seen by many as an irresponsible use of shareholders' money" (p. 65). As a response, Porter and Kramer (2002, 2006, 2011) suggest that CR should be positioned not as a philanthropic endeavour, but as a strategic positioning. They term this reframing of CR as 'shared value,' which they also refer to as 'strategic CSR' or 'investments in context.' Shared value is described as "creating economic value in a way that also creates value for society by addressing its needs and challenges" (Porter & Kramer, 2011, p. 64). Importantly, they see shared value as an opportunity for corporations and the public to negotiate conflicts and tensions (Porter & Kramer, 2006, p. 92). Other advocates make similar suggestions (Mackey & Sisodia, 2013).

Despite many voices in the literature advocating for CR as a strategic tool, this approach has not yet been established as a common business practice: "The most common corporate response has been neither strategic nor operational, but cosmetic: public relations and media campaigns, the centrepieces of which are often glossy CSR reports, that showcase companies' social and environmental good deeds" (Porter & Kramer, 2006, p. 81). Porter explains elsewhere that, despite most companies having an extended CR agenda, the positive impact of CR remains largely invisible[2].

CR in Germany

The case study corporation selected for this thesis is an internationally operating German company. Given this, attitudes to CR in Germany are important to mention. Fifka and Reiser (2015) describe CR as a fairly recent topic in Germany; not only for corporations, but also for the government and the public. In the past, CR was not seen as urgent because Germany is a social market economy. Government, employers and unions together are seen to build the "foundation for socio-economic decisions made on the political level" (Fifka & Reiser, 2015, p. 126). Here, the German government has a commitment to regulate corporate actions to ensure certain levels of corporate responsibility. Corporations fulfil their social responsibility partly through monetary contributions, such as social security payments and taxes. In general, German corporations perceive that taxes, welfare contributions and provision of employment fulfil a large part of their responsibility to society (Fifka & Reiser, 2015, p. 129). The most important stakeholder group for German corporations is their employees, which means that corporate responsibility is to be found predominantly within the corporate boundaries and directed towards employees. Having said that, most social responsibility initiatives benefitting employees are put in place by the German legal system. German corporations do not have much choice. To 'care' for employees is not really understood as a voluntary gesture, but as a legal requirement. Social issues are largely managed by the German government.

Fifka and Reiser (2015) suggest that a rethinking and reframing of CR, and its potentially shared benefits, are necessary in order to develop it beyond its current position in Germany. Involvement from government and civil society is seen as indispensable here, but a willingness by corporations to proactively engage is also necessary for CR to become a

2 See Michael Porter's talk on Shared Value, http://www.youtube.com/watch?v=z2oS3zk8VA4, last viewed 27 January 2018.

respected participant in action to address matters of concern. However, Fifka and Reiser (2015) note that corporations express reservations about reporting on CR activities, and that only 7% of corporations engage in cause-related marketing. They suggest that a possible reason for why corporations hold back on active promotion of their CR activities could be that they are afraid of being accused of being motivated by financial gain or reputational benefits. But it seems that corporations are gradually discovering advantages in communicating CR activities. Corporations have started to notice rising customer expectations that CR will be taken more seriously, and are motivated to exceed governmental regulations. Reframing CR in Germany seems to be encouraged through recent German government initiatives, a trend that Fifka and Reiser (2015) describe as being nearly absent during 20th century Germany. Examples are the National Action Plan from the Federal Ministry of Labour and Social Affairs (2010) or initiatives on the website *CSR Made in Germany*[3]. While noticing these developments, Fifka and Reiser (2015) describe the current approach towards CR as defensive rather than proactive, where CR is mainly performed to match expectations, rather than exceed them.

On Corporations

The broader economic context of modern corporations also needs to be considered, to get a better understanding of where CR sits. Some of the characteristics and conditions of a corporation in the 21st century are introduced below in order to point out the complexity of CR's entanglements within wider economic systems. The growth of a globalised market economy, and the dominance of neo-liberal economic systems, has led to an increase in corporate power, and in the capacity of corporations to influence decision-making on matters of public concern (Beck, 2006a). Banerjee (2008) notes that transnational corporations often hold more power and influence in decision-making concerning issues of public interest than governments do. He argues that in neo-liberal economies, governments tend to favour the interests of corporations ahead of interest groups in society. Governments, who are meant to act on behalf of the public, argue that by serving powerful

3 www.csr-in-deutschland.de, last viewed 27 January 2018.

market actors, they will indirectly benefit society by creating wealth and jobs. Nationwide rules and regulations are often insufficient to govern activities of internationally operating corporations within a state, because the corporation can threaten to go elsewhere unless it is given special privileges. Beck (2006a) describes the "exit option" (Hirschman, 1970) of global businesses as key to why they are seen as powerful actors (p. 53). Multinational corporations are powerful because they are perceived as necessary players. The corporation's threat to 'opt out' is perceived as actionable due to the number of other states willing to offer generous terms in order to secure at least some benefits from the corporation's activities. As a result, corporations can choose the kinds of projects, people and places they invest in. As Beck (2006a) writes: "There is only one thing worse than being overrun by multinationals, and that is not being overrun by multinationals" (p. 52).

A more and more globalised world economy contributes to creating what Latour (2013) describes as "monsters of organizations" (p. 49). Corporations, in particular multinational corporations, have grown enormously in size and influence because of an increasingly globalised and networked economy. Powers (2005) describes corporations as unknown entities, entangled in complex assemblages which are hard to grasp. He frames the corporation as a complex actor-network contributing to larger systems of actor-networks. For Latour (2005a), we are all "willingly or unwillingly, connected by the very expansion of those makeshift assemblies we call markets, technologies, science, ecological crises, wars and terrorist networks" (p. 37). Economic, ecological and social developments of small and large size are shaped by globalisation. Castells (2008) writes: "Not everything or everyone is globalized, but the global networks that structure the planet affect everything and everyone" (p. 81).

For Beck (2006a), globalisation creates systems of 'organised irresponsibility.' If no one is responsible, who then, is responsible for addressing it? And how can cause and effect be proven in complex systems, such as eco-systems impacted by industrialisation (e.g., global warming)? At the same time, Beck holds that "global risk has the power to tear away the facades of organized irresponsibility" (2006b, p. 339), because at a certain level of threat, economic practices that create or exacerbate issues of public concern are reassessed and acted on; or a catastrophe (defined by Beck, 2006b, as a risk that has eventuated) destroys an established system and allows space for things to be reassembled differently.

An often raised point is that most of the social and environmental problems society is facing are perceived to be made by society (for example, global warming, obesity, pollution, resource shortages, unemployment etc.). Another point is that corporations are perceived to play a major role in creating these problems. As Beck (2006a) argues: "Hazards associated with industrialisation do not become a political issue because of their scale but because of a social feature: they do not assail us like a fate; rather we create them ourselves, they are a product of human hands and minds, of the link between technical knowledge and the economic utility calculus" (p. 25). Czarniawska (2013) makes a similar point: "The environment is not a preexisting set of problems to which an organism, or an organization, must find solutions: these organisms or organizations created the problems in the first place" (p. 5). Beck (2006b) reasons elsewhere: "Modern society has become a risk society in the sense that it is increasingly occupied with debating, preventing and managing risks that it itself has produced" (p. 332)[4].

Corporations are powerful actors in networks that negotiate public issues (Castells, 2008; Maak, 2009; Senkel, 2014; Venturini, 2012). They should therefore not be overlooked by those who seek to bring about change. As Venturini (2012) explains: "Actors occupying influential positions deserve special attention because, like it or not, they will have better chances to shape controversies. To describe climate change negotiations, it is important to relate not only the viewpoint of national leaders, but also that of the most influential NGO's and transnational corporations. Without the support of these actors, any agreement over global warming would have only the slightest chance of succeeding" (p. 798).

4 Beckert (2014) discusses capitalism in relation to uncertain futures and the concept of risk. He describes personal and self-inflicted risk as a recent phenomenon that is related to risk-taking financial decisions that corporations and private people take in order to pursue financial gain.

Senkel (2014) suggests that corporations actively pursue political involvement by participating in dialogue on social and environmental issues. Large multinational corporations, in particular, are seen as having the power to encourage or prevent changes around economic practices that impact issues of concern. Corporations are able to encourage change or to hold onto existing systems of economic practice. Beck (2006a) points to a counter-power that society can exert by consumers deciding to not purchase, in other words, to boycott by withdrawing its spending capacity. A similar argument has been made by Tonkinwise (2012). However, this argument only holds when the corporation has some kind of business-to-consumer (B2C) contact. Many corporations act predominantly in the space of business-to-business (B2B) and their actions remain largely invisible to the public. Further, refusal to consume a corporate product is only possible where social practices have not been structured around assumed consumption of that product, or where an ethical competitor provides an alternative product.

Taken together, the economic landscape, globalisation, and the growing power of corporations make CR a complex topic. They also show that it is important to engage with corporate accountability and responsibility (Fifka & Reiser, 2015). If not carefully watched, corporate action will continue to grow systems of organised irresponsibility (Beck, 2006a).

The concepts of externalities, framing and overflowing to explain CR

The limits to corporate responsibility are negotiated through the economic concepts of externalities, framing and overflowing, as discussed by Callon (1998, 2005). Externalities are effects in the outside world initiated through the actions of a corporation. For example, a production site may release toxic emissions that affect the air quality of the surrounding suburbs. Such impacts that exceed the identified corporate frame of responsibility are termed 'overflows.'

Corporations are not necessarily aware of their externalities until they are pointed out to them (Callon, 1998[5]). Unintentional externalities occur where the corporation affects someone or something in ways that were not anticipated or intended. Effects that seem insignificant at one time may, in time, prove to be significant liabilities. The corporation, then, may be compelled to redraw its frame of responsibility in order to address its responsibilities. Callon (2009) argues that global warming is "a perfect illustration of the damage that negative externalities can cause when they are produced on a large scale without the effects being felt immediately" (p. 536). Callon elaborates: "Global warming in its current state is an issue that is unqualifiable, not in theory but in practice, for no framing is able to embrace it in its entirety. As the roots of the word indicate, an issue always finds an exit enabling it to overflow. It is protean, constantly changing as it spreads, irrespective of the frame into which we try to fit and enclose it" (p. 542).

Overflowing is the term used when matters 'flow over' the frame or boundary of corporate responsibility and affect others. When matters overflow, a concerned public may put pressure on the corporation to extend its boundaries to include responsibility for these matters. However, in the absence of public pressure, the corporation may choose to ignore the overflows and keep them as externalities (Callon, 1998). Gowri (2004) suggests the term 'moral externalities' to give specific recognition to overflowings that have consequences for the public good. He points to the difficulty the corporation may have in determining, framing, and addressing moral externalities because effects and consequences might be well outside the corporation's acknowledged frame of responsibility. Negative effects are not determined by the difference between responsible and irresponsible business practices. This is because negative effects might only become visible when grasping the product or service in a much larger social, temporal or ecological context. The examples discussed by Gowri to explain why moral responsibility is difficult to determine are everyday service offerings, such as children's TV (and the negative effects when children watch too much TV), insurance

5 Callon (1998) points out that externalities cannot only be negative or undesirable, but can also have positive side effects.

(and the exclusion of high risk customers) and cars (and the negative environmental and urban effects through growing numbers of cars). By considering the wide ranging negative effects of these products and services, the difficulties in determining corporate moral responsibilities is evidenced (Gowri, 2004).

The process of determining what is understood to sit within the frame of corporate responsibility, and what is outside, is called 'framing' (Callon, 1998). The CR agenda of a company, in many cases, is a reframing to incorporate additional areas of responsibility; over and above those legislated or otherwise previously required of, or acknowledged by, the corporation. In distinguishing these additional areas of corporate responsibility, the corporation makes a distinction between the responsibilities they are required to assume by legislation, and those they choose to assume.

Reframing to include aspects of a corporation's externalities in their CR agenda needs to be distinguished from CR initiatives that are framed as 'gifts' that assist in the amelioration of issues that the corporation sees itself as completely independent of, and in no way responsible for. An example of such a gift can be to financially support a charity for disadvantaged children. While charitable giving may help the corporation to build a positive brand identity, often acting to offset or distract from negative corporate externalities, the gift does not shift corporate practices to address or reduce the negative externalities of their business operations.

Callon (1998) emphasises that externalities, framing and overflowing are unavoidable elements of markets. In this context, he describes corporations as embedded in a "network of interdependencies" (p. 252). He points to two different approaches in relation to understanding and representing framing and overflowing. The first approach assumes that "framing is the norm and overflows are the leaks" (p. 250). In this first approach, a constant framing and reframing makes an effort to keep overflows to a minimum. The frame is adjusted to account for undesirable externalities. The second approach assumes that "overflows are the norm: framing is expensive and always imperfect" (p. 252). In this second approach, overflows are expected and no attempt is made to minimise them in advance. Rather, the corporation will react to problems as they arise, and only insofar as reaction is made necessary. Reframing to incorporate responsibility for a previously excluded effect of the corporation's activity will only be considered when such incorporation has become unavoidable.

CR can be understood as an attempt to minimise or to respond to overflowings. Proactive and well-intended CR initiatives can be identified with the first approach outlined by Callon, where framing is the norm and overflowing is the accident. Reactive and defensive CR initiatives can be identified with the second approach, where overflowing is the norm and framing is the reaction to outside pressure. While Callon (1998) has not made a connection between the two approaches to overflows and CR explicit, his discussion of externalities, framing, and overflowing, considered in relation to matters of public concern, clearly points to the place and role of CR. Reframing of the limits of corporate responsibility can be understood as a reaction to public expectations. This is where seeds can be planted or re-planted that can have an effect on re-thinking the space of corporate responsibility. This is what makes CR, its responses and its tensions, an important focus.

Miller (1998) argues that a discipline is shaped by what is happening at its boundaries; that is, where the interesting things are happening, where a discipline is re-defined. Writing in the same tradition, Law (2009), referring to Michael Serres, notes: "The most interesting places lie on the boundaries between order and disorder, or where different orders rub against one another" (p. 144). There is clear agreement among corporations as to their central responsibilities. Equally, there are shared understandings as to what lies outside their responsibilities. The interesting discussions occur where boundaries of responsibility are blurry and where certain effects of corporate activity may be pushed inside or outside of corporate responsibility. Reframing corporate responsibilities means asking: What is in and what is out? How is that determined? What should be considered in making those decisions? What are possible responses to redefined frames of responsibility?

Corporate responsibility as managing visibility

Castells's (2008) concept of 'the new public sphere' is useful in considering why corporations include CR initiatives into their business agenda in the context of globalisation. Building on Habermas's (1989) concept of the 'public sphere,' Castells understands the new public sphere as operating globally rather than within a nation-space. He describes the new public sphere as a space of communication, where global civil society, global non-state actors (e.g., corporations) and network states (e.g., in the form of governments) raise questions and concerns in an attempt to inspirit the political community with a desire to address or resolve these issues, sufficient to commit the resources required. All parties involved (global civil society, global non-state actors and network states) have the ability to shape discussions in the new public sphere[6] (Castells, 2008). A proactive CR agenda can be understood as an attempt to shape and control discussion of an issue for which the corporation may be held responsible in the new public sphere. A reactive CR agenda can be seen as a corporate response to issues already raised in the public sphere, that the corporation was identified with. Despite the moral ambiguities that surround CR (Banerjee, 2008), its existence indicates that corporate bodies recognise the need to engage with concerned representatives of issues in the new public sphere.

Thompson (2005) discusses a new kind of visibility in today's world, which has arisen through new forms of technology and media that enable the sharing of information via the web. He explains that this visibility brings about "a new and distinctive kind of *fragility*" (p. 42, italic in original). This new visibility means that public actors are constantly judged by what they do, or what others reveal about them. Thompson introduces the term 'mediated visibility' to point out the necessity of managing visibility when acting as a public person or institution. According to Thompson, it is important to manage how others view public actors. However, what is revealed about public actors, is to a large extent, out of their control. The corporation is an actor that

6 When engaging with Castells's (2008) distinction between actors, their different primary drivers should be considered, which are economic, political, social or environmental.

primarily represents private interests. However, the negative externalities of corporate action are a matter for public concern and are debated in the public sphere. Once information compromising perceptions of the individual or the corporation has been made public, damage control is the most common response. For example, in the case of toxic overflows from corporate activity, the corporation may pledge a reframing of its responsibilities to address future overflows, while emphasising the merit of past and current actions taken. As participation in the new public sphere grows through new media, active engagement of corporate visibility becomes more necessary for the corporation.

The new visibility creates an expectation that corporations articulate their ethical position towards issues of public concern, and demonstrate willingness to action this position through their CR strategy. Porter and Kramer (2006) see this development from a corporate perspective: "Activist organisations of all kinds, both on the right and the left, have grown much more aggressive and effective in bringing public pressure to bear on corporations. Activists may target the most visible or successful companies merely to draw attention to an issue, even if those corporations actually have had little impact on the problem at hand" (p. 80). The position articulated by Porter and Kramer reflects the pressure that is being brought to bear on corporations by activity in the new public sphere.

Taken together, the new public sphere offers new modes of making actions and positions towards matters of concern visible. It opens up new possibilities for making things public. Concerned actors can demand or generate visibility in relation to particular issues. Design plays an important role for all parties to these debates, as it contributes to making issues visible, and it enables action in relation to those issues.

Public concerns shape corporate responsibility

Concerns develop out of, and contribute to, historical narratives about how we are positioned and what matters to us. As Latour (2005) suggests: "We might be more connected to each other by our worries, our matters of concern, the issues we care for, than by any other set of values, opinions, attitudes or principles" (p.14). Concerns that have a history are (re-)identified or (re-)confirmed as matters of concern at different times and in different contexts. A concern for functioning community structures has been around for a very long time; although understandings of what should be aimed at have shifted over time. Concern for the environment and the vulnerability of natural systems is a concern that has emerged since industrialisation. This might be seen as of fairly recent date, compared to functioning community structures, but actually represents a new articulation of older narratives about the relationship between humans and nature.

Callon (2005) argues that the articulation of a concern is the starting point for action towards change. A concerned group must form for an issue to be addressed. The concerned group must identify both the effects of the issue and the groups affected, in order to make a case for why the issue should be addressed. To do so, they must recruit sufficient support to give the concern weight in public forums. Carbon emissions and global warming is no exception. Concerned groups have had to make an argument that the effects generated by carbon emissions represent significant negative externalities and need to be taken seriously by other actors.

If a concern is made measurable and tangible, then concerned groups can make a stronger case for this particular concern to be taken seriously (Callon, 2005). Callon argues that "matters of concern exist only if the concerned groups create them as such by making them visible and perceptible in the public sphere" (p. 312). This points to an important role for design. When arguing for the relevance of a concern, designed devices can be mobilised to measure, or to otherwise make the issue tangible. While designed communications can convey the tangible issue to diverse audiences, other designed things may offer a possibility for action. A focus for a number of scholars working with ANT is the way different kinds of actors, including designed things, are assembled to address an issue that has been made tangible and therefore actionable (Marres, 2011, 2012; Marres & Lezaun, 2011; Rogers & Marres, 2000; Venturini, 2010, 2012; Venturini et al., 2014).

Spinosa, Flores, and Dreyfus (1997) point out the important role 'shared concerns' play in initiating change. They argue that for concerns to give rise to actions, they have to be a) identified as concerns, and b) they have to be shared (p. 137). Once shared concerns have been recognised, different kinds of actors assemble in order to address them (Callon, 2005; Castells, 2008; Spinosa et al., 1997; Marres, 2005).

An ordering or prioritising of concerns enables different political, economic and public groups to identify allies that can work together to achieve shared aims (Spinosa et al., 1997, p. 131). This ordering can be carried out by different groups in order to direct their own priorities for action. This idea informs the argument that CR should be framed as 'shared value' (Porter & Kramer, 2011). Shared is understood here to mean that different actors (e.g., publics, government, the corporation itself) agree on relevant CR issues and how they are prioritised. While different actors have different motivations for their interest in resolving a CR issue, their shared understanding that mitigating the issue is necessary, or of value, can bring them together.

For Marres (2005), issues present an occasion for political democracy: "It is issues that necessitate public involvement in politics, and such involvement is dedicated to their settlement" (p. 136). Referring to Dewey, she argues that "in societies that are marked by innovation, it is only to be expected that issues keep arising which challenge existing forms of political, and democratic, organisation" (p. 152). But concerning for Marres is how issues are dealt with by decision-makers; and how concerned publics may be kept from contributing to discussion of the issues, or from identifying strategies to approach and resolve them.

Ideally, CR activities are based on a shared understanding between corporate and non-corporate actors. They are the social and ecological issues the corporation should recognise responsibility for. However, the agenda concerning relevance of issues can be driven by self-interests of powerful actors and not by interests of concerned or affected groups. Marres (2005) refers to the concept of 'non-issues' by Lukes (1974), in describing how the self-interest of powerful actors can hinder issues coming to public attention. She refers to processes that appear democratic, but at a closer look, do not truly involve affected and concerned publics and their interests. This is the case when, for example, powerful actors select which issues and which issue stakeholders are brought to the table, when they influence which voices are listened to and which ones are kept silent. In such cases, a democratic atmosphere in which affected and engaged actors are truly involved in setting the issue agenda, is at risk (p. 81). Marres (2005) stresses the importance of enabling public participation in controversies around issues, because public involvement can shape how issues are approached (p. 49).

The above highlights the complexity of CR, which is sitting in a difficult space. Corporate intentions and achievements may be given a rhetorical spin in CR reports, in order to smooth relations between the corporation and other actors. It may be argued that, by addressing issues that have been raised in the public sphere, irrespective of the underlying intentions or motivations of the corporation itself, weight is given to those issues. The issues are made more visible, more present. Further, the corporation itself is transformed by addressing an issue: “Our concerns draw us not only to see an activity but also to see ourselves as a ‘we’ because the activity transforms us” (Spinosa et al., 1997, p. 139).

Irrespective of their true intentions, corporate engagement with CR shapes their public identity and style[7], and this, at least to some extent, has a shaping effect on the character of the corporation. CR is often used by corporations to present their brand in a particular light. However, this light reflects back on the corporation and influences how the corporation is seen by its members and stakeholders. Engaging with CR holds the potential to cause those who are concerned and engaged to pause, reflect, and to take a position on the issues addressed.

7 Style is understood here as comprising not only the visual identity but also modes of acting (Spinosa et al. 1997; Tonkinwise, 2011).

2.2 Design in the Context of CR

In the previous section, the central concept of this project was introduced: CR. This section draws on literature that focuses on design and designed things in the context of CR. This includes: 1) Literature on design in the context of CR, including literature on socially responsible design in a corporate context; and 2) Literature on design in the context of business and the economy. Each of these literatures provides insights into aspects of the relationship between design and CR. Texts that engage with design and CR discuss the advantages and challenges of design in the space of CR. Often, design is positioned as a management tool or a competitive advantage. However, none of the texts engages specifically with how design is being mobilised in the service of CR. No literature was found that directly addresses what designed things are doing in the space of CR, or the different roles played by design in this space. The two groups of texts will be discussed in turn below, and the gap in the literature that this thesis addresses is identified.

Prior to starting this part of the review, it is important to note that, for the purpose of this project, design is viewed quite broad, subscribing to Herbert Simon's (1969) definition: "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones" (p. 130). This all-encompassing definition of design is chosen, as it does not reduce design to a particular discipline. Rather, design is understood as artificially intervening in order to reach certain outcomes. In the context of this project, these outcomes relate to CR.

Literature on design in the context of CR

In this group, publications identified as particularly relevant to my project were the papers by Koo (2016), and Koo and Cooper (2011, 2016), and the work by Larssaether (2011) and Larssaether and Nijhof (2009). These authors share my interest in the agency of designed things in the space of CR, and in the ways that designed things are entangled in the negotiations of power that are part of CR.

Koo (2016) and Koo and Cooper (2011, 2016) position their work in the field of design management. Their focus is on how awareness and motivation concerning CR issues within the corporation, particularly coming from the in-house designers, determine the extent to which a corporation is engaged with socially responsible design. Their research identifies barriers and drivers of socially responsible design interventions in the corporate setting (Koo, 2016, p. 55). They provide concrete examples and reasons for why CR is complex territory for design. Examples of barriers to socially responsible design in a corporate setting identified by Koo (2016) are: "brutal competition over market share, excessive focus on productivity, perceived lack of consumer demand/marketability, too strong focus on economic imperatives, and difficulties of measuring SRD [socially responsible design] in economic terms" (p. 55).

Larssaether and Nijhoff's (2009) main argument is that CR initiatives can be better understood through attention to the distributed agency exercised by networks of human and nonhuman actors, rather than focusing on the agency of humans within corporate decision-making processes alone. They argue that not enough attention is paid – especially in management literature – to the influence that nonhuman actors can have on CR initiatives. They argue that concepts from ANT can help bring the agency of designed things acting in the context of CR to view. Their argument, informed by ANT, presents a similar starting point for inquiry into the roles played by design in the space of CR, to that taken in my project. Larssaether and Nijhoff mobilise the concept of moral landscapes to point out how physical, cultural and legal elements shape CR initiatives. Special attention is paid to the material dimension, with a focus on designed things and how they enable or hinder responsible behaviour. They suggest that CR initiatives may be more effective if they have been informed by considering the co-agency of things. They conclude that CR initiatives need a holistic 'landscape' of support to succeed in a competitive market economy and that design plays a crucial part in shaping this landscape.

Larssaether (2011) suggests that designed things act in a moral context, and are "carriers of social and political values" (p. 410). He further argues that the power of designed things, and their influence within the particular networks they are part of, depends on how visible and accessible they are to different publics (p. 423). He concludes that designed things, in concert with other human and nonhuman actors, shape human behaviour (p. 424). This position is similar to my own, but I would add that designed things not only shape human behaviour. They can also shape the way entire actor-networks act and how they develop.

The research projects by Koo and Cooper (2011, 2016) and Larssaether and Nijhoff (2009, 2011) have a commonality. They explore the potential design holds to make CR more effective. They advocate for greater recognition by corporations of the role of design. This differs from my direction. My research does not seek to provide corporations with advice on how design can support the realisation of corporate ends (well intended or otherwise). Rather, it seeks to uncover how design is already mobilised within CR agendas.

Another relevant set of texts that looks at what design is doing in the space of CR was published in the Summer 2005 edition of the journal *Design Management Review*. In this themed issue, design in the context of CR is framed as 'responsible design' in the context of CR. A recurrent theme in the collected papers presents responsible design as working in the service of the corporation, while also generating social benefits. Expectations of design in the space of CR are outlined, and the approaches and tools that design is expected to mobilise in realising these expectations are articulated (Walton, 2005; Cooper, 2005; Eisenmann et al., 2005). Case studies of successful examples where design is mobilised to carry out responsible corporate actions are given (Micklethwaite & Chick, 2005). Strategies for developing responsible design agendas in the context of business innovation are suggested (Kusz, 2005). It is argued that design provides a means for ethical corporate action (Madsen, 2005). Elsewhere, the role of responsible design and responsible business practices in helping to generate customer groups is a focus (Sethia, 2005); and it is suggested that the identification of responsible resources for manufacturing and production is an essential part of responsible design (Ljungberg, 2005). Overall, the view on design in the context of CR presented within this issue is an optimistic one, framing design as a management tool that contributes to making CR investments more effective and profitable.

The shared assumption of these texts is that responsible design (that is, design that is intended to do "good") can be good for business. What they do not question or examine is the impact of business contexts on responsible design. Does the reframing of responsible design as a partner to business interests shift the way that designed things act? If businesses benefit from responsible design, do the issues (the matters of concern) that the design is intended to address benefit as well? If so, is what is being achieved sufficient? Do affected issue stakeholders benefit? If so, do they benefit enough? The question becomes one of: Is responsible design in the context of CR acting primarily on behalf of the issue it intends to address, or primarily to realise the interests of the corporation? It seems that the literature engaging with design in the context of CR does not pay much attention to these questions. Rather, it focuses more on the potentially positive impact design interventions can make. It seems that literature on design and CR primarily focuses on how design holds the potential to contribute to the public interest, without discussing how these ends are being affected by the context of economic interests within which businesses operate. Responsible design in a business context sits uneasily between these two positions.

Some authors suggest that the economic context within which a design intervention is placed shifts its political 'coordinates.' Crocker (2014), for example, has a rather critical position towards design in the context of CR. He discusses how sustainable design is often exploited to support 'greenwashing.' Von Busch and Palmas (2016) stress that good intentions of social design can play out differently than initially intended, and how they can be mis-used for private interests (p. 278). Von Busch and Palmas discuss examples of how design interventions can generate rather ambiguous social ends. They encourage designers to not only approach responsible design tasks within speculative means ("What if … ?, What could be … ?"), but to also question their current situation in order to critically interrogate social design interventions.

Cooper (2005) argues that the "dimensions of social responsibility" have to be better understood to see more clearly "where design can contribute to the overall goal of corporate social responsibility" (p. 17). This is an important point made by Cooper. However, there might not be one overall goal of CR, but many. Further, these goals may be conflicting. Those working in the space of CR can only benefit from being aware of these different goals. This project is a step towards identifying these different goals and conflicting interests, and the different roles played by designed things in order to pursue them.

Doing 'good' with design

A large body of design literature on socially responsible design exists, focusing, for example, on designed things (Verbeek, 2005, 2011) or on the role of the designer (Papanek, 1971; Whiteley, 1993; Margolin & Margolin, 2002; Morelli, 2007). Texts discuss, for example, how to teach socially responsible design (Melles et al., 2011), how to manage a design process that intends to generate a socially responsible design outcome (Tromp, 2013; Tromp et al. 2011), or how to work with issue stakeholders. A variety of different methods and approaches are considered helpful for generating socially responsible design outcomes, such as participatory design or user-centred design. Examples of design projects and design interventions are often provided in these texts. However, these examples are mostly from public sector projects (government initiatives, hospitals, community projects, schools) or from grassroot organisations. Few examples are discussed in these texts that are initiated by corporations or in the context of CR. Projects and their outcomes are often set out to educate selected publics. These are all important areas of responsible design. However, not many examples exist where socially responsible design is being discussed in the context of a corporation, particulary in relation to CR.

Despite an extensive body of literature in relation to socially responsible design, not much is being written regarding how designed things act in the space of CR. A reason for why CR is largely overlooked in research on socially responsible design could be that CR is perceived to be a problematic space for designers. It is problematic because it is a contested area for strategic corporate engagement with issues of public interest (Banerjee, 2008), and design is entangled in its strategic and instrumental nature (Crocker, 2014). Design's rhetorical tactics can be used for good and bad alike (Bonsiepe, 2006). Socially responsible design might benefit from studying in more detail those examples where corporations are involved, either by initiating and mobilising the design intervention, or by being asked to change through the design intervention. By paying attention to how design is mobilised in these cases, one could explore if the political 'coordinates' of these design interventions change depending on their economic context.

While there are numerous challenges for designers when engaging with socially responsible design in the context of CR, there are also benefits which can make socially responsible design more robust and help to develop it forward. One of the barriers of responsible design in the business context identified by Koo (2016) was "difficulties of measuring SRD [socially responsible design] in economic terms" (p. 55). This issue was often mentioned in literature on socially responsible design; that is, to better determine the effectiveness and achievements of socially responsible design interventions. A stronger engagement with socially responsible design in the context of CR might bring forward the evaluation of effectiveness of these kinds of interventions, because the corporate environment will make an effort to assess the intervention in order to determine its effectiveness. While effectiveness is a slippery slope (effective towards which ends?), an engagement with this question does contribute to better understand the impacts and effects of responsible design interventions.

Gowri (2004) points to a lack of critical analysis regarding the negative moral externalities that artefacts generate or contribute to. The moral externalities of a designed thing no longer belong to the corporation once it has been purchased. Gowri implicitly makes an interesting argument towards an extended notion of corporate responsibility. He suggests to extend CR to the social context in which a designed thing acts. He also suggests to conduct "an ethical analysis of artefacts and their uses" (Gowri, 2004, p. 43). His notion of negative moral externalities is not limited to products and services, but also applies to other forms of 'output' generated by corporations, such as new social practices.

Literature on design and business/economy

Literature that engages with design in the context of business and economy positions design within different economic and political orientations. Some scholars frame design as a tool that serves corporate interests and drives innovation (Muratovski, 2015; Neumeir, 2008, 2009; Verganti, 2009). Others position design as a political actor that is mobilised in the service of public interests (Fuad-Luke, 2009).

Julier (2017) unpacks the various roles played by design within different neoliberal contexts. He analyses case studies of design operating in economic systems, by looking at 'micro-economic practices' (p. 166) that are shaped by design. He then relates these practices to larger 'macro-economic processes' (p. 166) to show how design is shaped by larger economic developments. At the same time, design is seen as shaping the economic systems within which it is operating. Julier's analysis draws attention to the functional and rhetorical roles of designed things in these systems, and how design shapes behaviours and practices to serve them. Taken together, the detailed accounts given by Julier provide rich insights into how design supports and strengthens economic systems.

Different design practices seem to have different economic and political orientations, which can be placed on a continuum from commercial to critical orientations. Design practices, such as branding, marketing, packaging, product design, visual communication, interface design, service design and design thinking, have established roles in the business world. They help existing economic systems to flourish (Muratovski, 2015; Neumeier, 2008, 2009; Julier, 2014, 2017). Authors understand design as a driver for innovation, which can result in economic and competitive benefits. The social and sustainable value of design interventions is often foregrounded when discussing design's potential in the context of organisational innovation (Buchanan, 2015; Whitney, 2015; Kimbell, 2014). Whitney (2015), for example, points to the capacities of design to generate socially sustainable interventions that enable "economically viable ways of providing choice" (p. 58). Providing more socially sustainable choices is an important role of design in order to initiate change. A similar point was made by Larssaether and Nijhoff (2009).

Buchanan (2015) employs a four-order design model to discuss how design shapes organisations. The four orders are: words and images (first order), physical objects (second order), activities, services and processes (third order), and systems, organisations and environments (fourth order). He argues that design enhances the experience of products and services, and that design as a management tool, holds the potential to enhance organisational culture. While emphasising design's contribution to create economic value, he also stresses that focusing on profits is only part of the role of design in an organisational context. He points to the 'deeper purpose' of design, referring rather tentatively to the potential design holds to address corporate responsibility (p. 20).

Design practices, such as social design, sustainable design, participatory design, community oriented design and transition design, seem to be concerned with facilitating discussion between economic and public actors. These design practices invite different actors to participate in negotiating issues of public concern. In this context, design is often positioned as having a mediating role (see, for example, DiSalvo et al., 2011; Tromp, 2013;). Critical design practices, such as design activism, do not appear to be interested in a shared space where corporations are invited to participate. Rather, they often position themselves as a counter position to economic actors and their interests (Fuad-Luke, 2009; Malpass, 2012).

As this brief summary of the relationship between design and business suggests, the different positions are not without tensions towards each other. In the corporate context, design is predominantly understood as problem solving or at least problem improving; that is, design as a tool to serve economic interests (Gardien & Gilsing, 2013). Design is asked to make the consumption of products and services easier, faster, more enjoyable. Others rebel against this narrow positioning of design (Bonsiepe, 2006; DiSalvo, 2009; Morelli, 2007).

Morelli (2007) describes this position of what design has to offer as limiting. He explains that design as problem solving could also be seen as hindering or disabling people to find their own solutions to problems they come across. Because of designed things, often little skill and participation is required to execute tasks. He describes this as a form of 'deskilling,' letting people become too passive by not developing their own problem solving tactics: "The logic, although comfortable, is very expensive; not only because it requires monetary transactions, but also because it compromises the customers' future capability of finding their own solutions to everyday problems" (p. 6). This is an interesting thought that aligns with DiSalvo's (2009) position. DiSalvo argues for a design practice that is able to open up and present an issue, but without necessarily creating solutions for it: "Within the context of the construction of publics, the role of design may stop at the discovery and articulation of the issue" (p. 60). He continues: "Bringing to awareness (i.e., making apparent and known), is a significant objective and task itself, deserving thorough consideration. This is not to shirk responsibility or abandon opportunity for taking action, but rather to give the construction of publics as a framing concept and activity the acute attention necessary to develop thorough research and scholarship" (p. 63). For DiSalvo, it is a legitimate role for design to point out problems or issues, to raise questions, initiate debate or elicit emotions.

A growing body of work that seems to align with DiSalvo's framing of design, not to smooth issues but to stir them up, can be found in design practices such as critical design[8] and design activism. These rather new areas of design practice can be found predominantly in academic contexts and driven by political agendas (see, for example, Dunne,

8 Malpass's (2012) doctoral thesis 'Contextualising Critical Design: Towards a Taxonomy of Critical Practice in Product Design' contains a comprehensive overview of existing work in this field of critical design practice up to the year 2012. The review of the literature in Malpass's first four chapters provides an outline of the academic discourse around critical design practice. The review of the literature explores the history of critical design practices, their methods and theoretical perspectives. Malpass (2012, 2013) suggests a taxonomy that divides critical design practice into three different types: associative design, speculative design and critical design. These three categories have in common that they all use ambiguity in their method. The kind of ambiguity created, however, is different in each category. Associative design plays with ambiguity of context in disciplinary boundaries, speculative design explores ambiguity of information in relation to science and technology, and critical design plays with relational ambiguity in the context of the sociocultural.

2005; Dunne & Raby, 2001, 2013; Gaver, 2009; Malpass, 2012, 2013; Martinussen, 2013). As Gaver at al. (2003) explain:

> "In a commercial practice product designers work to eliminate ambiguity: their main effort goes into balancing clarity of use (making it intuitive) with richness of semiotic suggestion (making you like what it stands for). Both aspects of the design attempt to control the user's interpretation of the product – that is, to reduce ambiguity. The most important benefit of ambiguity, however, is the ability it gives designers to suggest issues and perspectives for consideration without imposing solutions" (Gaver et al., 2003, p. 240, cited in Malpass, 2012, p. 57).

This section has reviewed different bodies of literature to gain an understanding of how design's role in the context of CR is understood. The review of the literature suggests different positions on how design's role is understood here, from serving primarily corporate interests to design as a driver for positive change. Others see the role of design more as a critical tool to reflect and raise questions. No text could be identified that specifically looks at the different roles that design is playing in the context of CR, as mobilised by the corporation.

2.3 Chapter Summary

This chapter introduced the central concept in this research project: Corporate Responsibility (CR). I looked at literature that discusses designed things in the context of CR. This review of the literature provides insights into how designed things can be understood in the context of CR.

CR was discussed as complex territory where private and public interests are negotiated. Corporate engagement with CR was described as a constant reframing process that identifies what sits outside the corporate boundary of responsibility and what needs to move inside this boundary. It was suggested that public involvement shapes the space of CR. Corporations have more freedom to determine their frame of responsibility if public involvement is low. Public participation in negotiating CR puts pressure on corporations to consider the externalities generated by their business operations. An engagement with the literature on design in the context of CR showed that design is active in this space and that design scholars engage with this topic. In this body of work, responsible design is often framed as a competitive advantage for corporations. Others see this role of design more critically, where the capacities to act responsibly may be compromised in a corporate setting.

3.
The Theoretical Lens Used: Actor-Network Theory

Chapter 3
The Theoretical Lens Used: Actor-Network Theory

In this thesis, Actor-Network Theory (ANT) is the theoretical lens used to interpret what designed things are doing in the space of CR. This chapter introduces the ANT concepts that have been used in this project. ANT suggests that actors participate in actor-networks that generate performative effects. Actors not only participate in actor-networks, they are also actor-networks themselves. An actor-network becomes an actor when understood as a single thing. Actors and their actions are shaped by their participation in actor-networks. Together with other actors they have agency and generate effects. This chapter introduces the specific ANT concepts that have been used in this project. These are:

3.1 Agency

Design researchers typically discuss the agency of designed things as reflecting the intentions of the designer. Herbert Simon (1969) explains design as rational problem solving, as a means to a defined end. The work by Bryan Lawson (1980, 1994), Nigel Cross (2011) and Donald Schön (1983) describes design as a method, a process, as something instrumental. Kees Dorst (2011) identifies 'frame creation' as an essential strategy of the designer in problem solving. In this body of work, design is understood as providing solutions to problems. Insofar as the designed thing acts, it is assumed to act according to the designer's intention. However, designed things may act in ways that are different to those intended or anticipated. This is increasingly recognised. Czarniawska (2013) can be seen as representational of this growing recognition of the complexity of agency of designed things. She writes: "I rely on the theory offered by Elaine Scarry in The Body in Pain (1985). Her basic claim was that an artifact's 'reciprocation' (the ways in which it can be used) always exceeds the designer's projection. How is this possible?

Well, for one thing, the context of use is always richer than the context of design; or, put differently, the contexts of use are many, the context of design only one" (p. 19).

Actor-Network theorists understand agency as exercised by complex and transitory assemblages and networks that may include the human and nonhuman, the material and immaterial, the animate and inanimate, the designed and undesigned (Latour, 1987, 1992, 1999; 2005b; Latour & Weibel, 2005; Callon, 2007). Distributed, hybrid agency is a foundational ANT concept.

3.2 Performativity

The concept of agency, as understood by ANT researchers, is further distributed and de-centred through the notion of performativity. To say that something is performative means that its action brings something into being. In other words, actors perform actions that create effects and have agency. Actions that are performative create reality (Law, 2009, see p. 151). MacKenzie et al. (2007) explain the concept of performativity in relation to the work on performative utterances by J. L. Austin:

> "For the philosopher J. L. Austin, a performative utterance was a specific kind of statement or expression that establishes its reference through the very act of uttering (Austin, 1962). In saying, for instance, 'I apologize,' I am not reporting on an already existing state of affairs. I am bringing that state of affairs into being: to say 'I apologize' is to make an apology. 'I apologize' is, thus, a performative utterance" (MacKenzie, 2007, pp. 2-3).

In this context, statements are seen as 'is-statements,' for example, 'the door is closed,' or as performative utterances, which are 'does-statements,' like for example, 'I promise' or 'I marry you.' Callon (2007) describes performative statements as being "actively engaged in the constitution of the reality that they describe" (p. 318). For Callon and colleagues (Callon, 1998, 2007; Cochoy et al. 2010, MacKenzie et al. 2007), performativity is not understood as an act that describes something, but as an act that produces something, that brings something into being. These authors use the concept of performativity to explore if economics as an academic discipline not only describes, but also shapes the economy out there in the world. To what extent does economic theory influence and have an impact on economic practices? They suggest a performative force, not only by humans, but by models, theories, devices, and assemblages of the "human and nonhuman, social and technical, textual and material" (MacKenzie et al., 2007, p. 15). In the context of this project, the models, theories, tools, technology, textual and visual material deployed in the space of CR have performative force. These designed things shape how issues are understood and acted upon. They contribute to constitute reality.

3.3 Performative Association

Actors do not act in isolation, they act in concert with other actors. Together these actors generate performative effects. The coming together of actors that, through their actions, generate performative effects is often termed co-agency (Latour, 1999; Michael, 2000a) or performative association (Callon, 2007; Stewart, 2015). These terms describe a performative entity that generates effects. In *Reconnecting culture, technology and nature*, Michael (2000a) explores how humans and everyday objects can be understood as co(a)gents. One of the examples given is the 'Hudogledog.' This co-agent is comprised of a hu(man), a dogle(ad), and a dog. Using this example, Michael raises the question of who or what is the dominant force in a 'performative association?' In the context of his example: Is it the human, the dog, or the doglead? Which part of the performative association can be seen as a 'signifier,' meaning which part signals something about this performative association. For example, the doglead can signify 'going for a walk' or 'the dog is under control.' He further refers to the 'cycle of appearance and disappearance' (p. 118) of most performative associations, as they might only come into being once or twice a day or a year. He explains that even when not actively connected, the belonging to this association still exists within each part. While performative associations do not constantly exist, they still remain aspects of the individual elements involved. An example would be that when at work (different form of performative association), a person that is a parent is still connected somehow to the performative association of being a parent.

Performative associations are considered to be fragile. Law (2009) argues that they are fluid, ever evolving and changing, because actors and their positions towards each other are constantly in motion. A technological invention, a political move, an environmental disaster, or a small glitch, holds the potential to reassemble or break down an entire actor-network in a snatch. For example, actor-networks can be shaken up by introducing a new actor, because a new actor can re-define relations between actors, or it can disrupt or strengthen existing ties between actors.

Law (2009) outlines some of the strategies to make actor-networks more stable. He suggests that "social arrangements delegated into non-bodily physical form tend to hold their shape better than those that simply depend on face-to-face interaction" (p. 148). He provides an example to explain his point made: the actor-network of a legal system is stabilised when physical things are in place that enable the legal system to act and to generate effects, such as a prison. Certain roles are delegated to the prison as a physical building, such as imprison those that do not obey the law. These kinds of physical things make the actor-network of a legal system more stable, more durable. This is a reference to the role of designed things. Understood as tangible objects, designed things provide "material durability" (p. 148). They help to strengthen the particular actor-network. The designed thing itself does not guarantee stability, but together with other actors, the actor-network gains durability.

Unpacking what designed things are doing in the space of CR through the concept of performative association follows Latour's (2005a) quest to interrogate actors in relation to how they are mobilised through the interaction with other actors. Latour proposes the questions: "How do they manage to bring in the relevant parties? How do they manage to bring in the relevant issues? What change does it make in the way people make up their mind to be attached to things?" (p. 34). With these questions Latour suggests to explore actors through the performative associations they are part of.

Translating the concept of performative association to the context of corporate responsibility suggests a dispersed and shared understanding of responsibility. Waelbers (2011) discusses in more detail how ANT, as a theoretical lens, rejects to assign responsibility to singled out actors (pp. 46-49). This has implications for how designed things acting in the space of CR can be understood. It points to the complexities to determine whether or not a designed thing is considered to be 'ethical' or a form of 'greenwashing.' Answering this question is not determined by the designed thing itself, but by how it is entangled with other actors and their actions.

3.4 Script

Designed things have a script belonging to them. The script or 'program of action' is a set of behaviours or actions performed by an actor. Latour (1999) elaborates: "Each artifact has its script, its potential to take hold of passersby and force them to play roles in its story" (p. 177). Akrich (1992) explains: "like a film script, technical objects define a framework of action together with the actors and the space in which they are supposed to act" (p. 208).

Designing involves some decision-making on what kind of script a designed thing should have. Akrich (1992) suggests that "objects define actants and the relationships between actants" (p. 207), and that the designer plays a role in determining these actants and their relationships. The designer suggests what is delegated and to whom. Akrich stresses, however, that the kinds of engagement intended by the designer may or may not be recognised or performed by other actors. Things can be used in ways other than those intended, or they can be placed in a context or cultural setting where the thing is interpreted differently. To grasp the complexity of a particular script, the social, technical and political relationships a designed thing takes part in, have to be considered. To understand the thing by its relations to other actors or groups of actors enables the designer to shift or amend the script of a designed thing, to 're-script,' to re-design. Latour (1999) refers to re-scripting when the program of action for one or multiple actors is being re-written or changed. The notion of prescription refers to design's ability to not only suggest preferred users, but, more extreme, to exclude certain user groups or user behaviours. While a script suggests a certain way to engage with a thing, a prescription demands a certain kind of response from an actor (and by doing so, it excludes certain actors or ways of interacting or engaging with it altogether). Looking at a designed thing through the notion of the script, starts to unpack what designed things are doing in the space of CR and how this relates to actions of other actors. Participation of actors can be shifted by redefining an actor's script.

3.5 Translation

The concept of translation (Latour, 1992, 1999) refers to the notion that roles can be delegated or shifted. A particular role that is performed by one actor or collective of actors, can be delegated to a different kind of actor or collective. This reallocation of roles, or of work from one set of actors to another, is variously termed translation, delegation, displacement, or shifting (Latour, 1992, 1997, 1999). Translation does not necessarily go from a human to a nonhuman thing. For example, the task of regulating traffic can be translated from a police officer to a set of traffic lights, but equally (should the traffic lights break down), the translation can be reversed and the task reassigned to the police officer. Law (2009) explains: "To translate is to make two words equivalent. But since no two words are equivalent, translation also implies betrayal: traduction, trahison. So translation is both about making equivalent, and about shifting. It is about moving terms around, about linking and changing them" (p. 144). Corporations can translate or delegate certain roles to designed things, such as the role to address a CR issue. In this way, designed things enable the corporation to translate issues into a corporate context and to respond to them. In other words, design offers the corporation modes to engage with issues of public concern, such as air quality.

CR activities within a corporation can be seen as a set of actor-networks that have been delegated a particular role in relation to addressing a CR issue. The particular actors assembled in the space of CR change over time, as witnessed by the CR reports, but the script, or plan of action that CR performs, remains intact. It is passed down from one actor-network assembled in the space of CR to the next.

3.6 Mediator and Intermediary

The concepts of mediator and intermediary (Latour, 1997, 1999) are helpful in determining how designed things enable engagement with issues in the corporate context. An actor (which may be a designed thing) is a mediator when engagement with that actor brings about changes in numerous actors above and beyond the specific outcome that was sought through the engagement. A mediator "cannot be exactly defined by its input and its output" and it "always exceeds its condition" (Latour, 1999, p. 307). Things that enable these kinds of open encounters with other actors are described as mediators. In contrast, things that can be understood as a bounded means to an end, as a smooth encounter that provides a predictable path to reach an aim, are described by Latour (1997) as intermediaries.

Conceptualising designed things as either mediators or intermediaries starts to unpack what kind of engagement the designed thing offers and whether or not it has the potential to have an impact on other actors by transforming them. It enables one to explore the capacity of a designed thing to reframe the relationship between human and nonhuman actors, the ability to transform or to shift this relationship, the potential to encourage different forms of engagement. This is complex territory, as the categorisation is not straightforward. While in one situation a designed thing can be perceived as an intermediary, in another situation, it can be seen as a mediator, as actively shaping actions of other actors. Whether a particular actor or association is encountered as a mediator or an intermediary depends upon context. Everyday things are often habitually encountered as intermediaries. That is, they are seen as unproblematic providers of a particular service, and therefore are largely invisble to those who engage with them[1]. Mediators, by contrast, actively impact the actors that engage with them. Unlike intermediaries, mediators reconfigure; they are capable of rewriting scripts (Latour, 1999, p. 186).

1 An example of how a designed things can shift from being an intermediary to a mediator is discussed by Michael (2012a).

A designed thing can be encountered as an intermediary for some, and for others as a mediator. An electric car, for example, aims to be a more ecological version of a fossil fuel car. It intends to disrupt current practices around individualised motorisation as little as possible. Apart from some adjustments, such as shorter distances before a recharge is required, it offers similar conveniences and practices for the driver as a fossil fuel car does. The electric car intends to be an intermediary for end users. However, for corporations that produce and distribute fossil fuel, the electric car, if becoming a mainstream consumer good, holds the potential to be a mediator by re-assembling entire networks. In this scenario, the electric car is able to initiate the reconfiguration of established economic networks around fossil fuel production and distribution. From this position, the electric car can turn out to be a mediator.

Investing in electric company vehicles might be justified as a CR measure that helps the company reduce its carbon footprint. Here, the electric vehicle can act as either an intermediary or as a mediator. While an intermediary allows a corporation to change its inputs and outputs without changing its internal activities, a mediator re-negotiates internal relations as well as inputs and outputs. CR initiatives that are intermediaries are relatively straightforward for the company, and allow easy reversal, the adoption of a mediator can help to reposition the company more effectively in a changing environment.

The concepts of mediation versus intermediary are of interest to my project, as they help to explore what kind of change is initiated by a designed thing. Who or what are required to change once the designed thing enters the space of CR? What kind of change is being triggered by the designed thing?

3.7 Black Boxing

For Latour (1987), black boxing is the process of simplifying an issue or a thing so that it can be easily engaged with. Aspects considered not relevant are covered up, backgrounded, and only relevant and necessary aspects are kept at the surface. This simplification pre-determines how the issue or thing is understood. It pre-selects what is made visible and how it can be engaged with. The process of black boxing is inherent to design in all its variations. Designers engage in black boxing when simplifying the engagement with the design outcome. The interface design of an online tool to calculate carbon emissions, for example, provides only those buttons, links, and information that are necessary to manoeuvre through the process of evaluating those functions available. It does not provide any information or insights into the complexities of the processes that are taking place backstage.

3.8 Chapter Summary

This chapter introduced Actor-Network Theory as the theoretical lens used to interpret what designed things are doing in the context of CR in this thesis. It outlined specific ANT concepts that have been used to interpret how designed things participate in actor-networks, or performative associations that have agency and generate effects. The ANT concepts of agency, performativity, performative association, script, translation, mediator and intermediary, and black boxing, were introduced. Discussing these concepts and how they are helpful to unpack actions and effects of designed things showed that ANT is a suitable lens for interpreting what designed things are doing in the space of CR.

4.
Data Sources and Approaches

Chapter 4
Data Sources and Approaches

This chapter introduces the case study corporation selected for this research. It then takes a closer look at CR reports as data material. From there, it introduces the approaches used to analyse the CR reports: discourse analysis and visual methods. These sections give an overview of the data sources and approaches taken in this thesis. They frame the research conducted and give a rationale for the approaches chosen.

4.1 Data Sources Selected

The focus of this project is designed things mobilised within CR activities. A corporation and their CR activities was chosen to study concrete examples of designed things operating in this space. This corporation was Deutsche Post DHL. Deutsche Post DHL (hereafter referred to as DPDHL) is an internationally operating mail and logistics company. It is a German company that comprises two corporations under one umbrella brand: 1) Deutsche Post, Germany's main postal operator, and 2) DHL, one of the largest logistics companies in the world. Deutsche Post was founded as a state-owned enterprise more than 500 years ago. It was transformed into a stock corporation in 1995, and became publicly listed in 2000. DHL was fully purchased by Deutsche Post in 2002. DPDHL is one of the largest service providers in the world, with approximately 5 million employees in over 220 countries and territories.

DPDHL provides a suitable case to study in detail, as it is one of the largest service providers worldwide that operates in logistics. It belongs to a sector that has a significant impact at a global level: transport. The overall energy consumption of the transport sector, which logistics is part of, is large and the demand for logistics seems to grow continuously. It enables the flow of goods locally and globally. Stewart (2015) discusses how flow is a crucial part of today's hyper-mobile world. DPDHL's strong public visibility was another reason for why DPDHL was chosen. It was expected that they articulate a position towards issues of public concerns, such as CR, and express their responsibilities towards them, due to their public visibility.

DPDHL and their CR activities

DPDHL started to actively engage with CR in 2003, and was the first internationally operating logistics company to set themselves a target for reducing the carbon emissions resulting from its business activities. In 2008, they set themselves the aim of reducing their carbon emission by 30% by the year 2020.

> "We have committed ourselves to improve the CO2 efficiency of our own operations and those of our subcontractors by 30% by the year 2020, compared to our 2007 baseline. This means reducing the CO2 emissions we generate for every letter and parcel sent, every tonne of cargo transported and every square meter of warehouse space used" (DPDHL CR report 09/10, Environment, p. 4).

This goal was achieved in 2016, four years ahead of schedule. A new target has now been formulated: zero emission by the year 2050, with the intermediate aim to reduce emissions by 50% by the year 2025[1].

Senkel (2014) studied DPDHL's CR communication in their Annual Reports between 1998 and 2011. She identified four different phases in the development of DPDHL's CR approach. The different phases are labeled by Senkel (2014) as 'absence' (1998-2000), followed by 'awareness' (2001-2004). The third phase is called 'acceptance' (2005-2008), followed by the fourth phase, which is labeled 'active responsible leadership' (2009-2011). Senkel's research shows that DPDHL has become more active in the space of CR over time.

1 See also the press release (http://www.dpdhl.com/de/presse/pressemitteilungen/2017/dpdhl_group_null-emissionen_logistik_2050.html, last viewed 18 April 2017)

Today, the corporation has a wide ranging portfolio of CR activities. It is divided into three areas: 1) GoGreen, comprising environmental programs and activities; 2) GoHelp, offering disaster management and help; and 3) GoTeach, providing education programs and activities. DPDHL's CR strategy is positioned as part of their business strategy, especially GoGreen, which is framed as a shared value approach. Over the years, DPDHL's engagement with CR has increased and has become a central part of DPDHL's overall business strategy. They now have a strong communication strategy associated with their CR activities.

Deciding on a data source

I initially viewed a wide spectrum of publicly available material on DPDHL's CR activities, such as material published by DPDHL including CR reports, annual reports, press releases, sustainability and future trends studies[2], case studies featured on the corporate website (www.dpdhl.com), their blog *delivering tomorrow* (delivering-tomorrow.com), and merchandise communication on sustainable products and services. External material published about DPDHL was also viewed. This comprised media coverage and external evaluations about the corporation in general, with a focus on their CR activities and information about ethical conduct and misconduct.

Following this initial scoping exercise, DPDHL's CR reports were chosen as the main source of data analysed in this study. Of the materials examined, CR reports were considered a particularly rich data source. They are the main source of information on DPDHL's CR activities. They provide documented evidence of DPDHL's CR activities and designed things mobilised in this space. These documents are time-stamped and sequential.[3]

2 For example, *Delivering Tomorrow: Towards Sustainable Logistics*, 2010, and DHL *Fair and Responsible Logistics Report*, 2015.

3 While the CR reports are the main source of data material, the materials on DPDHL's CR activities mentioned in the above paragraph were also examined and will be occasionally drawn upon when discussing aspects of the CR reports.

Analysing CR reports offers insights into the different roles designed things play in the context of CR. CR reports perform a rhetorical role communicating to stakeholders. They portray designed things in certain ways, providing some information and holding back other information. Studying the representations of designed things in the CR reports reveals how things are made public in the context of CR, but it requires alertness to the agency of these representations.

Engaging with publicly available CR communication was considered more suitable for my research project than directly working with DPDHL's CR department, or by conducting interviews with corporate representatives. This was because I was interested in the public interface of CR activities, and the designed things that are mobilised here. It was considered important to work with the information and representations that transpired from the corporation into the public sphere. This approach enabled me to gain insight into how designed things are positioned to those outside of the corporation. It was important to work with information that operates at the public face. CR reports are actors that operate in the space of CR. They are designed things that shape how CR, and the designed things mobilised within CR, are understood.

CR reports are actors, but also are actor-networks. As explained in Chapter 3, ANT argues that all actors are also actor-networks. Whether a particular actor-network is analysed as an actor-network or as an actor depends upon the unit of analysis. As actors, CR reports participate in larger actor-networks that have agency and produce effects. As actor-networks, CR reports assemble arguments, images, and references to other actors, to generate effects. These effects play a role in the larger actor-networks within which CR reports participate as an actor.

This thesis understands CR reports as both actors and as actor-networks, however the focus of this research is on the CR reports as actor-networks; that is, as assemblies of arguments, images, references and other rhetorical actors gathered into an actor-network. A different thesis might examine CR reports as actors within wider actor-networks, however that is not the focus of this project.

CR reports as data material

Nine CR reports were selected for analysis. These nine CR reports capture the time period 2008 to 2015. This time period covers the corporate leadership of Frank Appel. He was appointed DPDHL's CEO in February 2008 and continues in this role as of 2018[4]. Looking at DPDHL's CR reports over this extended time period allowed insight into how CR activities, and related designed things, developed over time. All DPDHL's CR reports that were analysed are publicly available and can be downloaded in PDF format from the corporate website[5] under: www.dpdhl.com/en/responsibility/services/downloads.html.

DPDHL publishes their CR reports in two languages, German and English. The English version is a translation of the German CR report. In this project, the English versions of the CR reports were analysed, as this thesis was conducted in English and using the English text was considered more suitable when referencing the data material.

CR reports provide a record of CR activities, which makes them a valuable data source for my project. However, CR reports are designed things themselves. Their agency is complex. They are rhetorical and they contain claims of various kinds. CR reports are concerned with human intentions. They organise material to communicate reasons, strategies, actions and results. Representations of CR activities are selective and straightforward stories. These stories are told to communicate a sense of control over actions and outcomes.

4 Frank Appel continues to be the CEO of DPDHL. In a corporate press release on 9 December 2016, it was announced that Frank Appel was appointed to continue in this role until 2022.

5 As part of the Ethics requirements of my home university, I submitted an Ethics Application that identified the data I am working with as low risk due to it being publicly available. This application was approved by the ethics office. However, I was advised to inform the corporation that I was conducting this research. I informed DPDHL via email that I am conducting research on their publicly available CR communication material. DPDHL acknowledged my research with an email response. No further communication between me and DPDHL took place when conducting my research.

Representations of designed things are carefully chosen for the role they play in the CR reports. Words and visuals chosen in these representations have agency and meaning in the corporate context, and are capable of mobilising other actors, such as human actors within the corporation and external stakeholders (McKenzie et al., 2007).

While regulations on CR reporting are becoming firmer, no strict rules exist on what to report and how to report it. There are only guidelines for reporting non-financial information, for example, produced by the Global Reporting Initiative (GRI, www.globalreporting.org), the GHG Protocol standards (www.ghgprotocol.org), the UN Global Compact, and the OECD. These guidelines offer suggestions on what and how to report voluntary non-financial corporate information. As no binding reporting standards exist, how and what is being reported in CR reports varies greatly between corporations. As a voluntary and unregulated commitment, it is to be expected that corporations are strategic in what they report and how they report it (Hennig, 2015). Corporations might foreground positive actions taken in the name of corporate responsibility, and background negative externalities that have not been addressed.

There are some signs of making the publication of non-financial corporate information about their social and environmental impact mandatory. For example, in March 2017, the German Bundestag passed a law that introduces requirements for large corporations to report on CR. In Germany, it is now "mandatory for large publicly traded companies to provide standardised, measurable information on the impacts their business practices have on society and the environment" (German Council for Sustainable Development, news item from 10 March 2017[6]). Before 2017, it was voluntary to report on non-financial corporate information.

6 https://www.nachhaltigkeitsrat.de/en/news/german-bundestag-passes-law-introducing-csr-reporting-obligations/, last viewed 23 Januar 2018.

CR reports are strategic

CR reports are a data source that must be interpreted with care, as they are strategic communication tools. A reason for why corporations spend time and effort to publish CR reports, when it is not legally required, could be to respond to expectations or concerns from diverse stakeholders. Here, CR communication attempts to convince different audiences that things are under control. In other words, a CR report provides "a demonstration to outsiders of how the organization is apparently rational and in control of its destiny" (Knights & Morgan, 1991, p. 264). This might be done to shape the corporate image, or to steer the conversation about an issue into a particular direction. In other words: "Communication is almost always an attempt to control change, either by causing it or preventing it" (Hanna & Wilson, 1984, p. 21, cited in Swales & Rogers, 1995, p. 223).

CR reports articulate a corporate position on perceptions of the corporation's responsibilities in relation to public good. They report on corporate actions and intentions in order to respond to these responsibilities. Breeze (2012) describes corporate publications as sitting in between promotion and legitimisation. They are a hybrid publication genre where 'ostensible information' is mixed with promotional types of communication genre. In her research, Breeze analyses words with multiple meanings used in corporate publications. She discusses, for example, the word 'value' and its potential to manipulate the reader, as 'value' can refer to ethical or financial value. It is an example of a term that is often used in CR communication that merges "positive associations from the spheres of both ethics and self-interest" (Breeze, 2012, p. 14). Breeze sees CR reports, and other forms of CR communication, as strategic in how they communicate CR activities.

Cox's (2013) study of corporate communication on environmental issues concludes that it is often used for green marketing, for product or service advertisement or to improve the corporate image (see p. 286 & p. 292). It can be difficult to determine if a corporate message is leaning towards 'greenwashing,' or is a legitimate effort to take on responsibility. Cox (2013) refers to 'six sins' that can help to identify greenwashing.

Indicators for well intended CR, identified by Cox (2013), include a corporation's inclusion of external actors in critical engagement with its CR activities; support for governmental efforts to improve environmental standards and regulations; and inclusion of third party evaluations of CR actions, such as www.sourcewatch.org.

Reporting on CR is often claimed by corporations as providing transparency on corporate actions. Considering the points brought forward by Cox (2013) and Breeze (2012), it seems that CR reports are better described as providing 'strategic transparency,' borrowing from the concept of 'strategic discourse' (Knights & Morgan, 1991). Knights and Morgan (1991) refer to the term 'strategic discourse' when corporations reveal some information, while hiding other. Corporations are strategic in how they communicate issues and CR activities to achieve intended outcomes, such as being perceived to act responsibly.

CR reports are performative

Irrespective of the drivers for why a corporation publishes CR reports, the fact that they are engaging with issues of public concern shapes the corporation and how its responsibilities are understood and approached (Taylor & van Every, 2000). CR reports are a central part of a corporation's communication and interaction; they shape the corporation, and how it is positioned within different networks. In other words, CR reports are 'performative,' in that they help bring into being what they are describing – what the corporation is today and how it is being translated into the future (Austin, 1962). CR reports shape how CR issues are understood and approached, and how actors – within and outside of the corporation – are mobilised to act on these issues.

CR reports can be seen as 'writing tools,' in the sense developed by Callon (2002). Callon describes writing and (re)writing devices as "tools used by the actors to organize themselves" (p. 191). He argues that writing tools, especially for service corporations, are mediators that translate complex structures into stories. Writing and (re)writing as a shared activity by a group of employees is explained as a performative process that not only shapes the written content, but also those involved in the writing and (re)writing. The written thing becomes an actor itself. Callon compares the written thing to a character (an actor) in a novel. The character is "shaped by the novel," by how the story unfolds. At the same time, the character plays an active part in enabling the story to develop, to move forward, "to progress" (p. 200). Callon (2002) describes writing tools as in between knowing and acting (p. 212). They translate knowledge into an accessible form for others to engage with. They act out what they intend to achieve. Annually published CR reports, understood as writing tools, shape the corporation's conception of their responsibilities to the public. At the same time, the activity of framing, through CR reporting, contributes to how the corporate story on responsible actions will unfold.

Cooren (2004) makes a similar argument to Callon (2002) in relation to the performative capacities of written documents in organisations. For Cooren, texts, together with other human and nonhuman actors, shape corporate processes and activities. They can invite, demand or create expectations for action. For example, the formulation of concrete targets in a report requires action in order to meet those targets (p. 382). Cooren explains: "Signs, memos, and contracts display a form of agency by doing things that humans alone could not do. Created by human beings, these texts participate in the channeling of behaviours, constitute and stabilize organizational pathways, and broadcast information/orders" (p. 388). Taylor and van Every (2000) have a similar take on the performative dimension of writing practices in organisational contexts by suggesting: "It is the existence of such texts and the text-worlds they constitute that makes the organization visible and tangible to people (so that they can, as Weick puts it, see it). Yet the production of a text is inherently a social event (there must be a reader as well as an author, a hearer as well as a speaker, for it even to be a text), and so the production of a text-world is simultaneously the production of a discourse-world, realized in conversation" (p. 325). Taken together, the authors above share a perception that modes of corporate communication are performative; that is, they bring the world they describe into being.

4.2 Discourse Analysis

Mixed methods were used to analyse and interpret the nine CR reports selected for this project. In the first place, qualitative methods for developing themes out of the data were informed by discourse analysis. Discourse analysis was identified as a suitable method for this project, as will be outlined below.

Discourse analysis is a broad term used in a wide range of qualitative research contexts that engage with different forms of discourse (Rose, 2012). Its spectrum spans from micro to macro analysis of texts and visuals, and from a linguistic to a more philosophical/political research approach, which is termed critical discourse analysis (Alvesson & Kärreman, 2000, 2011). Critical discourse analysis explores political dimensions of discourse. It looks, for example, at power and manipulation, often drawing on the work of Foucault (1977).

Discourse analysis is in favour of analysing text, but it also includes other modes of communication and representations, such as visuals (Kress, 2012; Rose, 2012). Clegg (1989) describes "discoursive practices" as "practices of talk, text, writing, cognition, argumentation, and representation generally" (p. 151). I share the wider framing of what constitutes discourse with Clegg. Discourse, as understood in this thesis, is not reduced to the written word. It also constitutes other modes of communication, such as visuals, icons, graphs and typographic elements in the CR reports. Discourse analysis pays attention to the meaning and effects of those texts and visuals (Gee, 2014; Wood & Kroger, 2000; Potter & Wetherell, 1987). It considers the performative dimension of textual and verbal representations. For Rose (2012) "the power of discourse means that it produces those things it purports to be describing" (p. 210). This makes discourse analysis and ANT a good fit. ANT understands visuals and texts as participants in performative actor-networks that produce effects in the world. Discourse analysis understands agency in similar ways.

Nimmo's (2010, 2011) research brings together discourse analysis and ANT. It provides a helpful precedent for this combination of theory and method. Nimmo understands the data he is working with – different texts – as hybrid and performative. Nimmo (2011) explains: "texts as mobile and material inscriptions are active agents which assemble, shape and connect practices, and in doing so enact objects, constitute subjects, and inscribe relations, ontological boundaries and domains" (p. 114). The text and visuals in the CR reports, as well as the actors they referenced, were understood in this way. Following Nimmo on how to approach the analysis, I attended to the "work of inscription, translation and mediation" performed by the actors mobilised within and by the CR reports (p. 114). I also followed his suggestion to examine the text on two different 'levels:'

> "In practical terms this involved reading the documents on two 'levels' at once, on the one hand for their empirical content, but also more genealogically, that is to say, with an attentiveness to the historical agency of the documents themselves in defining – and thereby helping to constitute – subjects, objects and domains. Thus the documents were treated both as reports on real events and developments, which could be more or less accurate, and at the same time as inscriptions with a social and ontological efficacy of their own" (Nimmo, 2011, p. 114).

Discourse analysis favours interpretation rather than scale. In this respect, it is different from, for example, qualitative content analysis in that it does not determine which theme is relevant or important simply on the basis of frequency. A theme can appear only a few times in the data but still be important in how the data is interpreted. As Rose (2012) emphasises: "the most important words and images may not be those that occur most often" (p. 210). To determine the relevance of a theme not purely on the weighting in the data, is a characteristic of discourse analysis. It encouraged me to interpret certain themes in the data as relevant, even when they were not very present in the data. Some themes considered relevant were not the ones most present in the data. Themes could be scattered throughout a few reports, and have an impact on how they are interpreted. Alternatively, a theme could be present in some CR reports and then fade out over time. Its overall presence in the data would therefore be weak. However, the observation that this theme disappeared over time might be insightful.

Discourse analysis allows several iterations of data analysis with a different take on the research material (Rose, 2012, p. 215). As Rose (2012) explains:

> "As this coding and interpretation process proceeds, other issues may start to become important to your interpretation, perhaps issues that had not initially occurred to you. Unlike content analysis, this does not mean that you have to halt your analysis process and start again with a revised set of categories. Discourse analysis is much more flexible than that. As new questions occur, prompted by one moment of coding, you can return to your materials with different codes in a second – or third or fourth or twentieth – moment of interpretation. While the Foucauldian framework of discourse analysis is giving you a certain approach to your materials, it is also crucial that you let the details of your materials guide your investigations" (p. 215).

This was an important selection criterion, as several phases of data analysis were conducted to explore the data material on different levels and towards different questions.

Discourse analysis has been used previously to analyse corporate communication (Senkel, 2014; Swales & Rogers, 1995, Cooren, 2004; Alvesson & Kärreman, 2000). Some guidelines on how to conduct discourse analysis are provided in the literature (Antaki et al., 2003; Potter & Wetherell, 1987). One of the most often cited texts on how to conduct discourse analysis is Potter and Wetherell (1987), especially with reference to pages 167-169. In this section, Potter and Wetherell provide helpful guidelines on how to conduct discourse analysis. They suggest, for example, that the process of analysis should be divided into two distinct stages. In the first stage, the research looks for themes and patterns in the data. In the second stage, the themes and patterns found in the data are interpreted.

According to Silvermann (2011), naturally occurring data is considered more suitable for discourse analysis than manufactured research data. Naturally occurring data is data that has not been generated specifically for the research; or, as Silverman (2011) describes it: "Naturally occurring data are collected in the world, and they are created without any research intervention" (Abstract, sentence 2). CR reports, as well as other forms of corporate communication, are considered to be naturally occurring data. They have often been used as material for discourse analysis (Senkel, 2014).

4.3 Visual Methods

Discourse analysis was not the only method used to analyse the data. Visual methods were also used to elicit new understandings of what designed things are doing in the space of CR. While discourse analysis is a rather conventional method to analyse CR communication, visual methods have not been used in combination with discourse analysis in previous research on CR communication. Together, these two methods delivered valuable insights. There is a diverse body of literature that discusses the use of visual methods to interrogate a topic in a research context. In this section some of this literature is reviewed. Literature on visual methods and critical design as a form of inquiry are covered.

Making visible through design as a form of inquiry

There is a body of work that discusses modes of making visible through design in order to critically interrogate issues (Fuad-Luke, 2009; DiSalvo, 2012; Mauri & Ciuccarelli, 2016; Lorber Kasunic & Sweetapple, 2015; Stephan, 2015). This literature points to the potential of design to be mobilised as a form of inquiry. Visualisations generated as part of the analysis are understood to enhance the research process and yield insightful findings (Lorber Kasunic & Sweetapple, 2015). Gwilt and Williams (2011), for example, advocate for visual communication design to be "integrated into a research inquiry at the front end of research, beyond the typical 'reactive' documentation and presentation activities usually associated with visual communication and design" (p. 82). Visualisations as part of the research process "stimulate dialogue, elicit opinion and reveal insights" (Gwilt & Williams, 2011, p. 82). Stephan (2015) discusses how visual methods can zoom in, focusing on particular details. They can also zoom out, showing large scale associations. Design can focus on a micro, meso, or macro level when analysing and communicating matters of concern.

Scholars make a distinction between the role of visualisations to analyse an issue and to communicate understandings (Mauri & Ciuccarelli, 2016). Lorber Kasunic and Sweetapple (2015) make a further distinction when discussing visualisations in a research context. They distinguish between visualisations as part of the analysis, visualisations that document the research process, and those visualisations that communicate research findings. Visual communication that is a final representation of research findings is, to a certain extent, consolidated and complete. Changing or amending this final representation might be difficult. It might require much work and effort to amend it. However, visualisations that are generated during the analysis process can be provisional, unfinished, incomplete, and sketchy. Their purpose is not to communicate, but rather to capture a moment within a dynamic process of interpretation. Their primary role is as a thinking tool for researchers. They might be generated quickly and be actively modified as the thinking evolves. They might change throughout several iterations of making and thinking. A visualisation, as a mode of analysis, might involve low risk and low investment of efforts without compromising its role as a thinking tool. There is a wide range of design research projects that have generated visualisations that sit between inquiry and documenting processes and understandings. Some examples of projects are those reported by Arnall and Schulze (2009), Arnall (2013), Lima, (2011), Martinussen (2013), Johnson (2016), or work presented from various authors at visualcomplexity.com.

There is a growing body of ANT research that engages with visual methods, such as Controversy Mapping, to enhance the analysis and communication of their research. Researchers using Controversy Mapping understand it as a visual form of inquiry (Mauri & Ciuccarelli, 2016). Early ANT work focused on socio-material worldmaking, arguing that the material is part of the social (Callon, 1986; Latour, 1987, 1992, 1999). Current ANT research is more interested in understanding complex political issues (Latour, 2008; Marres, 2015; Venturini, 2010, 2012; Venturini et al., 2015).

This latter ANT research stream uses Controversy Mapping to explore questions such as: Who are the dominant and powerful actors in negotiating an issue? How has the actor-network assembled around an issue? How has an actor-network surrounding an issue changed over time? Controversy Mapping is the visualisation of actor-networks, issue networks, and other modes of information visualisation in relation to an issue. Controversy Mapping draws predominantly on information design and visual communication, often comprising different forms of content analysis[7]. Visualisations that are generated as part of the analysis are understood as exploratory (Mauri & Ciuccarelli , 2016). Mauri and Ciuccarelli (2016) describe Controversy Mapping as "an applied version of actor-network theory" (p. 1). Controversy Mapping visualises aspects of controversies. In the context of ANT, these controversies are also called 'matters of concern' or 'issues.' Actor-networks and their actions in relation to a particular aspect about the issue are captured in these visualisations. The focus of Controversy Mapping is always the issue itself and how various actions and effects of actor-networks shape the issue through their actions.

By making an issue visible, design contributes to the mobilisation of other actors in relation to the issue, by offering ways to explore the issue, to think about it, to form a position towards it. By making an issue visible, trends and correlations can be pointed out and complex information around issues are made intelligible and comprehendible (Venturini et al., 2015; Schoffelen et al., 2015). Different modes of making visible generate different forms of public attention and engagement (Taylor et al., 2014).

Latour (2005a) asks the question "How to make things public?" (p. 14). DiSalvo (2009) poses a complementary question by asking: "How are publics made with things?" (p. 49). DiSalvo proposes that the 'design tactics' of 'tracing' and 'projection' are useful categories when looking at how design addresses issues. While tracing maps an issue from its past to its current state, exploring how it has changed over time, projection positions an issue from the future, showing possibilities

7 Examples of research projects that comprise Controversy Mapping are: mapping controversies (www.mappingcontroversies.net) by Latour and colleagues; issue mapping (www.issuemapping.net) by Marres and colleagues; EMAPS (www.emapsproject.com) by Venturini and colleagues; Rogers & Marres, 2000; Ricci, 2010.

for how things might change. He explains the two tactics through the concepts of 'temporality' and 'discovery.' Temporality positions the issue at a particular point in time. Discovery happens throughout the design process when relevant aspects are discovered. And it also happens when the public engages with the designed thing. DiSalvo (2009) suggests that design uses the design tactics of 'tracing' and 'projection' to generate representatives of issues, which then can gather publics around them to respond to the issue. This framing of how design mobilises publics is of interested when engaging with design projects that intend to mobilise publics. DiSalvo's distinction between 'tracing' and 'projection' offers a language for describing what different kinds of visualisations are doing when 'capturing' an issue.

This overview on literature on visual methods as a form of inquiry informed how the visual methods used in this project were understood and approached. They offered designerly ways to interrogate issues. The primary role of these visualisations was not to communicate, but rather to be a part of the analysis.

Critical design

An engagement with critical design informed how the visual methods were understood. They were not merely used to capture what has emerged during the analysis. They were an active part of the analysis. Critical design is an exploratory design research method as much as it is understood as a design practice. The term 'critical design' is understood as an umbrella term that encompasses different forms of critical design, such as speculative design and discursive design (Malpass, 2012, 2013). Critical design intends to communicate ideas, and to initiate reflection. It is understood as a tool for thinking, one that raises questions towards issues of concern (Dunne, 2012).

Critical design comes in many different forms. Examples of critical design interventions comprise products, visualisations, interfaces, or experiences, just to name a few. They strive towards new perspectives on familiar issues (often in relation to everyday objects or technologies). These new perspectives are teased out by foregrounding currently invisible or backgrounded aspects in relation to the issue. Designers active in the space of critical design (as a mode of research or practice) argue that critical design interventions hold the potential to approach issues in unconventional ways. This can reveal new viewpoints or questions. And by doing so, they can initiate discussion and debate about an issue.

Critical design invites reflection, for example, on the relationships things enter into once they are released into the world. It also invites reflection on the practices around things, and how people in conjunction with things co-perform tasks. Critical design challenges assumptions concerning the purpose or function of a designed thing by developing critical design interventions that comprise a kind of 'para-functionality' (Dunne, 2005). There is a broad range of critical design projects from different disciplines that strive to provide new perspectives on familiar issues from everyday practices to complex political issues. New perspectives are teased out by approaching issues in unconventional ways, which can reveal new viewpoints or questions, and initiate discussion and debate.

Michael (2012a) describes critical design as "crucial in opening up the potential of design to rethink its relation to the object" (p. 172). Michael points to the potential that designed things have to open up new perspectives on issues. By doing so, this new perspective creates possibilities to reframe what is at stake. Our daily engagement with many designed things often renders 'invisible' what has been gained and what has been lost by incorporating 'new actors.' For example, when a 'new' product is used to perform a task, something is gained. Something might be easier, faster, more convenient, or more efficient, for example. Whatever it is, this is probably the reason for incorporating the product in the first place. But while something has been gained, something might have also been lost by using the product. To notice what has been lost is often difficult, not only because the benefits of the product might outshine what has been lost, but also because unintended change might come slowly and quietly. This 'taking for granted' makes for an uncritical everyday engagement with many designed things around us. Objects, interfaces and processes are merely seen as tools without being aware of the performative forces they have in shaping situations, practices and habits. Michael (2012a) sees critical design methods, and the objects they produce, as a suitable strategy for making the invisible visible again. He sees the playful engagement with mundane objects and everyday issues as an opportunity to elicit new associations and perspectives towards issues.

Positioned at the margins of design, critical design is receiving growing attention by academics and design researchers. This is evident in the growing number of conferences and publications engaging with critical design, and in the increase of projects using this approach. Designers working at the intersection of academia and design practice seem especially interested in mobilising this kind of practice (see, for example, the work by Dunne & Raby, 2005, 2013; Sengers & Gaver, 2006; Gaver et al., 2008; Gaver, 2009).

Little work has been done to bring critical design into the commercial arena (Malpass, 2012, pp. 82-83). When companies engage in critical design, it is often used as a method to generate future-oriented design scenarios that lead to innovative product development or idea generation. Future-oriented 'what if' scenarios playfully explore how a certain environment could change in the future. Change could be triggered by various developments, ranging from scientific and technological progress to alternative modes of everyday living. Designers are well equipped to engage in this kind of future speculations as they can translate ideas into materialised forms. Through visualising ideas of the future into two- or three-dimensional things, the consequences of these visions can be better experienced. Future scenarios might speculate about new forms of practices and products, and the kind of society that could emerge out of them[8].

This overview on critical design suggests that it holds the possibility to evoke new perspectives, to invite reflection, and to challenge

8 Examples of future scenarios generated by a corporation are: 1) Philips Design Probes *Visions of the future*, https://www.90yearsofdesign.philips.com/article/67 , last viewed 27 January 2018, or 2) DPDHL's *Five different scenarios of life in the year 2050*, http://www.dpdhl.com/en/logistics_around_us/future_studies/delivering_tomorrow_logistics_2050.html, last viewed 27 January 2018.

assumptions. Michael (2012a) has been quoted for seeing the potential that critical design holds to rethink design's relation to the object. While I agree with Michael, I see the potential of critical design to inform other areas of inquiry. Using critical design to inform visual methods holds the potential to generate interesting tools of inquiry.

4.4 Data Analysis

Four phases of data analysis were conducted in the course of this research project. These four phases are described in sequence through Chapters 5, 6, 7, and 8. Each of these four chapters details a single phase, including a specific description of how the methods described above, were interpreted and applied within that phase. This section briefly introduces these four phases to indicate which methods informed each phase of data analysis, so that the place of each method within the overall pattern of the research process can be grasped.

Phase 1

In Phase 1 of the data analysis I conduct an initial examination of the material, with the aim of gaining a general understanding and overview of the CR reports over the entire period examined. The material examined in this phase is the full set of CR reports, the cover pages, titles, topics covered, terms and visual elements used. Following ANT, these elements are understood as actors within the actor-networks that comprise the reports. In this phase Gillian Rose's (2012) approach to analysing visual material is used in conjunction with discourse analysis. Phase 1 of the data analysis is documented in Chapter 5.

Phase 2

The second phase of the research seeks to identify what ends DPDHL might be seeking to achieve through their CR activities. The CR reports are first scanned for themes that relate to motives for engaging in CR. Once these are identified, Nimmo's (2010, 2011) methodological approach, which combines discourse analysis and ANT, is used. Following Nimmo, the data is examined on two levels. References to verifiable events and activities, and other concrete information are identified in the first level of analysis. In the second level of analysis roles played by these 'factual' elements (or actors) are analysed and discussed for the performative effects they generate within and through the CR reports. Phase 2 of the data analysis is documented in Chapter 6.

Phase 3

In Phase 3 of the data analysis I ask: What kinds of roles are performed by the visual and textual elements within the CR reports? An analysis of the CR reports is undertaken to identify different kinds of action performed within CR reports. Once these are identified, Nimmo's (2010, 2011) methodological approach of examining the data on two levels is used to uncover the different visual and textual actors involved in each kind of action. In this phase, references to real events, activities and concrete information might be embedded within designed things that play a role in narratives of action on CR agenda. Following Nimmo, the first level of analysis identifies actors and actions performed within the CR reports. The second level of analysis discusses the performative effects generated by these actors and actions, in particular their role in communicating narratives of action on CR agenda. Phase 3 of the data analysis is documented in Chapter 7.

Phase 4

Phase 4 is the final phase of the data analysis. In this phase, I explore the role of four designed things through their representations in the CR reports. These four designed things are analysed using ANT concepts and visual methods. ANT concepts are used to unpack how each designed thing can be understood in the context of CR. These ANT concepts offer a language to interpret what designed things are doing in the space of CR. Questions informed by ANT concepts are developed. These questions guide the analysis conducted on the four designed things. A set of visual strategies is developed to bring to view particular aspects of the actions and effects of the designed thing, as represented in the CR reports. Together, these visual strategies generate valuable insight into what these designed things are doing in the space of CR. Phase 4 of the data analysis is documented in Chapter 8.

4.4 Chapter Summary

This chapter introduced the case study corporation selected for this research: DPDHL. It then took a closer look at CR reports as data material, discussing them as strategic and performative. From there, it introduced the approaches used to analyse the CR reports: discourse analysis and visual methods. The particular approaches to discourse analysis and visual methods selected were identified as those appropriate to the ANT theoretical lens adopted for this research. The ways that ANT informed these approaches were outlined, and specific examples of prior research combining ANT with these approaches, were provided. The chapter ended by outlining the four phases of data analysis conducted and how the methods introduced in this chapter have informed the data analysis of the different phases.

5.
Phase One:
A First Engagement with the Data Material

Chapter 5
Phase One: A First Engagement with the Data Material

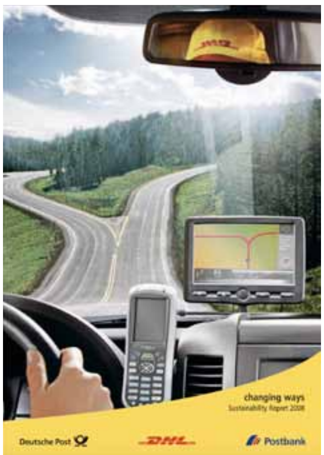
This chapter outlines my initial engagement with DPDHL's Corporate Responsibility Reports (CR reports) and the understandings that arrived from this engagement. It reports on the first examination of the data material. This phase followed Rose's (2012) suggestion to read and look at the data material 'with fresh eyes.' I followed her suggestion to: "try to *immerse* yourself in the materials you are dealing with. Read and re-read the texts; look and look again at the images" (p. 210, italics in original). The outcome of this immersion was a rich initial understanding of the data material, the issues it engaged with, and the designed things that are mobilised within it. These insights are presented below. They report on a number of general observations and the results of some simple coding and counting processes.

As mentioned in the previous chapter, the data material, DPDHL's CR reports 2008 to 2015, were downloaded from the corporate website as PDFs. These PDFs were then printed out. In this first phase of my data analysis, I examined both the hard copies of the printed PDF's and the electronic PDFs on screen. The hard copies were used, as they provided a better overview of each CR report as a whole, its volume, content and structure. The electronic PDFs were also used to study the data, as they sometimes provided a better readability of the texts and small images contained within them. Some of the CR reports were not set in a print layout, but were generated from online content. Those CR reports were better to read on screen. Another advantage of working with the electronic PDFs of the CR reports was that the data could be imported into NVivo10 and an analysis of word frequencies could be conducted. The electric versions allowed to search for certain terms within the data. When working with the CR reports, both the printed and digital versions of the PDF documents were used simultaneously.

5.1 General Displays

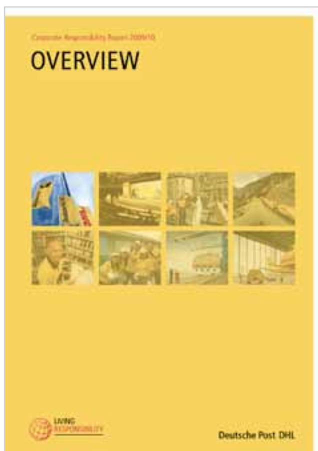
The general display of the nine CR reports was a print layout. They contain page numbers and a table of content. The reader is guided through the content with typographic elements, such as page footers or headers. Headlines, icons and other typographical elements guide the reader through the topics and points made. The exceptions to this are the CR report 2013 and 2014. These two reports were generated from online content. They were not set in a print layout; these two CR reports are not designed to function as a printed document. They do not provide a table of content. The CR report 2013, despite its length of 298 pages, does not have page numbers. How visuals and text are positioned on the page in these two CR reports is computer generated and not set in a print layout. The 2015 CR report converted back to a print layout. The decision to convert back to a print layout is unknown, but could have been directed by foreseeing mandatory requirements to publish reporting on CR activities (see page 56). As shown in Image Set 5.1, the length of the CR reports varies significantly, ranging from 62 to 298 pages.

Image Set 5.1: Cover pages of DPDHL's Corporate Responsibility Reports 2008 to 2015



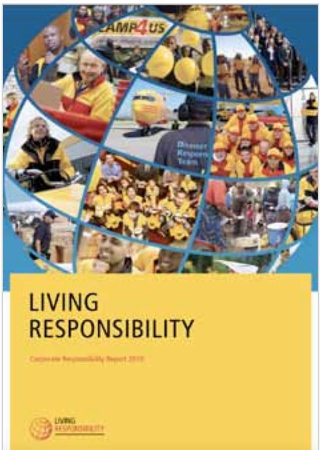
Sustainability Report 2008
Title: *Changing Ways*
62 pages
published appr. May 2008

Sustainability Report 2009
Title: *Changing Ways : Environment, Employees, Society*
58 pages
published appr. March 2009



Corporate Responsibility Report 2009/2010
Title: *Overview*
274 pages
published April 2010

Image Set 5.1: Cover pages of DPDHL's Corporate Responsibility Reports 2008 to 2015, continued



Corporate Responsibility Report 2010
Title: Living Responsibility
246 pages
published May 2011

Corporate Responsibility Report 2011
Title: *We Deliver Responsibility*
88 pages
published May 2012

Corporate Responsibility Report 2012
Title: *Taking on Responsibility Together*
93 pages
published April 2013

Corporate Responsibility Report 2013
Title: *The AND Makes the Difference*
298 pages
published appr. March 2014

Corporate Responsibility Report 2014
No title
125 pages
published appr. March 2015

Corporate Responsibility Report 2015
Title: *Essential : Responsible Business Practice is Essential to the Long-Term Business Success of Deutsche Post DHL Group*
149 pages plus 8 pages appendix
published March 2016

The nine CR reports all mobilise similar rhetorical elements to communicate DPDHL's CR activities and the designed things mobilised within these CR activities. These elements comprise texts, numeric and textual tables, graphs, icons, diagrams and images. They are found in all nine CR reports. This is expected, as they are established elements of corporate communication, which readers understand. The presence of similar rhetorical elements throughout the CR reports enabled me to compare representations of CR issues and responses by DPDHL across the nine reports. Shifts in how a CR issue was approached over time could therefore be identified and analysed. The ways in which designed things within the CR reporting were framed and reframed over time were made more visible by the continuity of use of particular rhetorical approaches and elements. My analysis of these elements will be presented in later chapters.

5.2 Choice of Titles

As shown in Image Set 5.1, the 2008 and 2009 reports were both called *Sustainability Report*. After 2009, its name changed to *Corporate Responsibility Report*. As also shown in Image Set 5.1, most CR reports have been given a particular title, such as *Living Responsibility* or *The AND makes the difference*. The particular title is prominently displayed on the cover page of the CR reports.

The titles of the CR reports appear to frame DPDHL's current strategic direction in relation to CR. For the stakeholder audience, changes in the character of the title are of interest, as they could be viewed as an indicator of how CR is positioned and understood at DPDHL at that time. They might indicate, for example, moments when the corporation is engaged in reframing its boundaries of responsibility. The titles of the CR reports reflect decisions as to how this position should be articulated publicly.

The *Sustainability Report 2008* and *Sustainability Report 2009* have the same title: *Changing Ways.* This title appears to indicate a transition period where DPDHL starts to publicly articulate a position towards CR. In these two reports, first measurable CR targets, such as the reduction of CO_2 emissions by 30%, are announced. These two reports show a shift towards becoming more aware of CR. This observation is in line with Senkel's (2014) research, who describes the time period 2007 to 2009 as a transition period for DPDHL from 'the acceptance' of certain responsibilities towards demonstrating 'active responsible leadership' (p. 55).

Understanding the titles as framing the corporation's current priorities for CR gives weight to understanding CR reports as writing tools that help the corporation to organise itself (Callon, 2002). It suggests that CR reports are used to organise DPDHL's position on CR, and to capture what it is doing in this space. The title of the CR report 2009/2010 *Overview* could be viewed as an example of an interim organising process. This title suggests the conclusion of a reframing phase. This impression is reinforced by some of the changes outlined in the CR report 09/10, compared to the previous reports, such as the new title of the report, from *Sustainability Report* to *Corporate Responsibility Report*, and the re-organising of environmental CR activities (CR report 09/10, p. 7).

5.3 Weighting of Content

Three main topic areas were identified throughout the nine CR reports that specifically relate to the CR issues addressed by DPDHL. These were: 1) Employees, 2) Society, and 3) Environment. Other topics are covered in the CR reports. These, however, do not directly report on CR issues and corporate responses towards them. They cover topics, such as DPDHL's CR strategy, and how it is approached and embedded in the overall business strategy.

To better understand the weighting of the three main topic areas, sections dedicated to each area were identified in the CR reports. The pages dedicated to each topic area in each report were counted and totalled. This enabled me to visualise the weighting given to each main topic area in terms of pages dedicated to it. Of the total 1401 pages comprising the nine CR reports, 54% of pages were devoted to the three main topic areas. In the nine CR reports, 293 pages were devoted to environmental CR issues, that is 21% in total. Employees are the focus on 284 pages, which equates to 20% of the total volume of the nine reports. Society is the focus on 184 pages, which occupies 13% of the content in the nine reports.

The remaining 640 pages (46%) are dedicated to the 'other areas,' including the strategic direction of CR in relation to the corporation's overall business strategy, and the economic impact of the corporation's business operations. The remainder consisted of corporate information, such as the composition of the management board, and other numeric measures relevant to the corporation's CR activities. Table 5.1 shows the weighting of the three main topic areas in each report relative to each other. Based on these weightings, Environment is the main topic area covered in the nine CR reports, closely followed by the topic area Employees.

Table 5.1: The weighting of the three main topic areas in each report relative to each other

5.4 Order of CR Topic Areas in Stakeholder Letters

Each report contains a letter from the CEO to the stakeholders. These letters were analysed to identify which CR topic areas are mentioned, and in which order. The results of this analysis are presented in Table 5.2. It shows that Environment was the main topic. It was mentioned in every stakeholder letter of the nine reports analysed. In six of nine reports, it was mentioned first, before Employees and Society. It should also be mentioned that in all stakeholder letters the reduction of CO_2 emissions was mentioned as DPDHL's main focus of their environmental actions.

Table 5.2: CR topic areas mentioned in the CEO letter to the stakeholders

	1st mentioned	2nd mentioned	3rd mentioned
Sustainability Report 2008	Environment	Employees	Society
Sustainability Report 2009	Environment	Society	Employees
Corporate Responsibility Report 2009/2010	Society	Employees	Environment
Corporate Responsibility Report 2010	Environment	Society	Employees
Corporate Responsibility Report 2011	Employees	Environment	Society
Corporate Responsibility Report 2012	Environment	–	–
Corporate Responsibility Report 2013	Environment	Society	Employees
Corporate Responsibility Report 2014	Environment	Employees	Society
Corporate Responsibility Report 2015	Employees	Society	Environment

5.5 Communicating CO2 Emissions

The results above indicate that DPDHL's first priority in addressing CR was the environmental impact of the corporation's business operations in the timeframe studied. The analysis of the stakeholder letters showed that, within the topic area of Environment, carbon emissions was a focal point. This prompted closer examination of how the issue of carbon emissions was framed in the CR reports. The results of this analysis are shown in Table 5.3.

Table 5.3 shows a shift in framing of the issue of reducing CO_2 emissions. CR reports between 2008 and 2010 present the issue primarily in relation to climate change. In 2011, and onwards, a slightly different framing of the issue can be noticed, where carbon emissions are not so obviously set in relation to climate change. In later CR reports, more positive terms such as 'environmental protection' or 'climate protection' are used when the corporation reports on their efforts to mitigate the environmental impact of their business operations. In the CR report 2013, and onwards, responsibility for reduction of CO_2 emissions is framed as a 'duty of care.'

2008/2009

"We have brought together the initiatives to manage our carbon footprint and our other environmental impacts in our new GoGreen program. At its core is our response to climate change" (S report 2008, p. 19).

"In 2008, we launched our ambitious GoGreen Program to respond to climate change" (S report 2009, p. 14).

2012/2013

"For us, our most effective contribution to the environment lies in the reduction of carbon emissions" (CR report 2012, p. 61).

"As the world's largest logistics service provider, we have a special obligation to minimize the negative impact of our business on the environment" (CR report 2013, p. 176).

The link between issues of public concern, such as 'climate change' and 'global warming,' and the corporation's business operations seems to become less obvious in the language used in the CR reports. Terms that have become touch points within the political debates appear less often in the wording of the later CR reports. The term 'climate change' can

Table 5.3: Mentioning of the terms 'climate change' and 'environmental protection' by CR report

	climate change	**environmental protection**
Sustainability Report 2008	22	2
Sustainability Report 2009	13	4
Corporate Responsibility Report 2009/2010	32	36
Corporate Responsibility Report 2010	20	39
Corporate Responsibility Report 2011	4	49
Corporate Responsibility Report 2012	1	18
Corporate Responsibility Report 2013	3	33
Corporate Responsibility Report 2014	0	23
Corporate Responsibility Report 2015	5	28

be understood as a global risk, a catastrophe waiting to happen (Beck, 2006b). The term can be perceived as a threat of future consequences of past and present actions. The use of the term ‘climate change’ in earlier reports suggests that it was initially a driver for DPDHL to engage with sustainability issues.

5.6 Chapter Summary

This chapter reported on my first engagement with the CR reports. I conducted this first phase of analysis to get a deeper understanding of the material I am working with. This engagement revealed that the CR reports contain different levels of information and different kinds of rhetorical elements. They contain various representations of designed things, and give insight in how designed things are mobilised in the space of CR. Looking at a longer time period of published CR reports enabled me to notice shifts over time, which provided insights into how CR at DPDHL, and the designed things within it, have developed over time.

In this first phase, attention was paid to the visual style of the data, the language used, and the visual elements that found their way into the CR reports. Attention was also paid to the order in which certain information appeared in the CR reports. Sustainability was identified as DPDHL’s focus within their portfolio of CR activities. In the CR reports, an emphasis was given to the mitigation of carbon emissions. This issue was presented in various ways, and through an array of designed things that are mobilised to address it.

This first phase of the research revealed different levels of information contained in the CR reports. These different levels of information offer different ways in which the data can be looked at and analysed. Having generated a good overview of the data material, several more focused analyses were conducted. These followed Rose’s (2012) recommendation: “Having familiarised yourself with your materials, some slightly more systematic methods might be useful” (p. 210). These more structured analyses, and the understandings that emerged from them, are presented in the next three chapters.

6.
Phase Two: Designed Things are Mobilised to Achieve Different Ends

Chapter 6
Phase Two: Designed Things are Mobilised to Achieve Different Ends

This chapter presents understandings emerging from my second phase of engagement with the CR reports. The previous chapter presented a set of general observations about the CR reports. In this chapter, a more systematic approach with a clear focus was conducted. This focus was DPDHL's reasons for engaging with CR. My engagement with the literature on design and CR pointed to different ends for why corporation's invest in CR. This observation prompted me to raise the question: What are the ends that drive CR? This chapter seeks to provide an answer to this question. It will also unpack how designed things are mobilised to achieve these ends. Paying attention to how designed things facilitate these ends starts to reveal the roles of designed things within the space of CR.

In this phase of the research, I adopted Nimmo's (2010, 2011) methodological approach, where data is examined on two levels. The first level focuses on the content and information provided in the reports; reporting on real events and developments – which might be more or less accurate. The second level attends to reasons for engagement with CR, as they appear within DPDHL's CR reports. A combination of methods was used to identify themes in the data. This involved going manually through the CR reports along with using NVivo10 for coding and searching purposes.

6.1 Different Ends for why DPDHL Engages with CR

A close engagement with the content of the nine CR reports led to the identification of six ends in response to the question: What are the ends that drive CR? These ends are:

1. Responding to stakeholder expectations
2. Controlling the frame of responsibility
3. Framing CR issues as shared responsibility
4. Demonstrating leadership and power
5. Communicating corporate activities in the best possible way so that they contribute to an image of responsible business practice and good corporate citizenship
6. Getting future-ready

The first end listed above is concerned with responding to expectations. The second and third ends deal with the negotiation of responsibilities. The fourth and fifth are concerned with the corporate image. The sixth end relates to carrying the corporation into the future. Each end is discussed in turn below.

1. Responding to stakeholder expectations

In the CR reports, some of the activities reported are aimed at gathering information concerning stakeholder perceptions about DPDHL's scope of responsibility. DPDHL uses various forms of exchange with stakeholders and issue experts to better understand perceptions of the corporation's responsibilities. Examples of dialogue formats are DPDHL's annual Corporate Responsibility Days and various stakeholder surveys. Insights from DPDHL's dialogue with different stakeholder groups are explicitly referenced in the CR reports as informing aspects of the corporation's CR strategy (CR report 2015, p. 20; CR report 2013, p. 18). The dialogues with stakeholders and issue experts are also referenced in discussions concerning possible risks, opportunities and trends that lead to the identification of CR issues for DPDHL.

> "Through ongoing dialogue with our stakeholders and as part of our resilience management process, we systematically identify opportunities, trends and challenges. This enables us to develop new business areas and markets, which in turn helps us improve our corporate responsibility performance while minimizing financial, environmental and social risk" (CR report 2015, p. 71).

References to stakeholder dialogue are largely absent in the CR reports 2008 and 2009. In these two reports, DPDHL expresses a need to improve its engagement with stakeholders.

> "We strive to integrate social concerns into our operations and to improve our interaction with stakeholders" (CR report 2009, p. 38).

CR reports between 09/10 and 2013 report on communication with stakeholder and issue experts. However, few concrete examples are provided in these reports (see, for example, CR report 09/10, p. 52). In the CR reports 2014 and 2015, many concrete examples of different dialogue formats are provided (CR report 2015, p. 24-27; CR report 2014, p. 35-37). Exchange with stakeholders and issue experts is particularly present.

> "The ongoing dialogue with our stakeholders is critical to understanding and effectively addressing the social and business challenges considered most relevant for our business" (CR report 2014, p. 34).

This sequence suggests that stakeholder engagement at DPDHL has grown over the years. It also suggests that stakeholder engagement increasingly shapes how DPDHL understands its responsibilities. In Chapter 2, CR was discussed in relation to reframing corporate boundaries of responsibility. The CR reports position this reframing activity as influenced by stakeholder feedback and discussions, together with corporate research into trends and possible futures.

For DPDHL to suggest that their CR activities are informed by stakeholder expectations, they need to demonstrate that they have listened to stakeholders. Only then can an atmosphere of trust be established where CR efforts are being perceived as genuine, open, and collaborative. Cultivating this image is important to establishing the grounds for a language of 'shared responsibility.' The moral authority gained by successful cultivation of this identity is valuable in establishing a leadership role. Thus actions that help to establish trust, and to convey an open and collaborative corporate image, go hand in hand with representations of considered analysis, rational actions and other leadership gestures.

A good example of a CR initiative that was initiated by customer expectations is the GoGreen program. The initial impulse for GoGreen was triggered by customers requesting more sustainable logistic solutions in early 2000. In this instance, stakeholder expectations prompted DPDHL to re-assess issues that had been considered externalities, to move them into the frame of corporate responsibility. 17 years later, GoGreen is the centre-piece of DPDHL's environmental protection program.

Another example of stakeholder initiated development is the Carbon Dashboard. A business customer, Recreational Equipment, Inc., expressed the need for a customised product to assist in the calculation of their carbon footprint, and this product was subsequently developed within DPDHL's CR activities as a key service within the GoGreen program (CR report 2010, p. 93). These examples evidence a link between what stakeholders request, especially customers, and the responses generated by DPDHL to fulfil these expectations.

> "In 2013, we continued to develop our corporate responsibility strategy – to further intertwine corporate responsibility and business success, and to develop more systematic ways to ensure that our actions as a company respond to the interests and expectations of our internal and external stakeholders" (CR report 2013, p. 32).

Stakeholders have diverse priorities and interests in relation to CR issues (Maignan & Ferrell, 2003). They have different opinions on how CR issues should be addressed. Stakeholder expectations and preconceptions concerning what is at stake within the different issues arise from their particular positioning within ideological and practical traditions and trajectories (Stewart, 2015, p. 283). CR serves as a space in which a number of responses can be offered to address different stakeholder expectations regarding CR issues. A range of designed things can offer different approaches to addressing a CR issue. DPDHL's different responses towards mitigating carbon emissions illustrate this.

The CR reports evidence that expectations from governmental actors are addressed through DPDHL's participation in larger discussions on international emission calculation methodologies for the logistics industry (CR report 2015, p. 77; CR report 2014, p. 108). Expectations of customers are addressed through moves to provide more sustainable products and services in relation to carbon emissions. Business partners might be met by the development of platforms for the sharing and exchange of information. All of these actions taken to address expectations of stakeholders are documented in the CR reports in order to advertise the corporation's willingness to respond to issues raised.

2. Controlling the frame of responsibility

There is another way in which the corporation's engagement with stakeholders can be viewed. The representation of CR priorities and activities in the CR reports may act to manage stakeholder expectations. If the CR reports articulate what is realistic and achievable, from DPDHL's perspective, they direct expectations to these achievements. The CR reports can be seen as acting to negotiate what DPDHL's responsibilities are, and what they are not. In this way, expectations between DPDHL and their various stakeholder groups are aligned. CR initiatives could be specially designed to keep expectations concerning responsibilities under the corporation's control.

In Chapter 2, framing was discussed as a process of determining what is understood to sit within the frame of corporate responsibility, and what is outside (Callon, 1998). A distinction was made between two different approaches in relation to framing. The first approach assumes that "framing is the norm and overflows are the leaks" (p. 250). In this approach, a constant framing and reframing makes an effort to keep overflows to a minimum. The second approach assumes that "overflows are the norm: framing is expensive and always imperfect" (p. 252). In this approach, overflows are expected and no attempt is made to minimise them in advance. Understanding CR as controlling the frame of responsibility aligns with Callon's first approach mentioned above. It suggests that DPDHL has a rather proactive approach towards managing potential externalities and overflows from their corporate actions.

3. Framing CR issues as shared responsibility

DPDHL negotiates its responsibilities further by framing them as shared responsibilities between DPDHL and other actors. The theme of 'shared responsibility' can be found in the CR report 2010, and onwards (see, for example, CR report 2010, p. 14; CR report 2011, p. 47, p. 52, p. 62; CR report 2012, p. 59; CR report 2013, p. 222, p. 229; CR report 2014, p. 5, p. 25, p. 32; CR report 2015, p. 5, p. 78, p. 105, p. 107). Customers and business partners are asked to join forces to address sustainability issues. They are asked to become more aware of CR issues, and to contribute to their mitigation. In this way, part of DPDHL's identified responsibilities is passed on to others. Mitigating CO_2 emissions, for example, is framed as a shared responsibility. DPDHL's customers, suppliers and subcontractors are asked to join forces in addressing certain CR issues. A number of DPDHL's CR initiatives to mitigate carbon emissions require contributions from other actors. Different strategies are used by DPDHL to engage different stakeholders. The participation of customers is presented as voluntary, whereas the participation of suppliers and subcontractors appears less voluntary. Shipping transportation subcontractors, for example, are selected based on DPDHL's 'Green Carrier Scorecard.' The Green Carrier Scorecard evaluates the subcontractor's carbon emissions and other criteria, such as transparency, cooperation and engagement in relation to environmental issues (CR report 2015, p. 77).

> "We also want to collaborate with stakeholders to address current and emerging social and business challenges. This is why the systematic involvement of our stakeholders is so important to us" (CR report 2013, p. 44).

> "Through our GoGreen products and services, our customers will remain empowered to choose for greener logistics in order to jointly reduce carbon per transported good" (CR report 2010, p. 63).

> "We want to involve our subcontractors in our decisions and activities right from the start. We work alongside our transportation subcontractors in initiatives to reduce fuel consumption and lower greenhouse emissions" (CR report 2015, p. 77).

Designed things participate in these negotiations between voluntary and less voluntary participation by various actors. In Chapter 3, I introduced the notion that the script of a designed thing shapes actions of other actors. The script, or plan of action, proposes a program of action for how the designed thing will be used (Akrich, 1992; Latour, 1999). The notion of prescription builds on this. However, rather than suggestion, prescription demands a certain kind of interaction between the designed thing and its user. Participation of actors can be shifted by redefining scripts and prescriptions of designed things. Translating this to the context of CR suggests that designed things are interwoven in making actors address CR issues in certain ways. Designed things, and their scripts, shape how certain aspects of responsibility are delegated to other actors.

Breeze (2012) suggests that emphasis placed on shared responsibility in the context of a corporation's business operations shifts the focus away from individual responsibility to group responsibility. She argues that "the focus on group membership tends to sidestep individual responsibility and place the onus on the sector in general, or on the regulators" (p. 11). Similarly, Beck (2006b) considers the corporation's delegation of responsibility to other actors as a predominantly rhetorical tool, suggesting that "the appeal to 'responsibility' is the cynicism with which the institutions whitewash their own failure" (p. 336). In addition to the points raised by the two authors above, framing CR issues as shared responsibilities also enables DPDHL to control its frame of responsibility. This means that they decide on what aspect of the CR issue should be addressed and how they should approach it. It also enables them to suggest how other actors should approach certain CR issues.

4. Demonstrating leadership and power

As part of their CR reporting, DPDHL announced the intention to become a "benchmark for sustainable business" (CR report 2014, p. 1), and to become a "role model" (CR report 2015, p. 127). These announced intentions position DPDHL to take a leadership position in the space of CR, at least in the logistics sector.

> “We’ve been leading the way in green logistics since 2008, when we became the first logistics company to set a climate protection target” (CR report 2015, p. 105, Katharina Tomoff, Head of Shared Value).

This self-positioning of DPDHL as a leader also becomes visible in their political engagement as represented in the CR reports. DPDHL’s size and market position means it already has a strong political voice. Their proactive approach to addressing selected CR issues can be seen as a performance of their claimed leadership role. This positioning enables DPDHL to assert power and competence when discussing CR issues and the distribution of responsibilities between the various actors they have assembled as partners in relation to a CR issue. The development of emission calculation methodologies for the logistics industry is an example of a CR issue that DPDHL approaches proactively (CR report 2015, p. 15 & 77; CR report 2014, p. 14). This CR issue requires agreement on valid measurement and evaluation methods. How emissions are measured and evaluated has consequences for both compliance practices and the emission reductions effected. Being perceived as politically active in the discussions on certain CR issues enables DPDHL to have some control over the framing of their own and other actors’ responsibilities towards CR issues.

DPDHL represents their engagement with CR as shaped by political interests (CR report 09/10, Environment, p. 38; CR report 2010, p. 55-56, p. 104; CR report 2011, p. 5; CR report 2015, p. 28). This positioning is most present in the CR reports 09/10 and 2010. Mobilising CR to shape the corporate political agenda has been noticed by researchers. These researchers suggest that CR activities are increasingly transformed by the political agenda of corporations. There is a growing body of work that examines this trend (Fisher & Grand, 2012; Morsing & Roepstorff, 2015; Scherer & Palazzo, 2011). Fisher and Grand (2012) suggest that, in some cases, ‘Corporate Social Responsibility’ could be re-labelled as ‘Corporate Political Responsibility’ to emphasise its political dimension. Scherer and Palazzo (2011) stress that, at a time when nation-states seem to struggle to offer more than soft guidelines and regulations towards business practices, global networks and alliances seem to try to address this gap: “International organizations, civil society groups, and private businesses in cooperation with state agencies, or without their support, have started to voluntarily contribute expertise and resources to fill gaps in global regulation and to resolve global public goods problems" (p. 903). Scherer and Palazzo present the political role of corporations as positive. However, they do point to the dilemmas raised by this new role. Governance is (predominantly) set up to serve public interests, while corporations are driven by private interests. These different interests might lead to a conflict of interest when approaching public issues.

As discussed in Chapter 2, many authors suggest that the political power of a corporation, in particular multinational corporations, has grown. As a consequence, corporations are perceived to be powerful political actors in networks that negotiate public issues (Castells, 2008; Maak, 2009; Senkel, 2014; Venturini, 2012). These authors point to the power that corporations have to either encourage change or to hold onto existing systems of economic practice. With the growing political power of corporations comes the risk this power will be misused in the pursuit of corporate interests.

Hennig (2015) found a contradiction between the ethical claims made by corporations and their activities. Edis (2015) reports that nearly half of the world's 100 largest corporations hinder legislation to address climate change, and nearly all of them are members of industry associations that lobby to minimise action to mitigate climate change. These kinds of actions are often in contrast to the stated CR objectives of these corporations. Edis (2015) concludes that corporations are "profit making legal constructs," not "moral beings" (Para. 5). The points raised by these authors above should be considered in relation to DPDHL's claimed leadership role in CR. It must be kept in mind that different political ends may be at play when corporations assume leadership roles in relation to CR issues.

5. Communicating corporate activities in the best possible way so that they contribute to an image of responsible business practice and good corporate citizenship

Corporate engagement with CR not only comprises planning and implementing CR actions, but also comprises the evaluation and communication of these activities (CR report 2015, p. 20). In fact, these two latter activities seem to occupy a large part of DPDHL's engagement with CR. The CR reports present many CR activities that are dedicated to evaluating and communicating corporate action on CR. These activities are aimed at providing feedback and transparency. However, they also play a role in brand image and reputation management.

> "Our environmental protection program plays a role in ensuring the sustainability of our company by fundamentally changing the way we do business. These changes help reduce our dependency on fossil fuels, improve our efficiency, and reduce our costs. They also enable us to open up new markets and business opportunities, help our customers achieve their own environmental goals and as a result, ensure that Deutsche Post DHL is perceived as an environmentally conscious company" (CR report 2011, p. 47).

Understanding CR and its related designed things as participating in shaping corporate identity allows recognition that some designed things lean more towards private interests than public interests. In the CR reports, efforts can be noticed to portray DPDHL as a responsible and innovative corporation. Certain CR activities, and the designed things mobilised within these activities, are used to evidence this claim. Designed things play a role in enabling the corporation to present itself in a good light, by being able to add positive and ethical anecdotes to the corporate narrative.

DPDHL's corporate narrative is presented differently to different audiences. When looking at the different kinds of corporate communication published by DPDHL, it is noticeable that CR activities and their rationales, are framed according to the intended readership. For example, renewing airplanes as part of the corporate fleet was justified as improving the fleet's environmental performance in the CR report 2015 (p. 16, p. 103). However, replacing older aircrafts with newer ones was justified in terms of financial benefits in the corporation's annual reports (DPDHL annual report 2015, p. 28; DPDHL annual report 2014, p. 26). This evidences that DPDHL's CR reporting is strategic in what and how it communicates through the different facets of the corporate narrative.

Scholars suggest that corporate communication is key to managing the corporate image (Windolph et al., 2014; Knights & Morgan, 1991). Thompson's (2005) notion of the 'new visibility' is helpful in understanding the necessity for managing the corporate image through communication. Thompson argues that the reputation of powerful actors, such as corporations, has become more fragile due to the flows of information on (social) media channels. Christof Ehrhart, Executive Vice President Corporate Communications & Responsibility at DPDHL references this trend with the term "Hyper-Transparenz"[1] (Para. 7). Thompson (2005) points to the necessity of managing this new visibility by actively shaping how others might see you and your actions.

Audiences for corporate narratives expect that claims will be supported by 'evidence,' such as achievements and measurable outcomes. The CR reports seek to validate tools and methods used to calculate CR responses by reference to recommended reporting standards (CR report 2014, p. 123; CR report 2013, p. 221; CR report 2015, p. 124). Evaluations and rankings of DPDHL from external rating agencies are another form of evidence provided. Positive evaluation by external actors are used to suggest effectiveness of DPDHL's CR initiatives (CR report 2015, p. 33). These evaluations serve as multipliers of the corporation's public image (CR report 2013, pp. 51-52; CR report 2014, p. 22).

1 Interview with Christof Ehrhart, Executive Vice President Corporate Communications and Corporate Responsibility at DPDHL published on 27 October 2014, http://prreport.de/home/aktuell/article/8945-ich-bin-schrittmacher-nicht-mahner/, para 7, last viewed 27 January 2018.

6. Getting future-ready

A close look at the data suggests that a possible driver for DPDHL's engagement with CR issues is to secure the corporation's existence into the future by re-organising itself. Addressing potential risks, before they become liabilities, and developing strategies to effectively leverage off trends and opportunities, is a strategy to secure the future existence of the corporation.

> "The goal here is to combine sustainability with profitability" (CR report 2014, p. 32).
>
> "Responsible business practice also means looking to the future, anticipating opportunities and risks, and understanding their potential impact on our business" (CR report 2014, p. 5).
>
> "The future belongs to companies who embrace Corporate Responsibility as an integral part of their business model" (CR report 2011, p. 6).

Latour (2013) is helpful in explaining why the corporation has to be re-organised into the future. Latour explains: "Contrary to the nature of celestial bodies, there is no inertia at all in an organization. But if you stop carrying it along: it drops dead" (p. 41). He continues: "to organize is always to *reorganize*. The little prefix "re" is there to remind us of the gap which is always yawning (or smiling) at us between *time t* and *time t + 1*" (p. 42, italic in original). Latour points to a constant process of organising and re-organising corporate actions in order to keep the corporation alive. Continual re-invention is required to keep pace with the change taking place in the context in which the corporation operates. An engagement with CR issues is one approach to managing the ongoing requirement to re-organise corporate actions. CR provides a rationale for activities that will help the corporation to translate itself into the future; to re-organise itself. CR enables the corporation to engage with change, and to translate this engagement into tangible actions within a business context.

> "[Eco-friendly GoGreen products and services] help us to open new business opportunities. At the same time, innovative solutions enable us to increase our productivity, lessen our dependence on fossil fuels and help us reduce costs" (CR report 2013, p. 33).

Designed things play a key role in enabling the corporation to engage with the future. An example is DPDHL's engagement with electric vehicles and e-mobility. Part of DPDHL's engagement with electric vehicles is in Research and Development (R&D). With this R&D engagement comes a certain level of knowledge and expertise in this area. Knowledge and expertise in relation to e-mobility are framed around three different ends: 1) to provide a competitive advantage for DPDHL, 2) to get the corporation future-ready, and 3) to demonstrate responsible corporate citizenship. In the CR reports, this is done by positioning e-mobility as a technology that will gain importance in the future. It is described as a technology that will become more established in the transport industry. E-mobility is also framed as an opportunity to reduce fossil fuel dependencies. An R&D engagement with electric vehicles positions DPDHL as ready to address this change. It does this by raising awareness of risks and opportunities in this area. It also does this by developing ideas and approaches on how to respond to these challenges. In other words, this is an example of a CR activity that enables DPDHL to translate itself into the future. The R&D investments described above contribute to making DPDHL future-ready. They generate understandings and insights necessary to make informed decisions about which risks to be aware of, which opportunities to pursue, and which trends to leverage off. This suggests that CR can be understood as a sphere of corporate action where future-directed technologies and approaches, as well as future-directed products and services, can be explored.

> "Pilot programs [of eco-efficient vehicles] provide valuable insights into the newest technologies and their suitability for use in our operations and help us develop and hone our technology strategy" (CR report 2012, p. 65).

> "Our carbon efficiency measures and eco-friendly GoGreen products allow us to uphold our responsibility to society and the environment, create added value for our customers and strengthen our own market position" (CR report 2014, p. 97).

An engagement with CR issues is also positioned as advancing DPDHL's competitive position. The R&D engagement with electric vehicles is framed to offer opportunities for profits and growth. The CR issue of carbon emissions is framed as an opportunity to explore new business opportunities arising from this issue. The mitigation of carbon emissions offers opportunities to re-assess and modernise corporate processes and practices. It also seems that R&D engagement with e-mobility is mobilised to rejuvenate the corporate image, by associating the corporation with innovative and future-oriented design. In fact, most CR activities perform similar roles. The effects generated by their performance include representation of DPDHL as a proactive and responsible corporation.

6.2 A Definition of CR Considering Corporate Ends

Above I identified a number of corporate ends that appear to drive DPDHL's engagement with CR. I also presented how designed things participate in action to achieve these ends. The ends presented suggest that CR needs to be understood within the corporate context within which it is operating. The corporation engages with different kinds of risk/benefit assessments to secure its future existence. CR is one of many corporate activities that help the corporation to be competitive, to extend its power, to assess risks and opportunities, and to translate the corporation into the future. CR is engaged with formulating, initiating, monitoring and advertising actions taken by the corporation to address CR issues. CR actions may be a sincere attempt to mitigate a CR issue. Alternatively, it may be an attempt to mitigate the impact of the issue on the corporation. Most likely, it is a mixture of the two.

In Chapter 2, a definition of CR was provided. This was the Commission of the European Communities' definition published in 2001: "[CR is] a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (cited in Dahlsrud, 2008, p. 7). Based on the different corporate ends presented earlier in this chapter, an alternative definition is offered. This is: CR is a corporation's strategic engagement with the risks and business opportunities posed by matters of public concern, in order to mitigate risk, strengthen the brand and carry the corporation into the future. This definition has a different take on CR. It emphasises its strategic dimension. It also emphasises that, while addressing concerns might be voluntary, an engagement with public concerns seems necessary to carry the corporation into the future.

This alternative definition points to the dimension of corporate 'translation' that is possible in the space of CR. Translation is a central concept of ANT. Law (2009) refers to the translation of a word from one language to another. He describes the process of translation as making something 'equivalent,' and at the same time 'shifting' it. For Law, translation is about 'moving' and 'changing' terms (p. 144). The concept of translation is usually understood as the re-delegation of a script, or a plan-of-action, from one actor-network to another (Latour, 1992, 1999). For example, a script for the distribution of packages may be delegated to a fleet of fossil fuel vehicles, but this script can be re-delegated to an electric powered fleet. A corporation that reconfigures its actor-networks in order to ensure that it will be able to continue to fulfil its aim has translated itself in order to function in a new environment. Thus the corporation translates its actor-networks from a current world to a new world – that is, the future. Bringing this thought back to the definition of CR suggested above, it emphasises that CR enables the corporation to translate itself into the future.

6.3 The Tensions between Public and Private Interests

Earlier in this chapter, I suggested that CR can be understood as a space where public interests compete with private interests, and where these different positions or interests are negotiated. The concept of the Quasi-Object (Serres, 1982) is helpful to discuss CR, when understood in this way. For Serres (1982), the Quasi-Object is the main actor that is being acted towards. It is the focal point of the actor-network; other actors assemble around it. The engagement with the Quasi-Object brings actors together. The Quasi-Object is nothing without its relationships to other actors. The Quasi-Object exists through its relationships with these other actors. It is the reason for why other actors gather. It also defines the relationships between those actors. An issue, a matter of public concern, can be a Quasi-Object. It brings various issue stakeholders together to act towards it.

When corporations claim to act on behalf of public interests, corporate actions are often framed as a shared value approach, where value is achieved for both the corporation and the public, or other partners to the action (Porter & Kramer, 2011). In Chapter 2, it was suggested that issues grow out of public concerns (Callon, 2005: Spinosa et al., 1987). This also applies to CR issues. That is, CR issues develop out of public concerns. CR, especially when understood as a shared value approach, can be viewed as attending to both the corporation and the identified issue (Carroll, 1991, 2016). But that does not mean that the corporation places public interests before their own interests. It only suggests that it considers both interests and tries to find a solution that addresses both of them.

Actor-networks are permanently in flux and ever evolving. Similarly, the relationships between actors are never settled and fixed (Law, 2009). In Chapter 2, corporations, especially large multinational corporations, were described as powerful actors that participate in the negotiation of public issues (Beck, 2006a; Maak, 2009). The 'new public sphere,' equiped with new kinds of technologies for exchange and public exposure, enables public actors to participate in these negotiations (Castells, 2008). The new public sphere creates a space in which issues are discussed and power dynamics are contested. Different actors assemble to negotiate positions towards an issue of public concern. This issue can be framed as the Quasi-Object that brings these actors together.

The concept of the Quasi-Object is useful to understand the dynamics created by the negotiation of different interests in relation to an issue and how it is approached by a corporation. There might be corporate actions that are in service of both; that is, the public issue they are concerned with, as well as the corporation they are acting on behalf of. However, there might also be corporate actions where a decision has to be made to favour the public issue or the corporate interests. In these cases, the corporation competes with the issue to be the Quasi-Object. In these instances, one of them is given less priority and is asked to serve the other. For some CR actions, the issue might be the Quasi-Object; for other CR actions, it might be the corporation and its interests. Designed things that are mobilised for the former act primarily towards mitigating the issues. Other designed things in the space of CR, however, might be primarily mobilised for corporate interests, such as getting the corporation future-ready, and controlling its frame of responsibility.

6.4 CR within an Alternative Framework

Throughout this chapter, I have discussed CR in relation to negotiating boundaries, framing responsibilities, and responding to matters of concern. CR was described as a space where public issues and private interests come together and are negotiated by different actors. CR was described as a space that brings together different actors. This space holds the potential to be understood as a 'cosmopolitical' framework. Stengers (2005) describes her cosmopolitical proposal as intending "to provoke thoughts" (p. 994), "to 'slow down' reasoning and create an opportunity to arouse a slightly different awareness of the problems and situations mobilizing us" (p. 994). Her cosmopolitical proposal aims "to create a space for hesitation regarding what it means to say 'good' " (p. 995). It aims to initiate "a passing fright that scares self-assurance" by prompting the question "What are we busy doing?" (p. 996).

CR holds the potential to be understood within a cosmopolitical framework when it is dedicated to the difficult work of constructing a world within which the interests served by a corporation and the interests of broader publics can be negotiated (Latour, 2004, p. 457). However, the tension between public and private ends render the success of these negotiations as limited, local and temporary.

Sloterdijk (2005) suggests that a democratic atmosphere is essential for any cosmopolitical project. This is an atmosphere in which different publics come together to discuss the issue, its responses and consequences. Bonsiepe (2006) describes democracy as "participation, so that dominated citizens transform themselves into subjects opening a space for self-determination" (p. 29). The notion of a democratic atmosphere is core to the cosmopolitical idea, in order to collectively rethink issues of public concern (Stengers, 2005; Latour, 2005a; Sloterdijk, 2005). A democratic atmosphere holds the potential to encourage discussion about an issue. This is important because "through discourse, a new point of reference is created, meaning is created, and action becomes possible" (Fairhurst, 1993, p. 344, cited in Swales & Rogers, 1995). Or as Dobers and Springett (2010) explain, drawing on Foucault (1977): "discourses are constitutive and productive: they construct reality" (p. 63). A critical engagement with CR not only holds the potential to re-think the issues it addresses. It also holds the potential to re-think the actor-networks in which the issue is embedded. As Wilkie and Michael (forthcoming) suggest: "when political actors interact, they can co-become in the process reformulating not only their own interests, but also the very point of the 'cosmopolitical event.' " (p. 5)

The character of what is achieved in the space of CR depends strongly on public involvement in critically examining corporate actions. How useful is hyper-transparency, big data and information overflow, if what is made public is not critically evaluated. Corporations often invite public engagement with their CR activities. However, corporations are often involved in selecting those external actors that evaluate their CR actions. This is problematic, as the corporation monitors who is included in the discussions. This may or may not include the participation of various concerned or affected public stakeholders. If the dominant engagement with CR remains within the corporate sphere, then public interests struggle to make headway against private interests in the space of CR (Fifka & Reiser, 2015; Edis, 2015). Marres (2005) suggests that shifting issues outside of their established site of engagement opens up new possibilities for how issues can be interrogated and understood. New aspects can be made visible. Corporations seek to control the site of engagement with an issue by addressing it in the space of CR. However, public interest actors do not need to accept this as the site of engagement. Public actors can debate the issue in the public sphere, if it matters to them. In this way the corporate aim to control the discussion on a particular issue is always open to be contested.

The territory assigned to CR operates at the public interface of groups serving predominantly private interests. CR activities strive to establish the conditions for negotiating the impact of corporate action in the world. CR is a response to (or anticipation of) issues raised in the public sphere, arising from negative externalities of corporate activity. Designed things negotiate relations between public and private values and interests, which are often diametrically opposed. As each interest group seeks to expand its operative territories, the different positions either cooperate or compete. Where there is a conflict of interests, the options are to negotiate or to wage war (whether overt or covert).

6.5 Chapter Summary

This chapter presented understandings emerging from the second phase of data analysis. The analysis of the CR reports was concerned with the question: What are the ends that drive CR? This chapter provided an answer to this question. It was suggested that corporations engage with CR as a response to stakeholder expectations and to control their frame of responsibility. Corporations also engage with CR as it enables them to frame CR issues as shared responsibility and to demonstrate leadership and power. An engagement with CR is also used to communicate corporate activities in the best possible way, so that they contribute to an image of responsible business practice and good corporate citizenship. CR also offers corporations different modes to get future-ready.

Based on these understandings, a definition of CR was offered. This was: CR is a corporation's strategic engagement with the risks and business opportunities posed by matters of public concern, in order to mitigate risk, strengthen the brand and carry the corporation into the future. This definition differs from more established definitions of CR, as it emphasises CR's strategic dimension. It also emphasises that CR is understood as necessary to carry the corporation into the future. Finally, two theoretical concepts were discussed in relation to CR: the Quasi-Object (Serres, 1982) and the Cosmopolitical Proposal (Stengers, 2005). Understanding CR through these two concepts helped to further unpack how designed things are mobilised in the space of CR, and how they are entangled in different public and private ends.

7.
Phase Three: On the Roles of CR Reports

Chapter 7
Phase Three: On the Roles of CR Reports

This chapter presents understandings emerging from my third phase of engagement with the CR reports. The previous chapter addressed the questions: What are the ends that drive CR? When discussing the ends for why corporations engage with CR, it was noted that actions and effects of designed things contribute to achieving these ends. It was also noted that designed things play different roles, they are mobilised in different ways. This raises questions such as: What kinds of roles are performed by the CR reports themselves? How do they shape the space of CR? And how are information and narratives presented within the CR reports? This chapter explores these questions.

In this phase of the research, I again adopted Nimmo's (2010, 2011) methodological approach, where data is examined on two levels. The first level focuses on the content and information provided in the reports; reporting on real events and developments – which might be more or less accurate. The second level attends to the roles played by CR reports and how they are performed. Attention was paid to the kinds of information presented in the CR reports as providing mechanisms and interfaces for engaging with CR. A combination of methods was used to identify themes in the data. This involved going manually through the CR reports along with using NVivo10 for coding and searching purposes.

7.1 Different Roles Performed by CR Reports

CR reports are designed things acting in the space of CR. They are charged with a number of roles. A close look at the information and narratives assembled in this type of corporate communication suggests that CR reports perform six main roles. CR reports:

1. evidence actions that have taken place
2. articulate steps towards desired ends
3. provide insights that inform decision-making
4. provide insights that enable actions
5. demonstrate the corporation's competitive position
6. shape the brand identity

The first role listed above is concerned with past actions. Roles 2 to 4 relate to actions in the future. Roles 5 and 6 deal with the brand identity. Each of these six roles is presented in turn below.

1. CR reports evidence actions that have taken place

The CR reports make statements and provide textual and visual representations of actions that have taken place. There is often an emphasis on how these actions have delivered positive outcomes. Past actions are appraised through measurement of performance against goals. An example is the visual representation of reduced emissions since 2007 shown in Image 7.1.

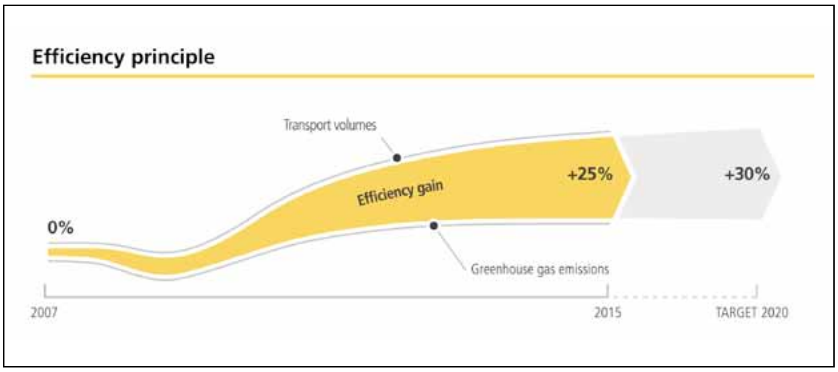


Image 7.1: Efficiency principle image from CR report 2015, p. 107

Of interest in this visual representation is that the reduction of carbon emissions has been visualised as 'efficiency gain.' A reduction has been transformed into an accumulation of efficiency gain to suggest a positive achievement.

Another example is the emissions offset through DPDHL's climate-neutral delivery service (CR report 2014, p. 118). These results are framed as achievements. Numbers, percentages and ratios, for example, are reported. Achievements over time are reported, typically showing upward trends. The CR reports communicate publicly what has been achieved. These representations report on how DPDHL has addressed its acknowledged responsibilities by featuring selected examples of actions and their results. They provide evidence that actions have taken place by DPDHL to address their identified responsibilities. Two such examples are shown below in Images 7.2 and 7.3.

GOGREEN PRODUCT: CLIMATE-NEUTRAL DELIVERY SERVICE (OFFSET CO_2E EMISSIONS IN TONNES)

Division	2012	2013	2014[1, 2]
Post–eCommerce–Parcel	143,806	148,692	189,471
Express	31,377	42,769	56,600
Global Forwarding, Freight	3,721	986	2,017
Supply Chain	316	120	83
Corporate Center/Other	669	1,193	399
Total	**179,889**	**193,760**	**248,570**

[1] Based on the GHG Protocol Product Lifecycle Accounting and Reporting standard; [2] Data audited by SGS in March 2015.

Image 7.2: Results of CR actions, CR report 2014, p. 118

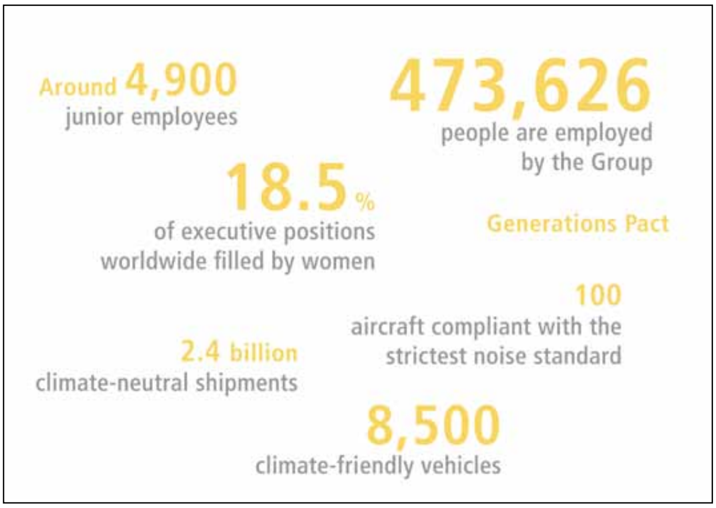


Image 7.3: Reporting achievements, CR report 2012, p. 4

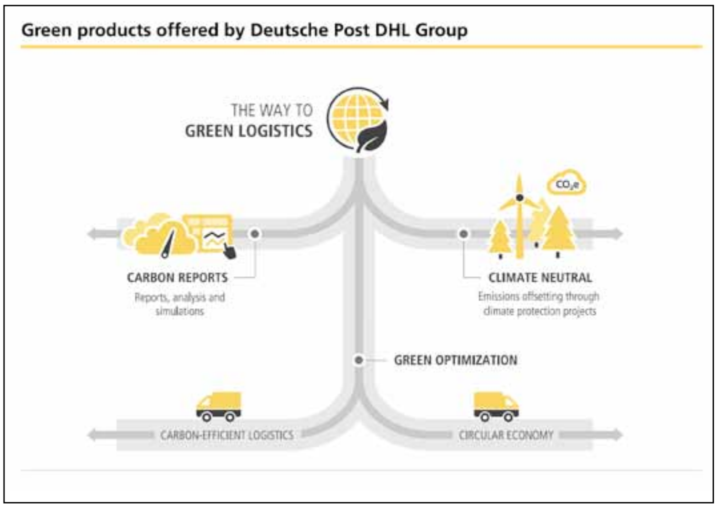
Designed things are often mobilised as supporting evidence for positive outcomes of CR activities. Typically, the designed things are represented in text and images, or numeric information. A good example of this is DPDHL's engagement with electric vehicles. Electric vehicles are present in all nine CR reports examined. Visual and textual material of electric vehicles is presented in the CR reports to document that DPDHL has been active in this space, see Image 7.4 for an example. This observation is in line with Julier (2017), who suggests that one of the roles of design in the corporate world is to communicate "that change is happening. It shapes the stuff but also tells us about it" (p. 167).

Image 7.4: Electric vehicle featured on chapter page, CR report 2010, p. 54

2. CR reports articulate steps towards desired ends

As much as CR reports are concerned with reporting what has happened in the past, they are also engaged with articulating what is going to happen in the future. CR reports not only report on progress made towards previous goals. They are also concerned with formulating new goals, and the steps required to reach them. CR reports outline what DPDHL plans to do in the future. They give insight into the strategies to be pursued and the steps to be taken to achieve desired ends. This is an important function of CR reporting. It enables DPDHL to organise its CR actions (Callon, 2002). Articulating desired ends also contributes to shape public expectations on what DPDHL can achieve through their CR activities (Cooren, 2004). Two points need to be noted here. First, CR targets are defined by the corporation itself, suggesting that what has been proposed as the desired ends is what the corporation has agreed to be responsible for. Second, publicly articulated CR goals, such as those communicated in the CR reports, bring a certain commitment to act towards them, and an expectation to achieve them.

Designed things are mobilised to reach desired ends. They are presented as part of DPDHL's CR strategy to address CR issues. Designed things, such as electric vehicles, and sustainable products and services, are presented as essential actors to achieve desired ends (see, for example, Image 7.5). These designed things help the corporation to formulate tangible outcomes towards CR issues.



The label 'The Way to Green Logistics,' in combination with examples of products and processes, suggest that these designed things are essential actors to achieve more sustainable business practices in logistics.

Image 7.5: Green products offered by DPDHL, CR report 2015, p. 123

3. CR reports provide insights that inform decision-making

CR reports communicate insights about DPDHL's CR strategy and the processes and activities mobilised to translate this strategy into action. These insights inform decisions and enables discussion; not only for DPDHL, but also for its stakeholders. Processes and activities are presented as providing a rationale for how and why DPDHL approaches certain CR activities. They are reported to justify decisions. Knights and Morgan (1991) describe that one of the roles of corporate communication is to assure the reader that the corporation appears "rational and in control of its destiny" (p. 264). By providing insights that inform and justify decisions in relation to CR activities, a rational approach towards CR is communicated.

The management process to achieve CR goals is outlined in the CR report 2015 (p. 20). The processes identifying relevant CR issues are also provided in the CR report 2015 (p. 21ff). These processes are framed as informing DPDHL's decisions, as well as stakeholders' decisions, in relation to DPDHL's CR activities. These communicated processes and activities can then be discussed and negotiated with stakeholders. DPDHL's stakeholder map, shown in Image 7.6, is an example of this. It provides insight into how the corporation prioritises its stakeholders. Once published the stakeholder map can be discussed with other actors.

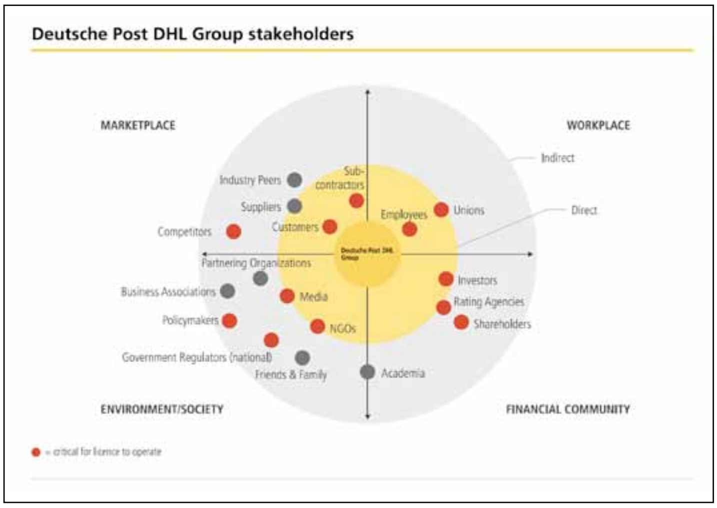


Image 7.6: DPDHL's stakeholder map, CR report 2015, p. 23

The processes and activities that enable discussion and decision-making often refer to designed things. These designed things perform a task, which can then be assessed and evaluated. For example, DPDHL reports on a number of designed things that gather and analyse information in relation to issues of public concern. Other designed things report on how DPDHL understands its responsibilities towards these issues, such as DPDHL's Materiality Analysis. The understandings generated by the Materiality Analysis, as communicated in the CR reports, provide feedback that informs decision-making and enables discussion with stakeholders.

4. CR reports provide insights that enable actions

Some information provided by the CR reports is used to inform actions towards CR issues. Actions and their outcomes are presented in CR reporting that enable further steps towards mitigating CR issues. Actions that have taken place in the space of CR are framed to enable responsible actions in the future. For example, the corporation's R&D associated with e-mobility is framed as providing a sustainable mode of commercial transport in the future.

> "We expect our various tests of alternative vehicles (e.g. electric, hybrid) to result in applicable series productions of manufacturers which enable our industry to source more carbon efficient vehicles for the future" (CR report 2010, p. 63).

Other actions in the space of CR are framed to enable sustainable actions in the future. For example, the investment in offsetting projects is presented as a strategy to generate carbon credits in the future, which can then be applied to service offerings.

> "Starting in 2014, the ten-year project ["Save80" stoves for Lesotho] is expected to create an annual saving of 20,000 tonnes of CO2. These savings will be applied as carbon credits to our GOGREEN delivery services" (CR report 2013, p. 228).

Some CR activities covered in the CR reports seem small in relation to the corporation's overall business operations, such as the number of electric vehicles reported. By framing them as initial steps, with many to follow, emphasis is not given to each step itself and what it achieves, but rather to the general direction in which this step is made. The CR reports throughout the years reported on small and incremental steps in the space of e-mobility that together made a bigger step possible for the corporation: the launch of a commercial electric delivery vehicle (Schwarzer, 2017).

5. CR reports demonstrate the corporation's competitive position

The four roles of CR reporting discussed above are predominantly engaged with how CR issues are addressed, and how these CR activities are communicated in the CR reports. This role and the next one, are less concerned with the CR issues themselves, but rather with the public image of DPDHL.

In the CR reports, DPDHL is positioned as an innovative and future-directed market leader in logistics, particularly since the CR report 2010. Earlier CR reports frame CR, and responsible business practices, more as a re-active obligation. From the CR report 2010 onwards, a more proactive approach towards CR can be noticed in the CR reports (CR report 2010, p. 36; CR report 2011, p. 47; CR report 2012, p. 52; CR report 2013, p. 41; CR report 2014, p. 1; CR report 2015, p. 2). It can be noticed that DPDHL becomes more confident in articulating what it can achieve in this space. This proactive and confident approach towards CR is evident in the corporation's announcement that it aims "to become the benchmark for responsible business" (CR report 2014, p. 1). This aim was first stated in the CR report 2014. It was slightly re-phrased towards becoming "a benchmark company for responsible business" in the CR report 2015 (p. 20). This aim was mentioned 17 times throughout the two reports (CR report 2014; pp. 1, 5, 19, 20, 26, 28, 31, 114; CR report 2015, pp. 20, 37, 38, 87, 92).

When reporting on the aim to "become a benchmark of sustainable business," information and narratives about DPDHL's CR activities are provided. These include actions that have taken place in the past, and those that are planned for the future. Examples of environmental and social projects are reported to show DPDHL's proactive approach towards CR. The corporation's engagement is framed to be an opportunity for the corporation to prepare for future challenges and risks.

"The new strategy [Strategy 2020] sets a forward-looking course, ensuring our ability to overcome future challenges and achieve a consistent balance between economy, ecology and society" (CR report 2014, p. 5).

DPDHL's proactive approach is framed as evidencing leadership in the space of CR. Designed things are mobilised in this narrative, such as sustainable and innovative products and services. Knowledge gained through offering these kinds of products and services are framed as providing a competitive advantage for DPDHL.

6. CR reports shape the brand identity

Engaging with the narratives and information provided in the CR reports suggests that efforts are made to portray DPDHL as a responsible corporation. When discussing CR reports as data material, it was already mentioned that CR reports are strategic communication tools (see Chapter 4). This understanding was confirmed when studying DPDHL's CR reports. However, DPDHL's modes of communication in the CR reports can be described as rather 'conservative.' How CR activities are presented in the CR reports might be best described with the German terms 'sachlich' or 'nüchtern.' The English equivalent of these terms are 'conservative' or 'factual,' respectively. But neither of these two English terms seems to capture what is contained in the German terms. While the content of the CR reports is designed and set in a layout, the visual language and elements used do not overpower the information provided. There is also a rather small amount of images and visual elements in most of the CR reports[1]. The language used in the CR reports is mostly plain and descriptive. Not many adjectives are used when providing information and telling stories.

This particular 'Sachlichkeit' style of the CR reports suggests a certain rhetoric. It suggests that one role of DPDHL's CR reporting is to shape the brand identity as efficient, responsible, transparent, measured, reliable and reasoned. Presenting the corporation in the best possible

1 This observation does not apply to other modes of DPDHL's CR and corporate communication. An example is the DPDHL's corporate website (dpdhl.com/en/responsibility.html). Visual elements seem to play are more prominent role here.

light through CR communication has been discussed by many scholars (Breeze, 2012; Hennig, 2015). Hennig (2015) stresses that these representations in CR reporting cannot be taken at face value. They have to be critically interrogated. Breeze (2012) argues that corporate publications are often used to promote and legitimise corporate actions. Thompson (2005) suggests that new modes of visibility make it necessary for public actors to manage how others see them. This role of CR communication was evident in the data studied. Designed things are mobilised in CR reporting to shape the brand identity. They are mobilised in textual and visual representations to suggest that DPDHL engages in responsible business practices. They project an image of DPDHL as a future-oriented corporation that engages with innovative technologies and practices. Image 7.7 is a good example of this, showing the corporation's electric vehicle and wind turbines in the background.

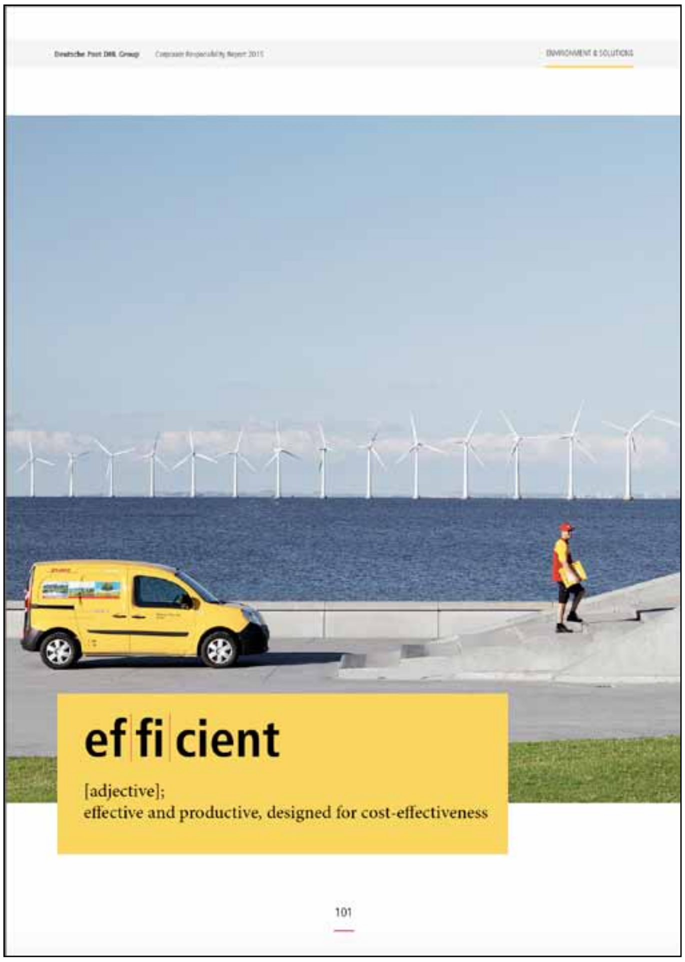


Image 7.7: Electric vehicle featured on chapter page, CR report 2015, p. 101

7.2 Chapter Summary

This chapter presented understandings emerging from the third phase of data analysis. This third phase of data analysis was interested in the roles played by CR reports in the space of CR. It asked: What kind of roles are performed by the CR reports themselves? How do they shape the space of CR? And how are information and narratives presented within the CR reports? This chapter provided answers to these questions. Six main roles of CR reporting were described. These roles played by the CR reports shape the public account of how DPDHL approaches CR. They provide the main interface for stakeholders and interested publics to engage with the corporation's CR activities. They are portraying a certain corporate image. This chapter provided examples of textual and visual representations that demonstrate how CR reports perform these roles. The CR reports present CR activities, they inform about future directions, and they present the corporation in a particular way (such as being responsible or sustainable). Attention was also paid to the kinds of information CR reports provide when reporting on designed things acting in the space of CR, and how these information are communicated. It was discussed that CR reports draw on designed things acting in the space of CR when enacting these six roles. The next chapter unpacks in more detail how designed things are mobilised in the space of CR.

8. Phase Four: Designed Things in the Space of Corporate Responsibility

Chapter 8
Phase Four: Designed Things in the Space of Corporate Responsibility

„Knowledge lies in exemplars and words are never enough" (Law, 2009, p. 144)

This chapter covers my fourth and final phase of engagement with the CR reports. The previous chapter presented my third phase of engagement with the CR reports. It focused on the different roles of CR reports. My fourth phase of engagement, presented in this chapter, has a different focus. It focuses on four designed things appearing in the CR reports that play a role in achieving CR goals. This phase engaged with the data in more detail to provide a deeper understanding of how designed things operate in the space of CR. This chapter has three sections, the first of which provides an overview of the methods used in this phase. The second section presents the understandings that were generated in this analysis. These understandings are then discussed in the final section of this chapter.

8.1 Overview of the Methods Used in this Phase

In this section, I provide an overview of the four designed things analysed and the methods used to analyse them. These methods need to be presented in some detail to explain how the analyses were conducted. A brief overview of the four designed things analysed is also needed in this overview to set the context in which these methods were applied.

The designed things chosen to be analysed

Through my engagement with the CR reports in the previous phases, I noticed that different kinds of designed things operate in this space. I also noticed that they play different roles in relation to CR issues. Some designed things played a role in identifying issues. Some assisted with understanding and evaluating CR issues or the corporate responses to mitigate issues. Others played a role in eliminating or mitigating issues. These observations prompted me to look at four designed things in detail to explore these different actions. The four designed things analysed were:

- DPDHL's Materiality Analysis. This is a visualisation produced by the corporation to communicate their research findings on issues represented in the public sphere that may impact the corporation.

- DPDHL's Carbon Dashboard. This is designed to provide a service to customers who wish to measure and analyse their CO_2 emissions generated by selected parts of their logistics related business operations.

- DPDHL's GoGreen Label, a label on postal items indicating that CO_2 emissions generated through the transport of the postal item have been offset.

- DPDHL's electric vehicle, which is part of DPDHL's fleet.

These four designed things were chosen because they each played a prominent role in the CR reports. They were discussed in the text and numeric information. Visuals and graphic representations about them were also provided. Three of these designed things address the same CR issue, which is CO_2 emissions. This issue was identified as a focus of DPDHL's CR agenda in Chapter 5.

Approaches and procedures used in this phase of the research

ANT concepts were used to unpack how each designed thing can be understood in the context of CR. These ANT concepts offered a language to interpret what designed things are doing in the space of CR. Questions informed by ANT concepts were developed. These questions guided the analysis conducted on the four designed things. Engaging with these ANT-informed questions elicited further understandings of what designed things are doing in the space of CR. The idea to generate a set of questions was sparked by the Controversy Atlas (Venturini et al., 2015). Venturini et al. (2015) describe an atlas as “a systematic bind of representations relative to a specific but heterogeneous universe of objects” (Footnote 18, p. 76-77). The Controversy Atlas asks what, who, how, when and where in relation to a controversy.

I translated the idea of the Controversy Atlas into a new idea. Rather than asking questions about the controversy, I asked questions about the actor. This approach resonates with the ANT slogan ‘follow the actors’ (Latour, 2005b, p. 12). What emerged was the idea for an Actor Atlas, which is comprised of a set of questions. These questions aim to generate insights about the actor and its agency; and how this actor participates in actor-networks that generate performative effects in the space of CR.

The Actor Atlas is an analytical tool aiming to elicit understandings of agency and effect via a set of prompting questions. These questions sought to uncover the different performative associations that the designed thing is part of (Mol, 2003; Law, 2009; Michael, 2000a). The questions of the Actor Atlas are open; they have many possible answers. Engaging with different possible answers started to unpack the designed thing’s participation in different performative associations. These questions ranged from descriptive to interpretative. The Actor Atlas questions are:

- What is the designed thing?
- What issue does the designed thing address?
- What is the articulated/perceived problem?
- How does the designed thing respond to the issue?
- What kind of engagement with the issue is enabled by the designed thing? How has the issue been translated (so that it can be engaged with by corporations or other actors)?
- What is the plan of action (script) of the designed thing? What has changed (before/after)?
- When can the designed thing be understood as a mediator or as an intermediary? Who or what is required to change?
- What is being foregrounded, made visible by the design?

- What constellations of human and nonhuman things (performative associations) are gathered by the design in service of the issue? What relevant actors can be identified in the particular network?
- Does the designed thing reframe responsibilities? Is something that was considered an externality being moved inside the boundaries of responsibility through the designed thing? Are boundaries re-drawn?

The CR reports were processed using NVivo10 to identify the text-based material relating to each of the four designed things. Each CR report was inspected manually to identify visual material relating to the designed things. This material included images, graphs and pictograms. These processes reduced the data material down from 1401 pages to 225 pages. 59 pages were identified that reported on the Materiality Analysis and DPDHL's efforts to identify CR issues. 19 pages were identified that engaged with the Carbon Dashboard and carbon reporting. 78 pages reported on DPDHL's GoGreen Label "Carbon neutral shipping with DHL" or its German version "Der CO_2-neutrale Versand mit der Deutschen Post" and the corporation's efforts to offset emissions through offsetting projects. 69 pages reported on the corporation's engagement with electric vehicles, including the StreetScooter.

Every appearance of the designed thing in the CR report was closely examined in order to arrive at responses to the Actor Atlas questions. I looked at where each reference of the designed thing was positioned in the CR reports. I looked for patterns in the way a designed thing was described. I attended to shifts over time in how the designed thing was presented in the CR reports. I observed the visual language in relation to the designed thing and the textual style. I also observed the use of numeric information in relation to the designed thing. I looked for roles and actions in relation to CR issues.

Having inspected each instance at a micro-level, I then applied my Actor Atlas questions to each of the four designed things. One designed thing was inspected at a time. I did this by considering each question and writing responses. Sometimes the response was refined in an iterative fashion. Sometimes different versions of responses were generated. It was a productive process resulting in a deep engagement with the four designed things.

Using visual design methods to reveal new aspects about what designed things are doing in the context of DPDHL's CR activities

A set of visual methods was developed to bring to view particular aspects of the actions and effects of the designed thing, as represented in the CR reports. This is a common use of visual methods in research (Mauri & Ciuccarelli, 2016; Lorber Kasunic & Sweetapple, 2015).

Three different visualisation exercises were developed based on the central focus of this research – to explore what designed things are doing in the space of CR. These exercises were 1) Agency Mapping, 2) Issue Response Mapping and 3) Ratio Viewing. These visualisation exercises were exploratory. They revealed different aspects of the designed things, and elicited new ways of understanding them (DiSalvo, 2009). Each visual exercise was also a 'thinking aid' that enabled the data to talk back to me (Goldschmidt, 2003, 2014, 2017). Together, the exercises enabled different modes of seeing and interpreting the designed things. Each of these exercises is introduced below.

1) Agency Mapping

The Agency Mapping exercise explores how to translate understandings that have emerged during the qualitative data analysis into visual representations. Venturini and Guido (2012) note that few explorations exist to translate qualitative research into visualisations. Mauri and Ciuccarelli (2016) argue that visualisations are useful in the process of analysing and communicating research. However, they do not provide concrete examples of how visualisations might look like for more qualitative research. The Agency Map is an attempt to do this.

In Chapter 7, six roles played by CR reports were identified. These roles were argued to be performative and thus have agency. The Agency Mapping exercise makes visible the extent to which each designed thing participates in the performance of these roles. ANT researchers suggest that agency is fluid and shifts around. It shows itself in different ways. The Agency Mapping exercise sets out to capture this shifting between roles by a designed thing. By conducting the Agency Mapping exercise for each year, shifts over time for each of the six roles also became visible.

An Agency Map was produced for each of the four designed things. Each appearance of the designed thing, either text or visual representation, was coded. Each appearance could be coded against one or more roles. For example, a paragraph reporting on a Materiality Analysis conducted could report on past actions and simultaneously suggest good corporate citizenship of DPDHL. In this example, the paragraph would be coded against the roles "evidencing actions that have taken place" and "shaping the brand identity." Once the coding was completed, the total number of times the designed thing had performed each role was translated into a visual representation.

Three iterations of coding were conducted for each Agency Mapping exercise. All rounds of coding were conducted with printouts of the CR reports. This strategy ensured that the representation of the designed thing was grasped in the context of the CR report's layout. Various aspects were taken into consideration when working with the printouts of the CR reports. These included, for example, whether the representation of the designed thing appeared in a body text or a headline, where it was positioned on the page, and its size in relation to other items placed on the page. Working with the hardcopy printouts of the CR reports allowed previous coding rounds to be revisited and coding consistency to be monitored. By 'coding consistency' I mean that my coding was aligned both across the CR reports and between the four designed things analysed. It involved a self-checking procedure where I critically scrutinised my codes to ensure that the way I coded in earlier rounds of the analysis was consistent with later rounds. I did this to make sure that, throughout the process of analysing the data, the interpretation of the designed things was comparable. Overall this self-checking procedure was effective. Through this process, I was confident that my coding was consistent.

2) Issue Response Mapping

DPDHL has a set of 25 CR issues identified by the corporation and its stakeholders. DPDHL calls these 'material issues.' The Issue Response Mapping exercise traces links between the designed things and these 25 material issues. As for the Agency Mapping exercise, the data material was coded, this time for reference to the material issues. The number of references to each issue was totalled to discover the relative weight given to each issue across all CR reports.

An Issue Response Mapping exercise was generated for two of the four designed things. I coded each instance in the nine CR reports that mentioned the designed thing in relation to a material issue. For example, a reference to a designed thing in relation to reducing air pollution and noise was coded against the DPDHL material issue 'Air Pollution & Noise.' I used the most recent set of material issues published by DPDHL for this exercise. These were contained in the CR report 2015.

3) Ratio Viewing

The Ratio View is a visualisation based on numeric information provided in the CR reports. Each CR report contains numerical information to support particular stories told within the CR reports. The Ratio View uses numerical information to tell alternative stories. It also explores patterns that emerge over time. For example, the number of electric cars operating within DPDHL tells the story that the number of electric vehicles at DPDHL is constantly growing. The story told when comparing the number of electric vehicles as a proportion of the total number of vehicles in operation at DPDHL tells a different story. Visualising numeric information is a common approach to critical information design, such as found on visualcomplexity.com. A Ratio View was generated for two of the designed things. Numeric information from the CR reports were gathered and translated into visual representations.

8.2 An Analysis of Four Designed Things

The previous section presented the approaches and procedures used in the fourth and final phase of data analysis. It also introduced the four designed things analysed. In this section, the analyses associated with each designed thing are presented and discussed as they appear through the different coding and mapping exercises conducted. Each designed thing is presented separately, starting with DPDHL's Materiality Analysis.

Designed Thing No. 1
DPDHL's Materiality Analysis

DPDHL's Materiality Analysis is a visual representation that identifies DPDHL's 25 most relevant 'material issues,' as understood by the corporation itself. DPDHL uses the term 'material issues' to group "topics and indicators that reflect the organization's significant economic, environmental, and social impacts, or those that would substantively influence the assessments and decisions of stakeholders" (CR report 09/10, p. 272). 59 pages were identified where the Materiality Analysis was mentioned in writing. Only six visual representations of the Materiality Analysis were found in the nine CR reports studied. Image 8.1 (below) shows one of these visual representations. Another is shown on the next page (Image 8.2).

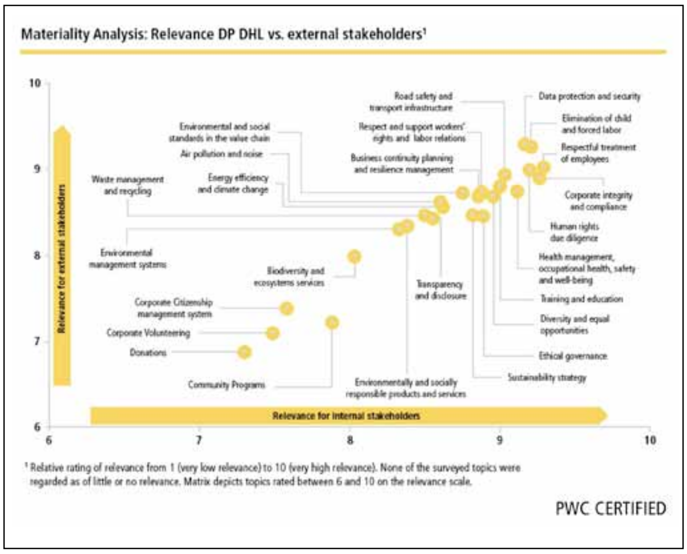


Image 8.1: DPDHL's Materiality Analysis 2013, CR report 2013, p. 37

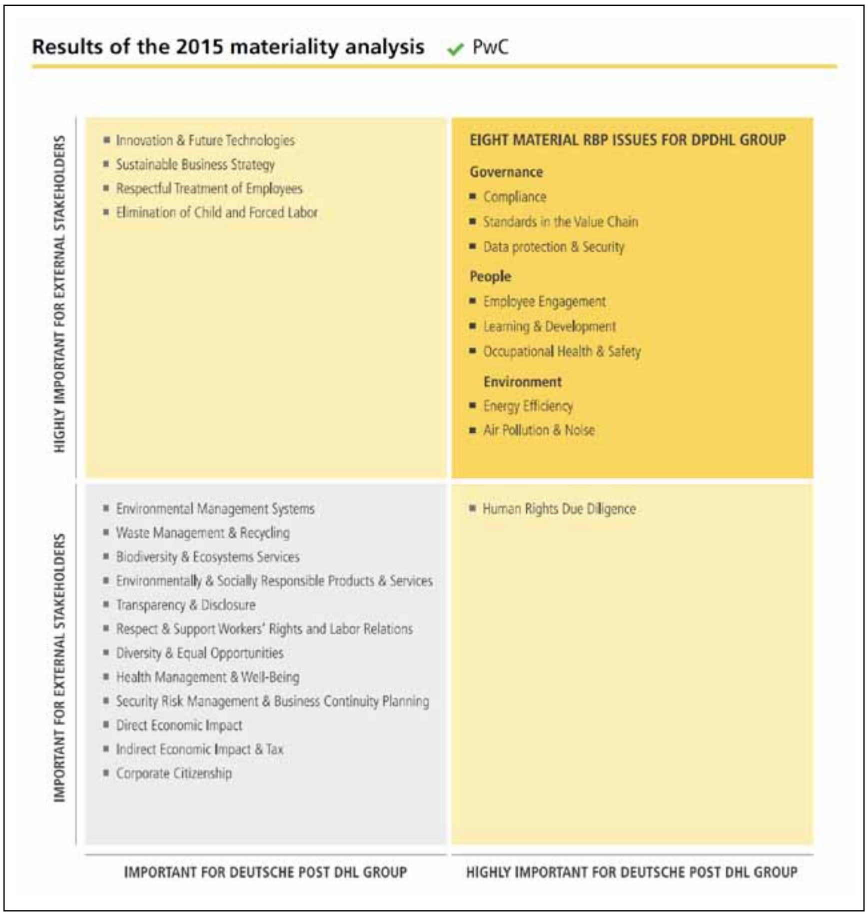


Image 8.2 DPDHL's Materiality Analysis 2015, CR report 2015, p. 21

DPDHL published its first Materiality Analysis in the CR report 2013 and re-published it in the CR report 2014. The second Materiality Analysis was published in the CR report 2015. Comparing these two Materiality Analyses (see Table 8.1), I noticed that material issues had shifted, were re-named, and re-grouped. Some material issues had disappeared while new ones were included. Through this process, issues that were considered externalities might have found their way into DPDHL's frame of responsibility. Other issues might have been pushed out. This suggests that the Materiality Analysis was being used as a reframing process where boundaries of responsibilities are assessed. Callon (1998) describes the assessment of boundaries of responsibility as a reframing process. DPDHL appears to be doing a similar reframing process by conducting a Materiality Analysis.

Table 8.1: DPDHL's material issues in alphabetical order, changes between 2013 and 2015 are in bold

Material Issues 2013	Material Issues 2015
Air pollution and noise	Air Pollution & Noise
Biodiversity and ecosystems services	Biodiversity & Ecosystems Services
Business continuity planning and **resilience management**	**Security Risk Management** & Business Continuity Planning
Community Programs	
Corporate integrity and compliance	Compliance
Corporate Citizenship **management system**	Corporate Citizenship
Corporate Volunteering	
Data protection and security	Data Protection & Security
	Direct Economic Impact
Diversity and equal opportunity	Diversity & Equal Opportunity
Donations	
Elimination of child and forced labor	Elimination of Child and Forced Labor
	Employee Engagement
Energy Efficiency and **climate change**	Energy Efficiency
Environmental and social standards in the value chain	Standards in the Value Chain
Environmental and socially responsible products and services	Environmental & Socially Responsible Products & Services
Environmental management systems	Environmental Management Systems
Ethical governance	
Health management, occupational health, safety and well-being	Divided into two: Health Management & Well-Being, and Occupational Health & Safety
Human rights due diligence	Human Rights Due Diligence
	Indirect Economic Impact & Tax
	Innovation & Future Technologies
Training and education	**Learning & Development**
Respect and support workers' rights and labor relations	Respect & Support Workers' Rights and Labor Relations
Respectful treatment of employees	Respectful Treatment of Employees
Road safety and transport infrastructure	
Sustainability Strategy	Sustainable **Business** Strategy
Transparency and disclosure	Transparency & Disclosure
Waste management and recycling	Waste Management & Recycling

Only two Materiality Analyses have been published by DPDHL to date. They are produced bi-annually, and were released in 2013 and 2015. The next Materiality Analysis is expected to be published in the forthcoming CR report 2017, to be published around March 2018. DPDHL's intention to conduct a Materiality Analysis every two years indicates the need to regularly assess what their most pressing material issues are, and how they affect the corporation's responsibilities. It suggests that boundaries of responsibility are in flux and change over time.

It is important to note that DPDHL has been engaging with material issues prior to 2013. However, their earlier engagement with material issues did not provide a full overview of identified issues and was not captured in a visual representation. See, for example, the table of material issues in the CR report 2010 (p. 21), or the mentioning that DPDHL is engaged in identifying material issues (CR report 09/10, p. 41 & p. 49; CR report 2010, p. 26). Since the CR report 2013, a number of processes are reported that identify material issues. These processes are not outlined in earlier CR reports. By conducting Materiality Analyses since 2013, DPDHL could be viewed as being more proactive in this space, possibly showing what Senkel (2014) described as 'active responsible leadership.' Senkel's research showed that by 2011, DPDHL had become actively engaged in CR. Conducting Materiality Analyses seems to support this perception.

The Materiality Analysis shows how DPDHL prioritises the 25 material issues compared to its stakeholders (CR report 2013, p. 37; CR report 2015, p. 21). It suggests that priorities are mostly in line between the two parties. Both Materiality Analyses are presented in relation to stakeholder dialogue. The Materiality Analyses are accompanied by a stakeholder map (CR report 2013, p. 43). Various stakeholder dialogues are described when reporting on the Materiality Analyses (CR report 2013, p. 36). This observation could be viewed as DPDHL's engagement with the public sphere in order to negotiate conflicts and tensions. Castell's (2008) concept of the new public sphere suggests that corporations have more need to actively engage with different publics. Porter and Kramer (2006) see CR as an opportunity for corporations to negotiate conflicts and tensions with different publics (p. 92).

The Materiality Analysis identifies and prioritises DPDHL's responsibilities in relation to CR issues (CR report 2013, p. 6, p. 220; CR report 2015, p. 6). DPDHL claims that their decision-making and strategy is guided by this analysis (CR report 2013, p. 31, p. 38, p. 184; CR report 2014, p. 25). It is presented by DPDHL as the first step towards addressing relevant CR issues (CR report 2013, p. 40; CR report 2015, p. 20).

> "The results of our 2013 materiality analysis have a significant impact on our CR agenda and the contents of this report" (CR report 2014, p. 33).

The Agency Mapping exercise for the Materiality Analysis is presented in Image 8.3 (shown on the next page). It shows that the primary role of the Materiality Analysis is to 'provide insights that inform decision-making.' DPDHL positions the Materiality Analysis as a process tool for informing how responsibilities should be prioritised in relation to the corporation's own concerns and their stakeholders' concerns. The Materiality Analysis is framed to inform decision-making and actions pursued in relation to DPDHL's CR strategy.

The Materiality Analysis is not seen by DPDHL as a way of 'demonstrating the corporation's competitive position' or of 'shaping the brand identity,' as is evident from the Agency Mapping exercise. Conducting a Materiality Analysis is considered good corporate practice. The Global Reporting Initiative (GRI) G4 Sustainability Reporting Guidelines (2015) recommend that corporations identify their material issues as part of their sustainability reporting: "The report should emphasize information on performance regarding the most material Aspects." (p. 11). The GRI G4 reporting standards also recommend a "visual representation of prioritization of Aspects" (p. 12).

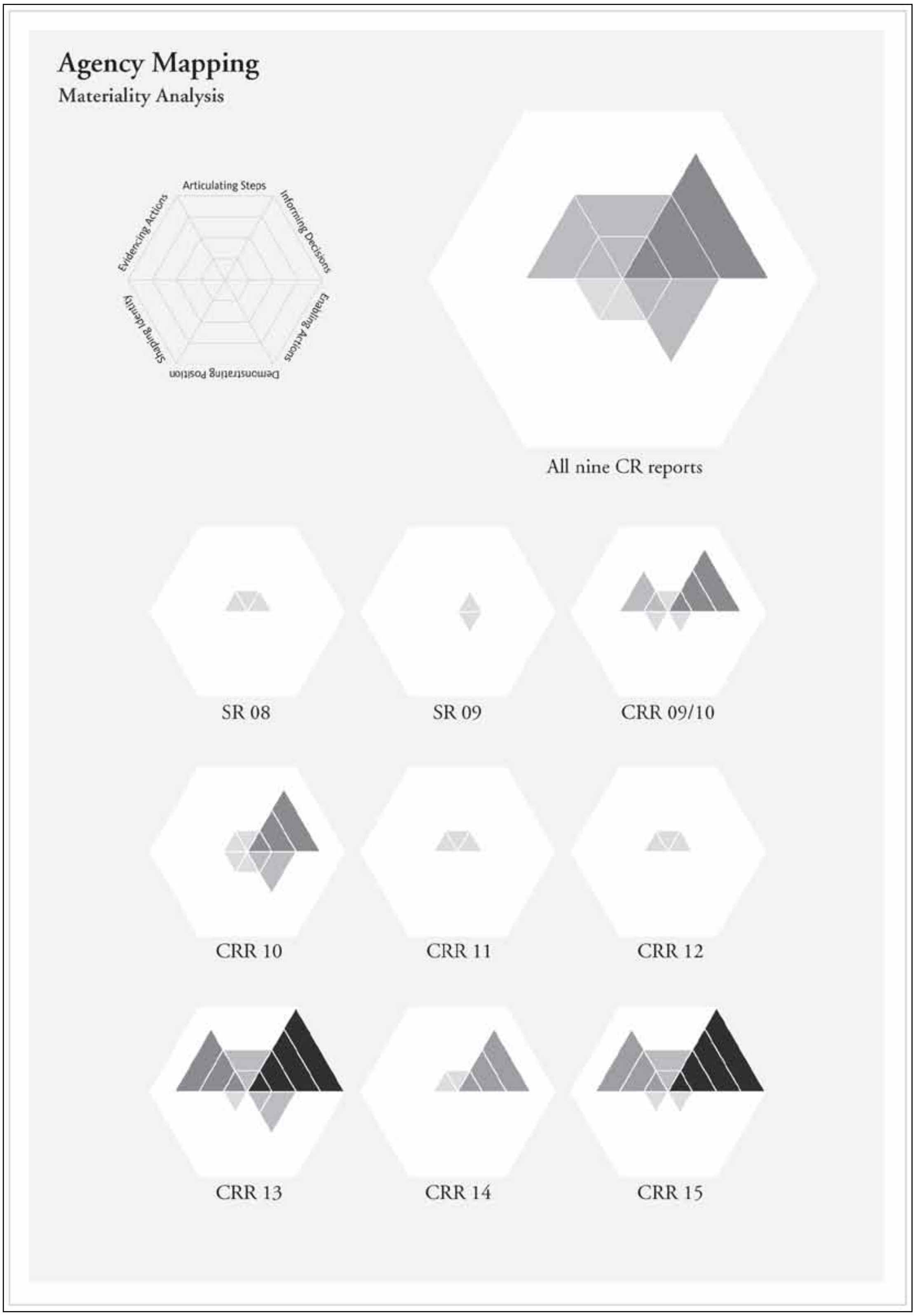


Image 8.3: Agency Mapping exercise for DPDHL's Materiality Analysis.

DPDHL's Materiality Analysis is a good example of black boxing. Black boxing is accomplished when an issue or a thing is simplified into an easily grasped form readily communicated and thus can become an actor with agency (Latour, 1987). Aspects considered not relevant are covered up or backgrounded. In black boxing only those aspects that are considered relevant are made visible and active in its interactions. This simplification shapes how the issue or thing is understood. Black boxing pre-selects what is made visible and how it can be engaged with. The Materiality Analysis is a black box that renders the inclusion of stakeholder concerns as simple and straightforward. DPDHL's responsibilities are a complex and multilayered problem space. To translate this complex topic into a set of labels is an example of black boxing.

The visualisation of the Materiality Analysis makes a quick and easy overview of DPDHL's CR issues possible. This is the strength of translating the complexities of DPDHL's responsibilities into a single visualisation. At the same time, this simplification could be considered its weakness, if more complex information about material issues is required. Some issues are labeled very broadly. Others are not specific to DPDHL or the logistics industry, but refer to generally accepted standards for corporate behaviour, such as the material issue 'compliance.' However, the connections between material issues and corporate actions are made elsewhere in the CR reports.

In 2016, an online version of the Materiality Analysis from 2015 was made available. This online version of the Materiality Analysis was interactive, with each of the DPDHL's 25 material issues linked to more information and related corporate responses. This provided greater transparency for the material issues covered in the Materiality Analysis. It enabled one to engage with the material issues in detail. It also provided examples of DPDHL's responses towards the material issues identified. It seems that the online version of the Materiality Analysis has been removed from DPDHL's online content available to the public (last searched for on 25 January 2018). The online version of the Materiality Analysis is mentioned here as it provided different visual representations of the Materiality Analysis; ones that are not shown in the CR reports.

DPDHL's Materiality Analysis, as shown in the CR reports, can be understood as a simplification of the understandings that emerged by gathering and evaluating various data sources. Simplifying the understandings is achieved through reduction, which has two dimensions to it. The first dimension of reduction is to generate broad categories of material issues. Complex material issues are reduced to simple headline terms, such as 'Standards in the Value Chain.' The second reduction is the limiting to 25 material issues by DPDHL. Here, DPDHL has determined what their 25 most important material issues are. In other words, the Materiality Analysis focuses its attention on issues that DPDHL is motivated to engage with. But who has the final word on what are the 25 most relevant issues? Which ones were left out and do not appear on this list? Which are the issues that have been made silent, and by doing so, were translated into what Lukes (1974) calls 'non-issues'?

For Lukes (1974), non-issues are social, environmental or economic matters of concern that are intentionally held back to not become political issues (pp. 18-19, p. 24, pp. 43-44). These issues are held back by powerful actors that have political agendas; acknowledging and addressing these issues would be contra-productive to their individual interests. Or certain issues are made very present to push other issues in the background, by overpowering them. In the context of CR, this would translate to putting a lot of emphasis on one particular CR issue. By doing so, attention is drawn away from other CR issues. These other issues can be equally important or more important. Some actors might first and foremost attend to issues of their own interest and not necessarily address those issues that are of higher concern to others. The Materiality Analysis could play a role in this, but such a role is not detectable simply by analysing the CR reports. In that light, the Materiality Analysis can be understood as an important actor within the actor-network of the CR report that is strategically managing which responsibilities will be acknowledged by the corporation.

Translating Lukes's notion of non-issues to the context of CR suggests that powerful corporations can ignore issues, by blacking them out, by not putting them on their CR agenda. Action to render an issue into a non-issue is easier when no regulations or guidelines are in place to engage with the issue, or when public pressure is absent. The Materiality Analysis brings to the forefront only those issues that the corporation is willing to discuss as an area of potential responsibility. Other issues are made invisible. An example of something rendered a non-issue is the work conditions of the employees of subcontractors who provide services that DPDHL has outsourced (Malter, 2014). Through outsourcing, responsibilities are adjusted. In this case, responsibility for the impact of certain kinds of work are pushed outside of DPDHL's frame of responsibility.

DPDHL's Materiality Analysis communicates how DPDHL has decided to represent its responsibilities. It is a visual communication that enables discussions on DPDHL's responsibilities. These discussions are encouraged at two different points in time. First, when generating input from stakeholders for the Materiality Analysis. Second, when publishing the Materiality Analysis, responsibilities – and their implications – can be discussed with different stakeholders. This generates expectations for DPDHL to respond to the identified responsibilities. By listing the 25 material issues comes an obligation to address them. The Materiality Analysis is performative in that it shapes which issues are being prioritised. Yaneva (2012) explains that "maps are not just representational tools; map-making and mappings perform" (p. 89). The Materiality Analysis shapes which issues are addressed and which ones are not. It plays a role in justifying which issues are prioritised in current and future CR activities.

Summary

DPDHL's Materiality Analysis performs multiple roles in the space of CR. It is mobilised in the identification of DPDHL's CR issues. It plays a role in communicating how DPDHL's responsibilities are understood by the corporation itself and by others. It is mobilised as a visual communication that facilitates negotiations between DPDHL and various stakeholders concerning priorities in addressing CR issues. The above analysis of the Materiality Analysis suggests that it is used to inform decision-making on how to prioritise and how to respond to CR issues. In doing so, it enables DPDHL 'to progress' its CR engagement as a set of acknowledged commitments that have been shared and negotiated with stakeholders.

Designed Thing No. 2
DPDHL's Carbon Dashboard

DPDHL's Carbon Dashboard is the second designed thing that was analysed. The Carbon Dashboard is "an online tool that measures CO_2 emissions along a manufacturer's supply chain" (CR report 2013, p. 223). The Carbon Dashboard is the online version of the Carbon Report, providing textual and visual information about the carbon usage of different activities within the supply chain. In addition to reporting on the carbon usage, the Carbon Dashboard offers another function: It allows calculation of the carbon impact of different scenarios and shows how changes in the supply chain might affect the environmental footprint of business operations. The Carbon Dashboard helps to improve "carbon visibility and identify important levers for reducing emissions" (CR report 2014, p. 116). It does this by simulating "alternative supply chains combined with a carbon efficiency analysis" (CR report 2011, p. 62).

Carbon accounting and reporting was initially employed in the evaluation of DPDHL's own carbon emissions (Sustainability Report 2008; CR report 2010, p. 57). In response to customer demands, accounting and reporting of CO_2 emissions was extended for use beyond DPDHL. It was developed into a service offering for customers. The prototype of the Carbon Dashboard was developed in 2010 as a customised service for the customer Recreational Equipment, Inc. (CR report 2010, p. 93). The Carbon Dashboard is first mentioned in the CR report 2010. It was launched as a general service offering in 2011 (CR Report 2011, p. 62). The second edition of the Carbon Dashboard, called Carbon Dashboard 2.0, was launched in 2014[1].

The Carbon Dashboard is a tool for analysing and communicating carbon emissions. The Carbon Dashboard provides insights into the volume of carbon emissions generated by selected business activities. These insights

1 The Carbon Dashboard 2.0 was developed by DPDHL in collaboration with Singapore Management University. See also: http://frontend.dhl-co2.com/pages/#/previewShowcase; greentransformationlab.com; gtl.smu.edu.sg; www.smu.edu.sg/news/2013/05/09/dhl-and-singapore-management-university-launch-green-transformation-lab-0. See also DPDHL's press release: www.dpdhl.com/en/media_relations/press_releases/2014/dhl_delivers_greater_carbon_emissions_transparency.html, last viewed 26 January 2018.

inform decision-making to achieve more sustainable business practices. For DPDHL, measuring and analysing carbon emissions is considered a necessary step towards the reduction of carbon emissions.

> "One of the first steps is assessing and reporting greenhouse gas emissions" (CR report 2014, p. 113).
>
> "[The Carbon Dashboard] is a powerful tool giving the basis to manage carbon emissions" (CR report 2010, p. 93).

The Carbon Dashboard visually and textually communicates carbon emission usage. By doing so, it identifies energy intensive business processes, and measures the effectiveness of different mitigation strategies. The Carbon Dashboard informs decision-making rather than being a direct intervention to reduce emissions.

The Carbon Dashboard is mentioned in 19 of the 1401 pages examined. It plays a prominent role in measuring and evaluating the mitigation of carbon emissions. This is one of DPDHL's core CR issues. The Carbon Dashboard is the centre piece for analysing this CR issue.

The Carbon Dashboard appears in the CR reports as a collection of numerical and textual representations that are arranged in such a way as to portray a growing demand for carbon reporting (see Image 8.4, for an example). In this context, the Carbon Dashboard is positioned as an innovative and future-directed product. It is framed to be an essential tool towards more sustainable business practices in logistics. DPDHL emphasises that measuring carbon emissions is an essential step towards reducing carbon emissions.

> "The Carbon Reports are important instruments for ensuring the transparency of our climate-friendly solutions. And based on the success of these products, transparency is something our customers obviously want – in the reporting year, 72% more CO emissions were reported via the Carbon Reports than in the previous year" (CR report 2013, p. 221).

Carbon Report: Reported CO_2e emissions for customer shipments by division[1]

	CO_2 IN TONNES		CO_2e[2] IN TONNES	
	2012	2013	2014	2015
Total	**1,278,297**	**2,195,062**	**3,660,516**	**4,583,553**
Post - eCommerce - Parcel	77,391	85,745	104,601	101,387
Express	57,026	124,557	195,503	382,079
Global Forwarding, Freight	945,212	1,898,075	3,240,606	4,088,872
Supply Chain	198,668	86,685	119,806	11,215

1 Calculation methodologies verified by the independent audit organization Société Générale de Surveillance (SGS)
2 Based on the GHG Protocol Product Lifecycle Accounting and Reporting standard

Image 8.4: Numerical representation of carbon reporting, CR report 2015, p. 144

The Issue Response Mapping exercise explores the numerical and textual representations of the Carbon Dashboard and how they relate to DPDHL's 25 material issues. 50 representations of the Carbon Dashboard were identified in the nine CR reports where the Carbon Dashboard is presented in relation to one of DPDHL's 25 material issues. It is positioned in relation to 7 material issues. These were (with the count for each given in parentheses):

- Environmentally & Socially Responsible Products & Services (x 20)
- Transparency & Disclosure (x 9)
- Innovation & Future Technologies (x 6)
- Energy Efficiency (x 6)
- Environmental Management Systems (x 4)
- Compliance (x 3)
- Corporate Citizenship (x 2)

The visual exercise to represent these numbers is shown in Image 8.5 on the next page. The Issue Response Mapping exercise reveals that the Carbon Dashboard is primarily positioned as an environmentally responsible product, and one that provides transparency. This is interesting, as the Carbon Dashboard only measures and analyses CO2 emissions without directly reducing them. MacKenzie et al. (2007) suggest that material devices actively participate in how issues are understood and approached (p.15). The Carbon Dashboard is valued because of the connection between measuring and acting on it. The

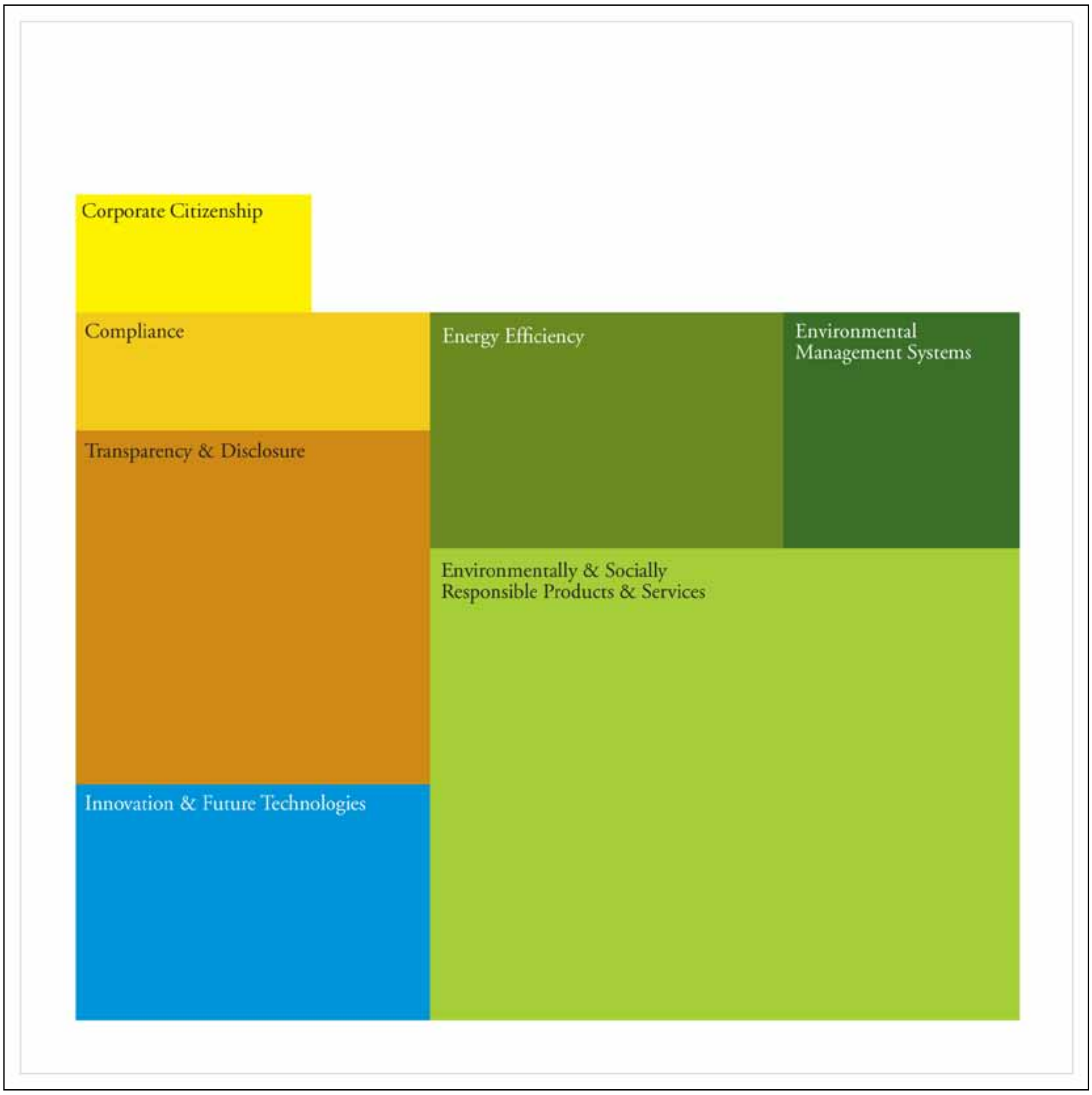


Image 8.5: Issue Response Mapping exercise for DPDHL's Carbon Dashboard.

Carbon Dashboard is a tool that calculates actual and hypothetical carbon emissions. Measurement tools are key actors in translating intangible issues into actions that are accountable and so into a language (e.g., numbers) that can be evaluated in a business context. MacKenzie et al. (2007) argue that such tools influence the way the issue is grasped and approached. They see measurement tools as performative in that they bring certain practices into being. Tools and equipment shape a practice and those that participate in the practice. Other authors make a similar argument (Callon, 2007; Callon & Muniesa, 2005; Callon et al., 2007; Miller, 1998, 2008). Drawing on these authors, the Carbon Dashboard not only provides information on emission levels, but also shapes how they are understood. By pre-selecting what is made visible and how the data is presented, the Carbon Dashboard pre-determines what can be understood, and what actions might be taken to mitigate carbon emissions. In this sense, the Carbon Dashboard is performative in that it not only reports, it also shapes actions.

The Carbon Dashboard does not act in isolation. It participates in actions involving multiple actors that together produce calculations and measurements of carbon emissions. Together, these actors, including "human actors and material devices," shape how the issue is understood and acted upon (Callon & Muniesa, 2005, p. 1245). Together, these actors have a "distributed agency" (p. 1236) towards what is brought into being. Callon and Muniesa suggest that the "calculative capacities [of an actor-network] are linked to their equipment" (p. 1236). Stengers (2005) suggests that knowledge, judgments and practices also have to be considered. She explains: "it is 'our' knowledge, the facts produced by 'our' technical equipment but also the judgements associated with 'our' practices that are primarily in charge" (Stengers, 2005, p. 995). The Carbon Dashboard is just one of many actors that shapes how the issue of carbon emissions is approached. Positions and practices of human actors also shape how emissions are calculated and measured.

The Carbon Dashboard contributes to re-drawing boundaries of responsibilities. It does this by generating information that makes it more difficult to ignore responsibilities for reducing carbon emissions. With the capacity to identify business operations that are carbon-intense comes a responsibility to take action (i.e., if the corporation has knowledge, then they also have responsibility). Once carbon emissions are better understood, efforts can then be made to address them.

> "The basis for introducing sustainability solutions is first to get transparency of the company's environmental footprint" (CR report 2014, p. 113).

> “Following the management saying ‘You can’t manage what you don’t measure’ we see transparency on our CO_2 footprint as an underlying prerequisite to identify efficiency improvement measures and track our GoGreen program’s progress” (CR report 09/10, environment, p. 45).

The capacity to identify carbon-intense business operations can also be used to make corporations more accountable for the emission they generate. The frame of possible action shifts, based on what can be understood. The Carbon Dashboard plays a crucial role in helping to facilitate new understandings. The Carbon Dashboard is an example of a designed thing that offers modes of understanding and engagement with carbon emissions. It provides textual, numeric and visual information about carbon emissions. Visualisations help to interpret the information provided, making it easier and quicker to engage with the content provided in the Carbon Dashboard. It helps to make carbon emissions, which are essentially invisible, visible.

Carbon reporting is understood to be a first step towards reducing emissions. By offering carbon reporting as a service, whether it be for customers or business partners, the possibilities of participation in responsible actions is extended to other actors. The Carbon Dashboard, as a service offering, contributes to reframing responsibilities as shared responsibilities. DPDHL has identified the mitigation of carbon emissions as a central topic of their CR activities. By offering products and services that enable other actors to engage with the mitigation of carbon emissions, they position this CR issue as a shared responsibility between themselves and various actors involved in the corporation’s business operations.

> “We offer customers eco-efficient logistics and transport solutions that not only improve the transparency of their emissions, but help reduce or offset them. While demand for such services is high, we hope that even more customers answer the call of the Paris climate conference and strengthen the link between environmental protection and business opportunity” (CR report 2015, p. 105, Katharina Tomoff, Head Shared Value at DPDHL).

The Carbon Dashboard is presented as a service offering that 'evidences actions that have taken place' towards capturing and evaluating CO_2 emissions. This role is particularly present in the CR reports 2010 and 2013. The Carbon Dashboard is framed to provide evidence of DPDHL's efforts to bring carbon reporting forward. By positioning it in this way, it is presented as a product that demonstrates that DPDHL acts responsibly. In addition, such tools facilitate action that may soon be of advantage due to rising regulations and public pressure towards carbon emission reporting and mitigation[2].

The Agency Mapping exercise for the Carbon Dashboard is shown in Image 8.6. It reveals that the Carbon Dashboard is perceived to be less relevant to the two future-directed roles 'articulating steps towards desired ends' and 'providing insights that enable actions.' This is interesting, as the Carbon Dashboard holds the potential to do exactly this – to guide future actions towards reducing carbon emissions. It would be expected to be positioned as a future-directed service offering that enables more sustainable business practices in the future.

2 "We expect that the regulations for carbon reporting will further increase over the next years. Our new GoGreen service portfolio help companies to gain emission transparency, find options for efficiency improvements, potential cost savings and neutralize their emission impact" (Roger Crook, CEO DHL Global Forwarding, Freight, cited in www.dpdhl.com/en/media_relations/press_releases/2014/dhl_delivers_greater_carbon_emissions_transparency.html, last viewed 26 January 2018).

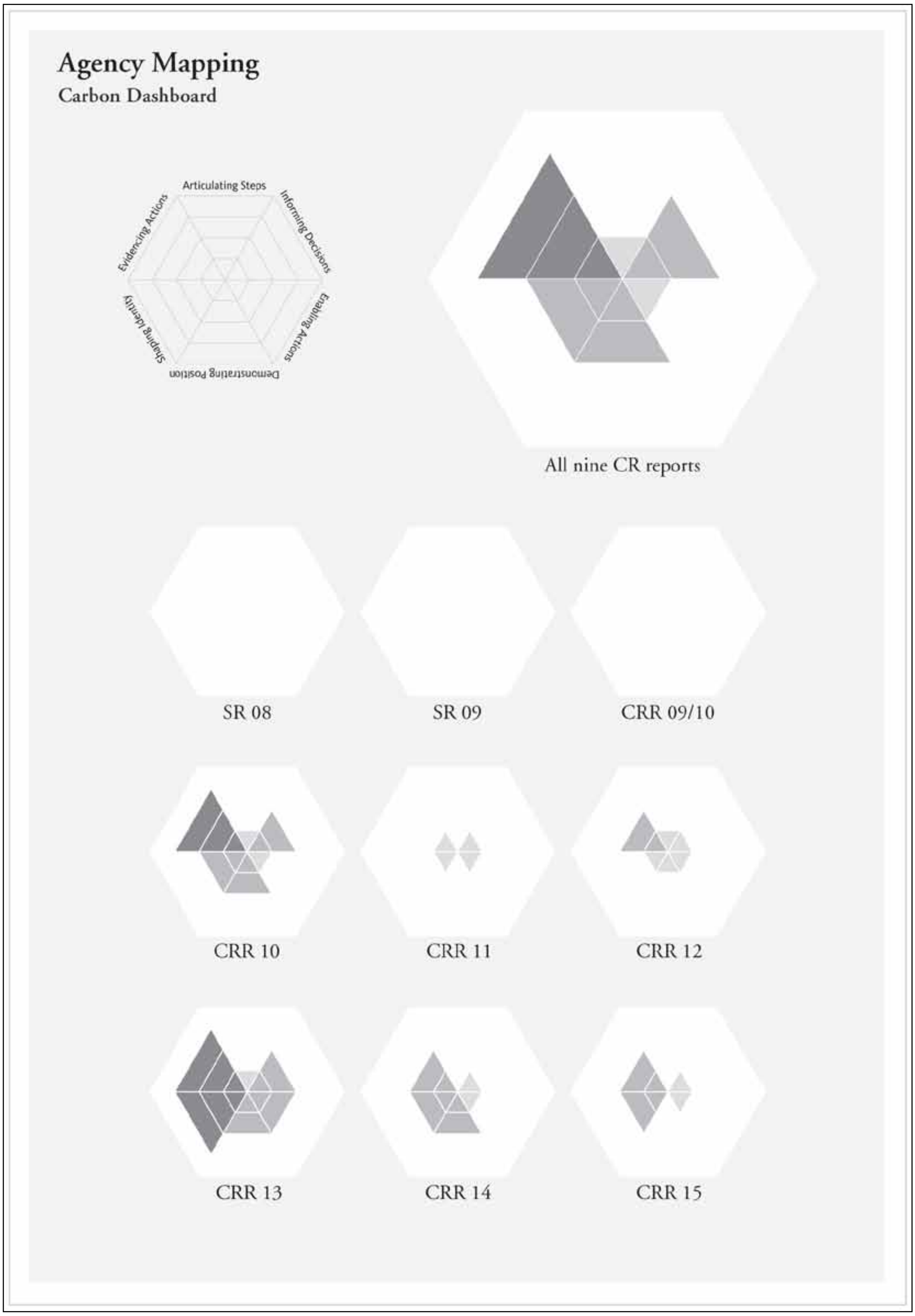
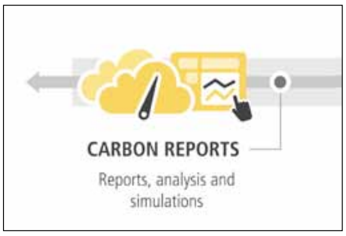


Image 8.6: Agency Mapping exercise for DPDHL's Carbon Dashboard.

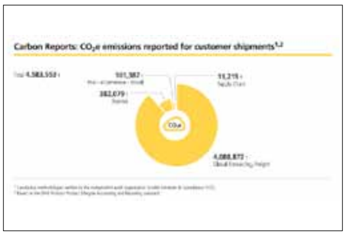
The Carbon Dashboard is positioned as a promising product in the CR reports. It is represented as something that will become more necessary in the future to enable more sustainable business practices. This, however, is not reflected with any visuals. It is only presented with numerical and textual information. The lack of visual material of the Carbon Dashboard suggests a somewhat 'non-presence' of the product itself in the CR reports. Representations of the Carbon Dashboard seem to focus on the amount of emissions reported through the product, rather than on the product itself. Examples of these representations are shown in Image Set 8.1.

Image Set 8.1: Examples of representations of DPDHL's Carbon Dashboard

CR report 2011, p. 62



CR report 2015, p. 123



CR report 2015, p. 124

An image of the Dashboard is shown in Image 8.7. However, it needs to be noted that this image is not from the CR reports. It was taken from the website http://frontend.dhl-co2.com/pages/#/previewShowcase. This image is presented to show what the actual Carbon Dashbaord looks like.

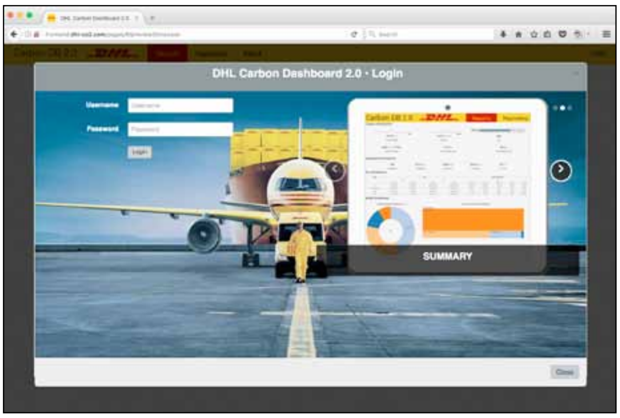


Image 8.7: Screenshot of DPDHL's Carbon Dashboard taken from http://frontend.dhl-co2.com/pages/#/previewShowcase

Summary

Considering the points raised above, DPDHL's Carbon Dashboard is primarily mobilised to measure and evaluate carbon emissions. Equally important are its capacities to translate this information into accessible textual, numerical and visual outcomes. These outcomes help to make carbon emissions visible and approachable. The Carbon Dashboard also evidences actions that DPDHL is active in the space of carbon reporting. By doing so, it contributes to DPDHL's image that it is acting towards the CR issue of mitigating carbon emissions.

Designed Thing No. 3
DPDHL's GoGreen Label "Carbon neutral shipping with DHL"

The third designed thing analysed is DPDHL's GoGreen Label "Carbon neutral shipping with DHL." DPDHL uses offsetting to reduce its reported carbon emissions. Offsetting, as understood by DPDHL, is when carbon dioxide emissions, generated for transporting a postal item, are 'offset' or 'neutralised' through the purchase of carbon credits or through the funding of offsetting projects (SR 2008, p. 25). In the business world, this is a well established approach towards reducing reported carbon emissions (Tolhurst & Embaye, 2011[3]). This is especially the case since carbon emissions have become a commodity, traded globally (Engels, 2009; Callon, 2009).

In providing offsetting services to its customers, DPDHL positions the emissions generated through logistics activities as a responsibility of the customer. The customer can choose to take responsibility for the emissions by paying for the offsetting service. A GoGreen label (see Image 8.8) is then placed on the postal item, signifying that this payment has been made (see Image 8.9).

Image 8.8: GoGreen label, CR report 2010, p. 99

Image 8.9: GoGreen label on letter, CR report 2013, p. 184

3 Tolhurst and Embaye (2011) outline some of the reasons for why corporation use carbon offsetting. For example, when "the internal reductions fulfil only a certain portion of a company's reduction target, where companies lack technological capacity or the cost of the in-house measures are too great, they can still meet their environmental objectives through externally available greenhouse gas emission reduction measures. One such externally available measure, established by the Kyoto Protocol, is carbon offsetting" (p. 281).

This service can be purchased by private and business customers. Postal items that have been offset are labeled with the GoGreen label "Carbon neutral shipping with DHL" for international postal items and with the GoGreen label "Der CO_2-neutrale Versand mit der Deutschen Post" for items posted within Germany. This program has enabled DPDHL to claim that since July 2011, "parcels from private customers within Germany are sent carbon-neutrally at no extra charge" (CR report 2011, p. 62).

The analysis of the CR reports identified the reduction of CO_2 emissions as one of DPDHL's key CR issues. Rather than framing this as a responsibility that sits only within the corporate frame of responsibility, it is presented as an issue of shared responsibility between DPDHL, its business partners, its customers, and the logistics sector as a whole. The offsetting service is one example of how DPDHL approaches shared responsibility. Customers are asked to consider their options whether or not to choose a more sustainable option. Through offering an offsetting service, customers are asked to become involved in this CR issue.
By doing so, the GoGreen label, and its related services, contribute to re-drawing boundaries of responsibility around reducing carbon emissions. They suggest that the reduction of CO_2 emissions is a shared responsibility. DPDHL is not the only one responsible for reducing carbon emissions. Others are as well.

In the nine CR reports analysed, 78 pages out of 1401 featured the GoGreen label and related offsetting activities. DPDHL reports the number of carbon-neutral items sent and the amount of CO_2 offset as part of this program. When reporting on these numbers, no distinction is made between items that have been offset as the free-of-charge service (i.e., parcels within Germany) and the carbon-free postal items that were purchased by customers.

Table 8.2 shows the number of carbon neutral shipments and the amount of offsetting each year. The numbers show that carbon-neutral shipments increased from 2008 to 2012 and decreased after that. The numbers also show that the amount of offsetting has increased and then decreased, but in a different pattern to shipments. Offsetting increased until 2014 and then decreased in 2015. This is because the number of

Table 8.2: Carbon neutral shipments and carbon offset in tonnes per year

	Carbon neutral shipments	Carbon offset in tonnes
2008	144.529.981 million	More than 16,000 tonnes
2009	704.340.868 million	38,500 tonnes
2010	1.76 billion	82,000 tonnes
2011	1.86 billion	134,355 tonnes
2012	2.415 billion	179,889 tonnes
2013	2.365 billion	193,760 tonnes
2014	2.12 billion	255,113 tonnes
2015	More than 2 billion	253,434 tonnes

carbon neutral parcels has been increasing, while the number of letters has reduced. Due to the higher volume of parcels compared to letters, there is a displacement between the ratio of carbon neutral items sent and the offsetting required for them: "The significant increase in the overall carbon offset is linked to the fact that shipments from the express and parcel segments … emit more CO_2 than letter mail items" (CR report 2011, p. 62). This suggests a downwards trend in the use of DPDHL's offsetting services. Analysing what the GoGreen label does in the space of CR might suggest some answers for why attention is drifting away from this designed thing.

Each CR report analysed presented the number of carbon neutral shipments and the amount of offsetting in relation to these shipments. Another number presented in each CR report is the total carbon emissions generated by DPDHL's business activities each year. What is not presented, however, is the ratio of carbon emissions offset in relation to the total carbon emissions generated. This observation prompted me to calculate this ratio. Three Ratio Views were generated. They depict the years 2009 (Image 8.10, on page 145), 2012 (Image 8.11, on page 146), 2015 (Image 8.12, on page 147). The Ratio View is a visual representation of two measurements of carbon emission: 1) the total CO_2 emissions generated by DPDHL's business operations, including Scope 3 subcontracted transportation (shown in black), and 2) the amount of CO_2 offset by DPDHL (shown in blue).

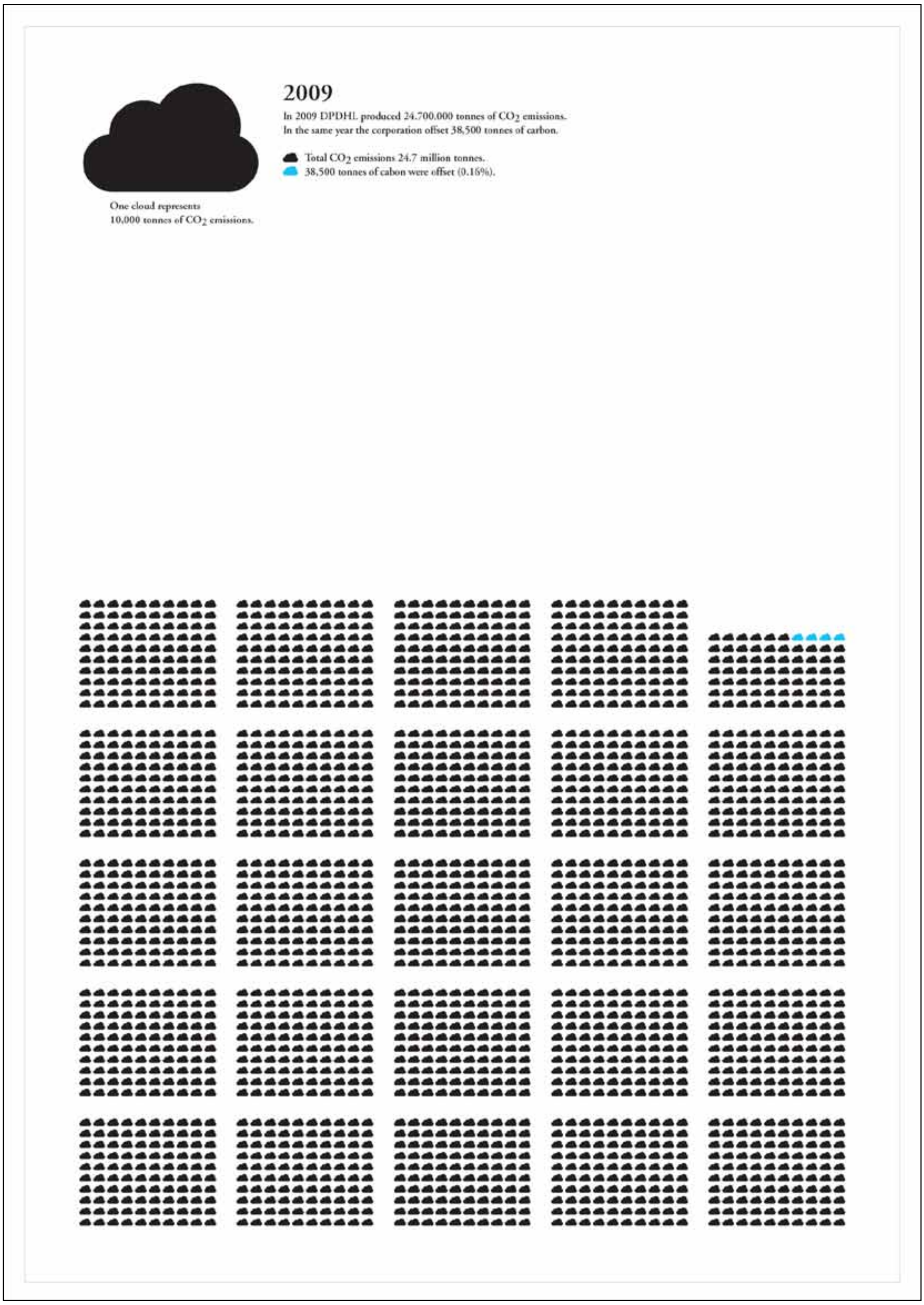


Image 8.10: Ratio Viewing exercise for CO2 emissions and offsetting for 2009.

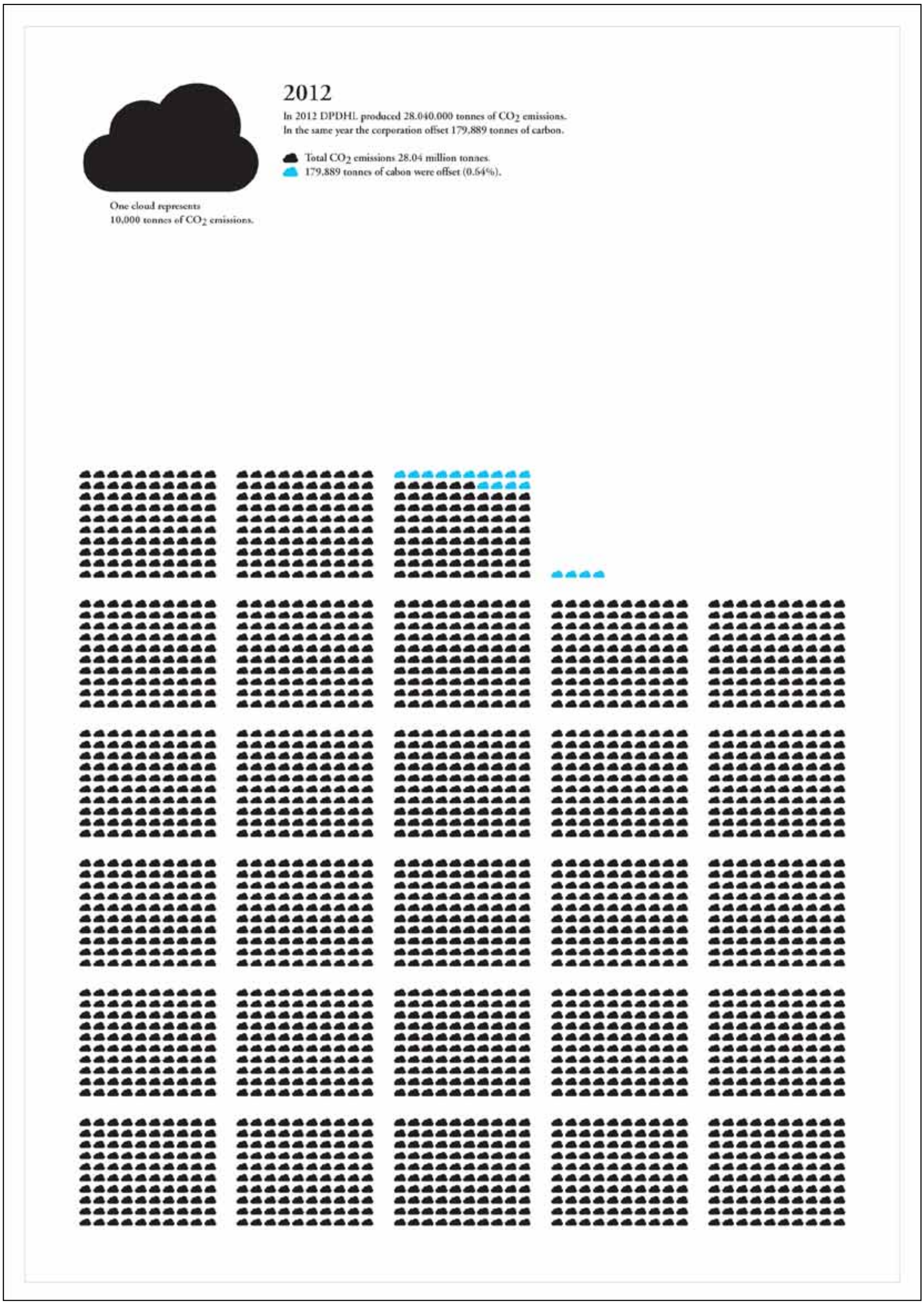


Image 8.11: Ratio Viewing exercise for CO2 emissions and offsetting for 2012.

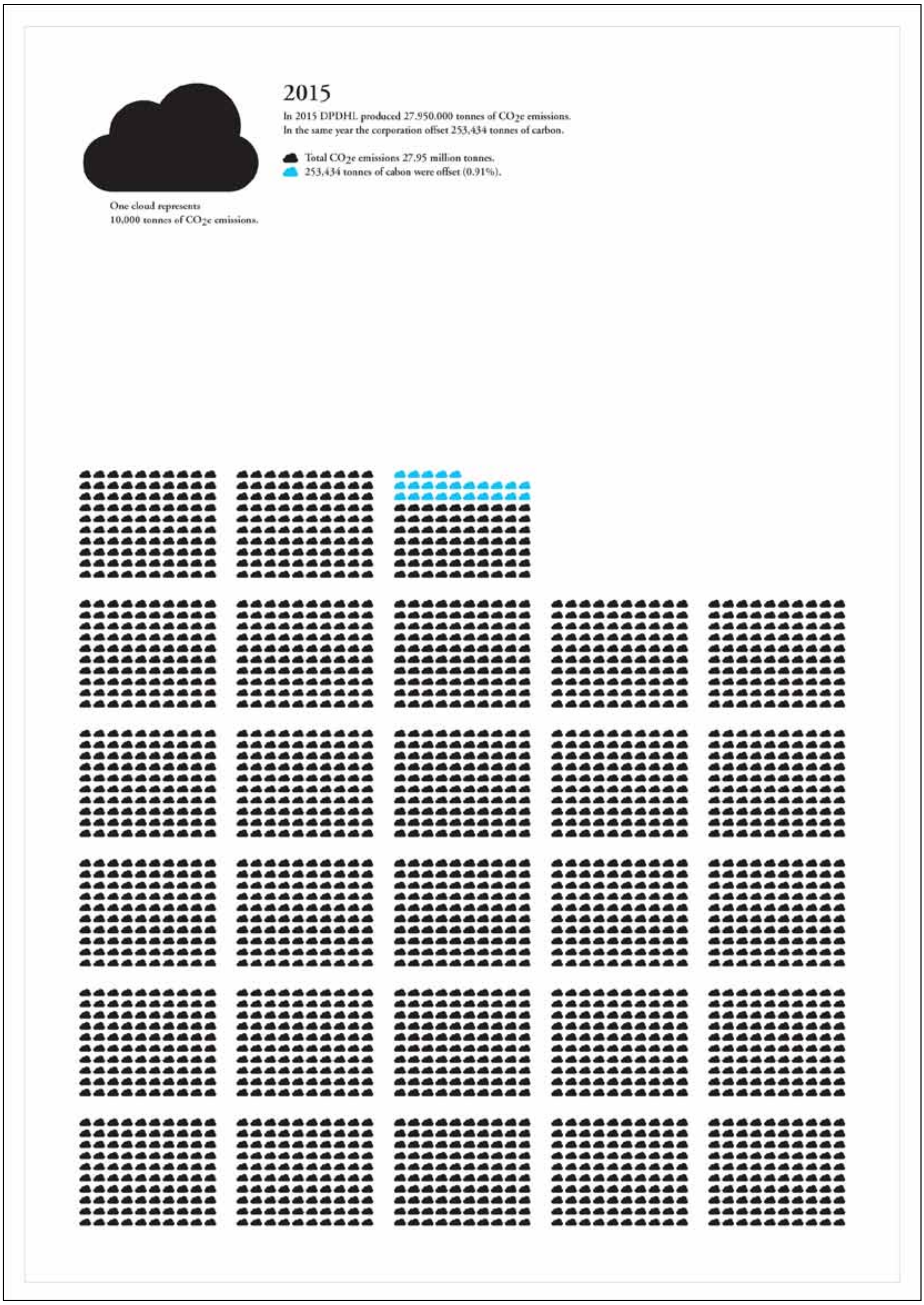


Image 8.12: Ratio Viewing exercise for CO2 emissions and offsetting for 2015.

The visuals show that the amount of carbon emissions offset has increased over time. This trend has been featured in the CR reporting. The visuals also show that the total CO_2 emissions generated by DPDHL increased between 2009 and 2012, from 24.7 million tonnes to 28.04 million tonnes, then stabilised from 2012 to 2015, reducing slightly to 27.85 million tonnes.

Bringing these numbers together shows how small the percentage of carbon offseting has been, compared to the total amount generated. The specific percentages are: 0.16% in 2009, 0.64% in 2012, and 0.91% in 2015. While the proportion of offsetting is growing, it still seems rather small compared to the amount generated. This visual also shows how much CO_2 emissions have been generated by just one corporation. Considering that every cloud in the visual represents 10,000 tonnes of CO_2 emissions, the volume generated appears large. This evidences how the choice as to what is represented can shape perceptions concerning the extent to which the corporation is acting responsibly.

To start unpacking how the GoGreen label is mobilised in the space of CR, I conducted an Agency Mapping exercise. The outcome of this exercise is shown in Image 8.13. It shows that the GoGreen label "Carbon neutral shipping with DHL" and related services are mobilised to 'evidence actions that have taken place' and to 'shape the brand identity.' This suggests that the GoGreen label and related services were used to demonstrate that DPDHL addressed its responsibilities. It also suggests that offering an offsetting service enabled DPDHL to portray itself as a responsible corporation.

The Agency Map also shows that most attention was given to the GoGreen label in the CR reports 09/10 and 2010. There is less engagement with the GoGreen label in the other CR reports. The roles 'evidencing actions that have taken place' and 'shaping the brand identity' are dominant in these two CR reports. The role 'providing insights that enable actions' is another one that is strong in these two CR reports. This is of interest, as these two reports show a strong link between past actions and future actions in relation to offsetting. This link seems much weaker in the other CR reports.

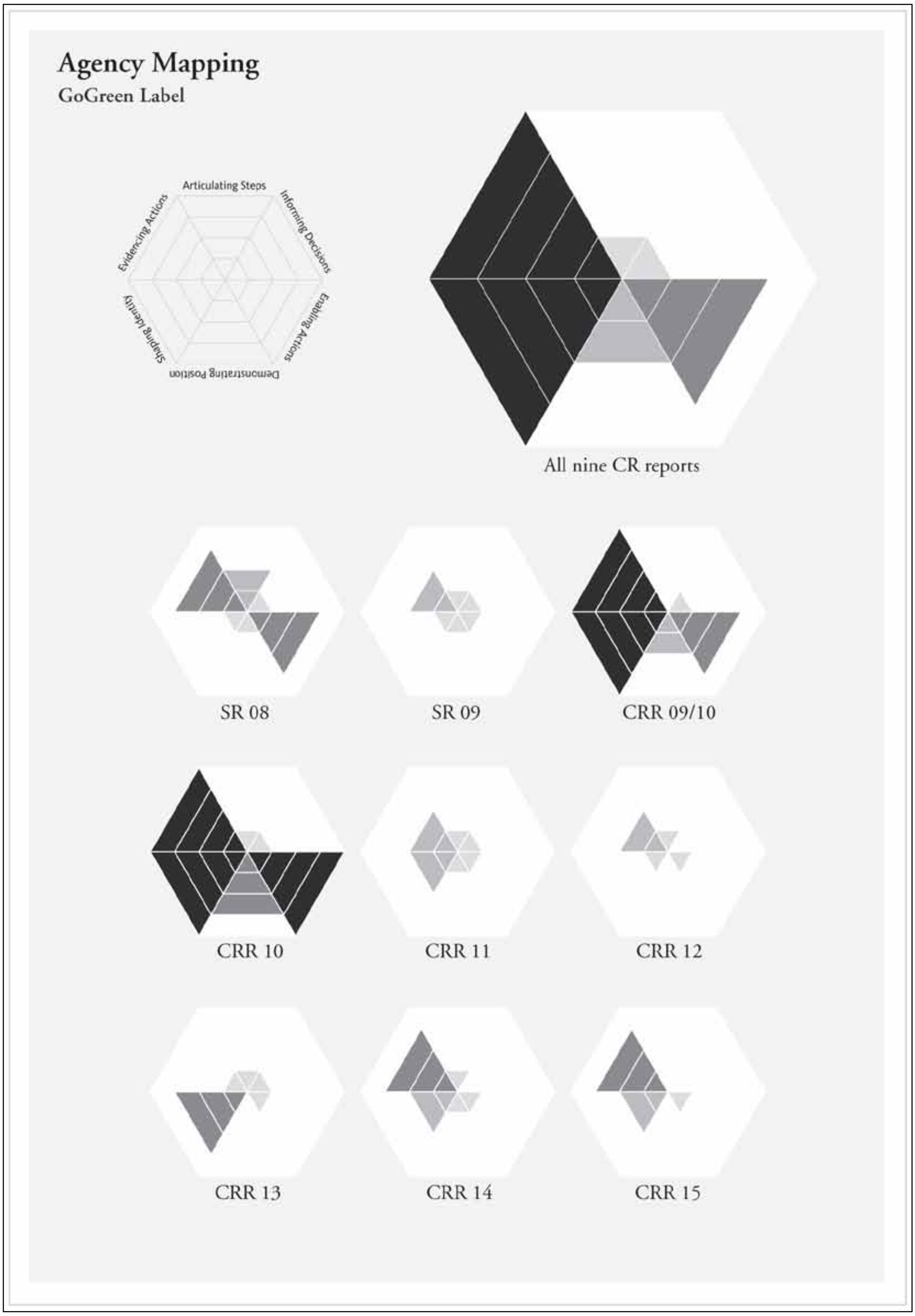


Image 8.13: Agency Mapping exercise for DPDHL's GoGreen label and its related offsetting service.

Another interesting observation about the GoGreen label and its related offsetting service can be made in relation to the role 'providing insights that enable actions,' which is a future-directed role. When looking at this role over time, it becomes weak from 2011 onwards. The same applies to the other two future-directed roles of 'articulating steps towards desired ends' and 'providing insights that inform decision-making.' The absence of all future-directed roles suggests that the GoGreen label was not being mobilised in relation to future-directed actions from 2011 onwards. It was more used to 'evidence actions that have taken place.'

The Agency Mapping exercise allowed a summary of all nine CR reports combined. It also presents nine individual visualisation, one for each CR report. Looking at these nine individual visualisations, one notices that little attention is given to the GoGreen label and related offsetting projects from 2011 onwards. A reason for the shift of emphasis away from the GoGreen label could be that offsetting does not address the structural reasons for producing CO_2 emissions through DPDHL's business activities. It is not as strongly related to DPDHL's CR strategy as other CR initiatives. Offsetting can be understood as a more 'outsourced' approach towards mitigating CO_2 emissions. Other CR activities work to align DPDHL's overall business strategy with future expectations.

Also communicated in the CR reports were selected examples of various offsetting projects that DPDHL funded as part of their offsetting service. However, not much information is provided about them. An exception is the project " 'Save80' stoves" (CR report 2013, p. 228). This is the most prominent of the offsetting projects presented in the CR reports. DPDHL seems to be more than merely the sponsor of this project. DPDHL refers to this project as 'our' carbon offsetting project (CR report 2014, p. 99).

A number of other offsetting projects are reported in relation to the offsetting service. In these offsetting projects, carbon emissions are reduced, for example, by using more energy efficient devices and technologies, by using renewable energy or through reforestation. Participants and settings involved in offsetting projects are often from developing countries, giving many offsetting projects a flavour of philanthropic giving. These projects are portrayed as enabling emission reduction. At the same time, they are portrayed as having social benefits, such as generating work for people in the community, providing heath benefits, and using fewer natural resources. Such choices enable DPDHL to be associated with the social benefits that these kinds of projects bring. This enables DPDHL to position the offsetting projects as 'shared value.' This explains the close association between offsetting and 'shaping brand identity' in the CR reports.

As has been mentioned before, postal items that have been offset are labeled with the GoGreen label "Carbon neutral shipping with DHL." This label, which is placed on the physical object, can be understood as a signifier that offsetting is part of the logistics service provided. It brands the postal item as carbon neutral. This visual cue, however, does not provide any further evidence of when and where this offsetting took place. It only references 'sustainable' actions that are taking place in the background. It does this with a simple logo with a claim. The GoGreen label is a mechanism that allows the sender and/or the service provider to acknowledge responsibility and enable mitigating actions. The GoGreen label acts as a signifier, highlighting that mitigation, in lieu of direct action, has taken place. What is backgrounded are the 'other' actor-networks mobilised in lieu of direct action.

The act of translating a postal item into a GoGreen item and labelling it accordingly is somewhat removed from the actual process of reducing carbon emissions. While carbon emissions may be reduced elsewhere, these reductions do not relate to the impact of the postal item. Offsetting provides a mechanism for engaging with the CR issue of carbon emissions. This engagement does not require one to re-think their own business practices. Offsetting services can therefore be described as an intermediary. They enable an action that is responsible for carbon emissions to be translated into an action that has taken responsibility for CO_2 emissions without significant change to the actor-network associated with that action. Latour (1999) describes intermediaries as providing a service that enables smooth translation. Mediators, by contrast, actively impact the actors that engage with them. Unlike intermediaries, mediators reconfigure actions (p. 186). Offsetting services offers a smooth way for corporations to participate in the CR issue of carbon emission. It offers an easy access point to engage with the issue without asking those that use the service to change. It does not disrupt existing business operations.

To better understand what the GoGreen label does in the space of CR, it is helpful to look at its relation to other actors. Together, these actors assemble to act towards offsetting emissions. The complexities of this performative association unfold further when considering the different actor-networks that come together in the space of offsetting. There is the postal item itself, which has to generate transport emissions. These emissions have to be calculated. There has to be those that offer the offsetting service, and those that use it and are willing to pay for it. The concept of carbon credits has to be established and shared between actors. Offsetting projects that reduce emissions also need to be available. External actors that examine the quality standards of such offsetting projects are also vital to verify the reduction of reported emissions. Valid methods and measurement tool are also necessary to verify carbon offsetting. Government regulations and public expectations on reducing CO_2 emissions have to put pressure on corporations to engage with the mitigation of carbon emissions. These are just a few of the actor-networks that shape how the GoGreen label, and its related services, are understood. Together, these different actor-networks act towards mitigating carbon emissions. They act in relation to each other. Being aware of these relationships enables one to better understand what the GoGreen label and its related services do in the space of CR.

Summary

One of the primary roles of the GoGreen label 'Carbon neutral shipping with DHL' is to act as a signifier that offsetting is part of the logistics service provided. The GoGreen label makes these actions visible. This form of making visible enables the sender and the service deliverer to be perceived as sustainable and responsible. At the same time, the offsetting service offers a way to reduce reported carbon emissions. This suggests that the GoGreen label serves different roles within the context of CR. On one hand, it is a communication tool. On the other hand, the service of offsetting itself can be understood as an intermediary that offers an indirect engagement with the reduction of carbon emissions in lieu of direct actions.

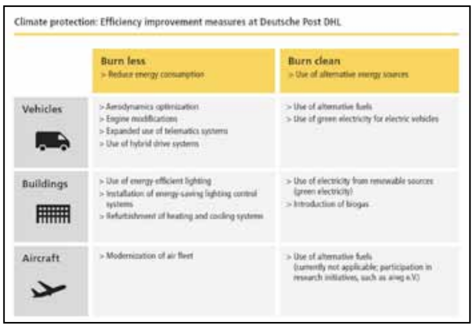
Designed Thing No. 4
DPDHL's Electric Vehicle

DPDHL's electric vehicle is the fourth and final designed thing analysed. DPDHL has a number of electric vehicles in their fleet. These vehicles comprise fuel cell and full electric vehicles. The electric vehicle is very present in the CR reports; particularly when compared to other designed things presented in the CR reports. The electric vehicle is mentioned on 69 pages. Many references are made through text and numbers reporting both past actions and future intentions. There are also 35 visual representations of electric vehicles presented throughout the nine CR reports. These visual representations take the form of diagrams, tables, and images (see Image Set 8.2 for examples). Together, these references to electric vehicles provide a narrative that positions them as a centre piece of DPDHL's CR agenda around sustainability, GoGreen.

Image Set 8.2: Visual representations of electric vehicles

CR report 2010, p. 28

DPDHL's StreetScooter electric vehicle, CR report 2013, p. 137



Climate protection: Efficiency improvement measures at Deutsche Post DHL

	Burn less > Reduce energy consumption	Burn clean > Use of alternative energy sources
Vehicles	> Aerodynamics optimization > Engine modifications > Expanded use of telematics systems > Use of hybrid drive systems	> Use of alternative fuels > Use of green electricity for electric vehicles
Buildings	> Use of energy-efficient lighting > Installation of energy-saving lighting control systems > Refurbishment of heating and cooling systems	> Use of electricity from renewable sources (green electricity) > Introduction of biogas
Aircraft	> Modernization of air fleet	> Use of alternative fuels (currently not applicable; participation in research initiatives, such as aireg e.V.)

CR report 2013, p. 201

When the electric vehicle is presented in the CR reports, it appears through textual references, numerical measures and visual elements. The incorporation of electric vehicles into the fleet is predominantly presented as an Research and Development (R&D) activity. Here, it is presented through narratives and achievements of past R&D projects. It is also presented in relation to future R&D efforts.

Conducting an Issue Response Mapping exercise unpacked this observation further. It identifies how the electric vehicle is positioned in relation to DPDHL's material issues. 114 instances were identified that relate the electric vehicle to DPDHL's material issues. The outcomes of the Issue Response Mapping exercise show that the electric vehicle relates to four material issues. These are (with the count for each given in parentheses):

- Innovation & Future Technologies (x 67)
- Air Pollution & Noise (x 33)
- Energy Efficiency (x 13)
- Environmentally & Socially Responsible Products & Services (x 1)

The visual exercise to represent these numbers is shown in Image 8.14 on the next page. The Issue Response Mapping exercise indicates that the electric vehicle is primarily associated with 'Innovation & Future Technologies.' This suggests that it is positioned as a future-directed, innovative technology. The Issue Response Mapping exercise also indicates that the replacement of fossil fuel powered vehicles with electric vehicles contributes to improving air pollution and noise, as well as energy efficiency. But this seems to be secondary in how the electric vehicle is presented in the CR reports.

"Our delivery vehicle of the future: StreetScooter" (CR report 2013, p. 214).

Once I discovered that the electric vehicle was primarily located in the R&D space, I explored this further by looking for reasons provided for why DPDHL invested in the R&D of electric vehicles, and how this was related to their CR strategy and the CR issue of mitigating CR emissions. I also looked for relevant points in time where a shift in the engagement

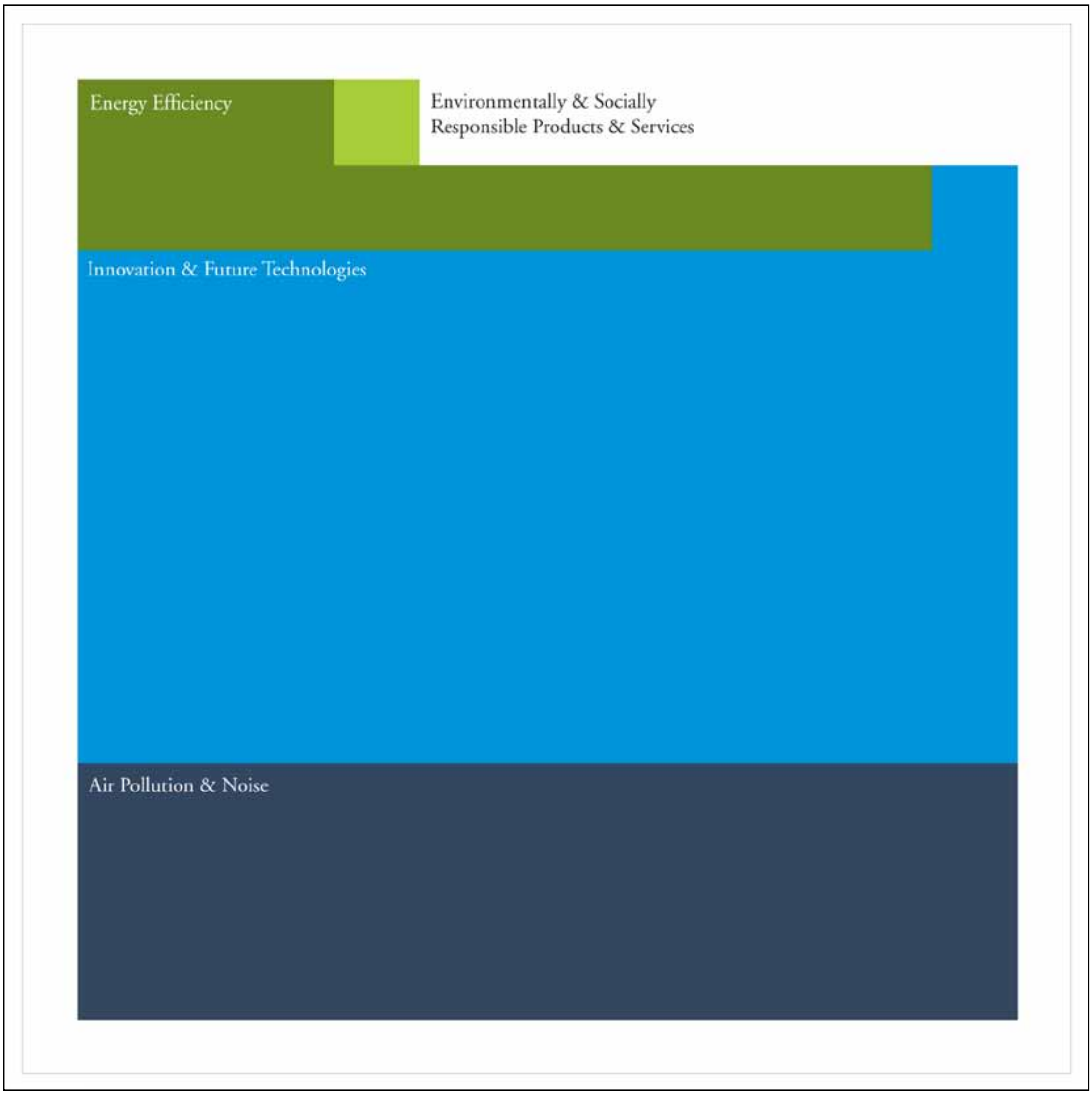


Image 8.14: Issue Response Mapping exercise for DPDHL's electric vehicles.

with electric vehicles in R&D can be noticed. I did this by going back to the data. I read and re-read the texts, numbers and visuals provided in the CR reports.

The following story was retrieved from fragments of information across the multiple CR reports. Around 2008, DPDHL became more interested in electric vehicles for use in their corporate fleet. They tested various electric and hybrid vehicles from automobile manufacturers for use in their delivery operations. Due to the limited availability of small commercial vehicles with sufficient loading capacities, DPDHL partnered with the RWTH Aachen University to develop a commercial vehicle that suited DPDHL's requirements. This collaborative project was first mentioned in the CR report 2012 (p. 66). Out of this collaboration, the StreetScooter, a commercial delivery vehicle, was developed. It was first mentioned in the CR report 2013 (p. 169, pp. 209-210, p. 212, p. 214). In December 2014, DPDHL purchased StreetScooter GmbH, including the rights to develop and produce the vehicles (CR report 2014, p. 4, p. 16). Since then, further electric vehicles for commercial use were developed by StreetScooter GmbH, such as WORK, WORK L, WORK XL, WORK BIKE and WORK TRIKE. Initially, StreetScooter GmbH developed and manufactured electric vehicles exclusively for DPDHL. Since April 2017, it offers their vehicles for general purchasing (Schwarzer, 2017).

The narrative above is one of problem recognition, action, testing, and resolution. Referencing the achievements made towards developing commercial electric vehicles are prominent in DPDHL's CR reports[4]. To unpack this narrative further, an Agency Mapping exercise was conducted. The outcome of this exercise is shown in Image 8.15. It reveals that the most prominent function performed by the electric vehicle in the CR reports was to 'evidence actions that have taken place.' This is achieved by reporting on R&D actions and results, such as the development of the StreetScooter. The Agency Mapping exercise also revealed that the electric vehicle is mobilised in relation to all six functions of CR reporting. While the electric vehicle performs different roles at different times, the mapping shows that all roles are performed at one time or another. This is in contrast to the previous designed things discussed (i.e., the Materiality Analysis, the Carbon Dashboard, and the GoGreen label), which all had one or two prominent functions. The referencing of electric vehicles performs all six functions of CR reporting.

4 This narrative is also told in other channels of DPDHL's corporate communication. For example, DPDHL's R&D engagement with electric vehicles is regularly featured on the corporate website.

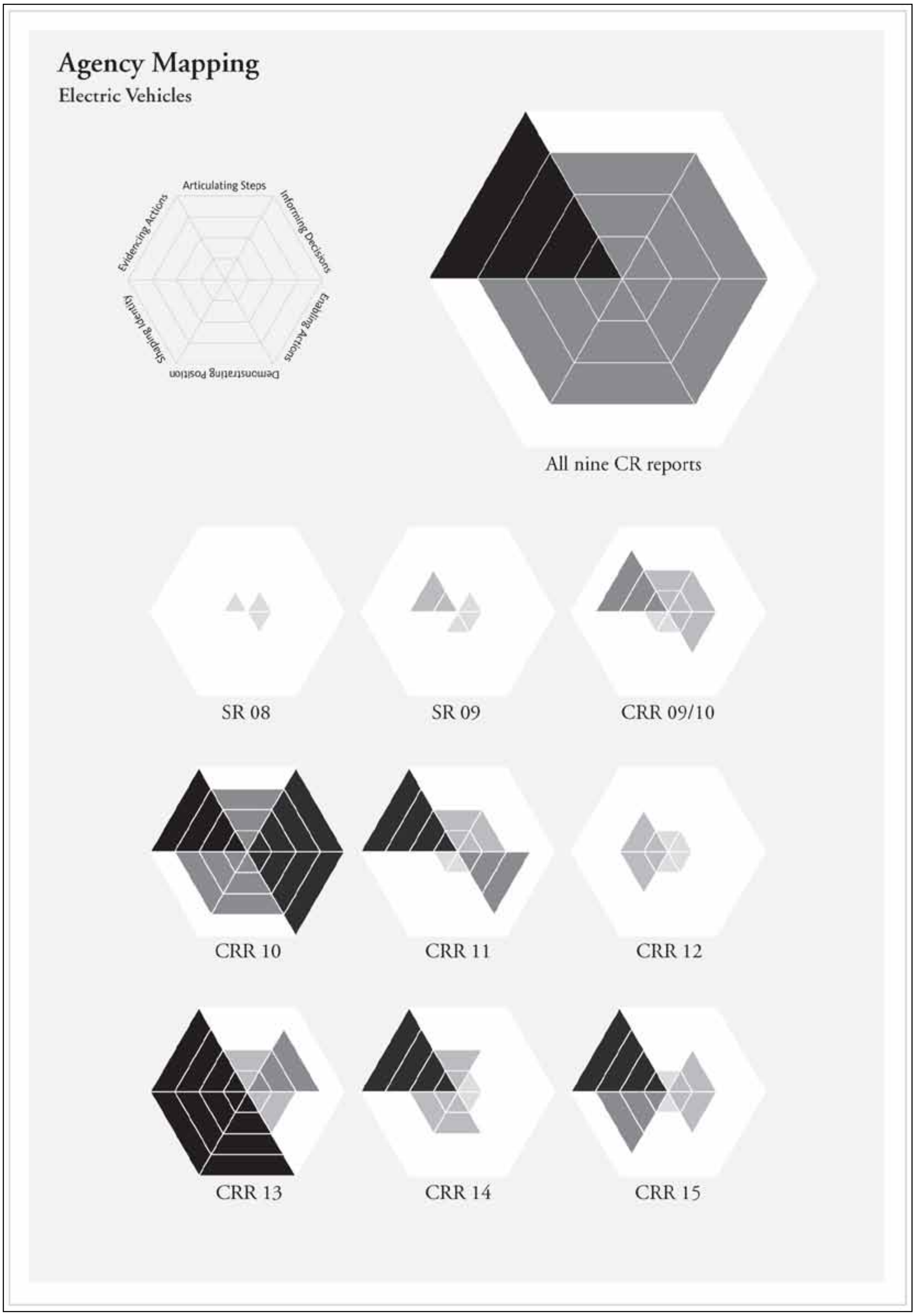


Image 8.15: Agency Mapping exercise for DPDHL's electric vehicles.

The Agency Map also reveals that the prominence of the electric vehicle varies throughout the nine CR reports. The CR reports 2010 and 2013 feature the electric vehicle more prominently. These two reports recorded specific achievements. The CR report 2010 focused on expanding the testing of electric vehicles for mail and parcel deliveries within Germany. The CR report 2013 introduced the StreetScooter. In the CR report 2013, the roles 'demonstrating the corporation's competitive position' and 'shaping the brand identity' are also very present in the data. That is, the launch of the StreetScooter was positioned as delivering a competitive advantage to DPDHL. It was also positioned as an example of good corporate citizenship.

Developing commercial electric vehicles for transport contributes to shaping expectations and realities concerning transport and logistics futures. The initiative contributes to setting new standards for a corporate fleet. This is not only for DPDHL, but also for other corporations. Being perceived to be a proactive player in the space of e-mobility shapes the corporate image. In this way, the corporation is transformed; not only by their acquisition of electric vehicles, but through references to this process in the CR reports. Callon (2002) describes writing and (re)writing devices as "tools used by the actors to organize themselves" (p. 191). Translating Callon's (2002) notion to a different context, other forms of engagement with an issue can contribute to how the story unfolds. The designed thing is "shaped by the novel." However, at the same time, it also plays its part in how the novel continues. It enables the story "to progress" (p. 200). The electric vehicle is shaped by those actors that bring it into being. At the same time, it influences how DPDHL understands itself, and how the corporation develops into the future.

Taken together, engaging with electric vehicles brings different benefits for DPDHL. Investing in the research and development of commercial electric vehicles shapes public perceptions of DPDHL as a responsible and sustainable corporation. Being associated with new and future-oriented technologies might also contribute to rejuvenating the corporate image. DPDHL's participation in the development of commercial electric vehicles can be primarily understood as a means to strengthening the brand, and making it more resilient. Acquisition of electric vehicles enables the corporation to act out responsible corporate behaviour. At the same time, it enables DPDHL to acquire knowledge and expertise in this area. Knowledge and expertise acquired in this area also contribute to getting DPDHL future-ready. DPDHL's engagement with electric vehicles helps to prepare the corporation for a less carbon intensive transportation future.

The electric vehicle is presented as a future-oriented and sustainable mode of transport. DPDHL positions itself as a proactive player in this space. Its R&D investments provide evidence for this claim. DPDHL's proactive approach to electric vehicles reflects the attitude that "framing is the norm and overflows are the leaks" (Callon, 1998, p. 250). In this approach, the boundaries of corporate responsibility are constantly framed and reframed to keep overflows to a minimum. DPDHL's engagement with electric vehicles can be understood in this way[5].

> "In a move to not only affirm but advance our role as a pioneer in the use of electric delivery vehicles, in 2014 Deutsche Post DHL Group acquired StreetScooter GmbH" (CR report 2014, p. 16).

> "There's no doubt that logistics has an impact on the environment. But here again, as the market and innovation leader, we can, want and must be a very clear role model. And we're doing just that. For instance, our internally developed StreetScooter delivery vehicle will set the standard for e-mobility for some time to come" (CR report 2015, p. 129, Jürgen Gerdes).

Although the electric vehicle is predominantly presented as an R&D activity, it is also presented as part of DPDHL's corporate fleet. Here, it is depicted as a future-directed technology. It is also presented as an innovation they are increasingly adopting. As can be seen in Table 8.3, the electric vehicle has increased from 4 vehicles in 2008 to 937 in 2015. Over time, DPDHL has trialled different types of electric vehicles as part of their fleet. The StreetScooter is now the most

5 "The StreetScooter, the Group's own electric vehicle for delivering mail and parcels, is another example of Deutsche Post DHL Group consciously taking the lead on climate. What prompted us to do this? It's simple: an electric vehicle that met our requirements didn't yet exist on the market. So we seized the initiative and built it ourselves." Blog entry by Frank Appel from 28 June 2017, para 7, https://delivering-tomorrow.com/climate-efficient-logistics-is-possible/, last viewed 26 January 2018.

prominent. In operation, the electric vehicle is used for the pick up and delivery of mail in urban areas.

Table 8.3: Fleet vehicles and electric vehicles/fuel cell vehicles

	Fleet vehicles in total	Electric vehicles/fuel cell vehicles
2008	–	4
2009	more than 120,000	12
2010	–	28
2011	more than 80,000	131
2012	approximatly 80,000	149
2013	more than 89,000	304
2014	90,040	406
2015	91,973	937

Every CR report between 2008 and 2015 presents the number of electric vehicles incorporated into the fleet. Most CR reports also present the total number of vehicles in the fleet, including electric vehicles. What is not presented in the CR reports, however, is the ratio of electric vehicles in relation to the entire fleet. In order to examine what this ratio is, three Ratio Views were generated. They depict the years 2009 (Image 8.16, page 162), 2012 (Image 8.17, page 163), 2015 (Image 8.18, page 164). The Ratio View is a visual representation of three types of vehicles: 1) fuel vehicles (black), 2) vehicles with alternative drive systems (dark blue), and 3) electric vehicles (light blue). Together, they represent the total number of vehicles in DPDHL's corporate fleet.

Comparing the three Ratio Views, one notices that the number of electric vehicles has increased over time. This also applies to vehicles with alternative drive systems. The number of fuel vehicles decreased by 1/3 between 2009 and 2012. It increased slightly from 2012 to 2015. The Ratio Views also shows that the number of electric vehicles is still small compared to the entire fleet. While there is an increase in numbers of

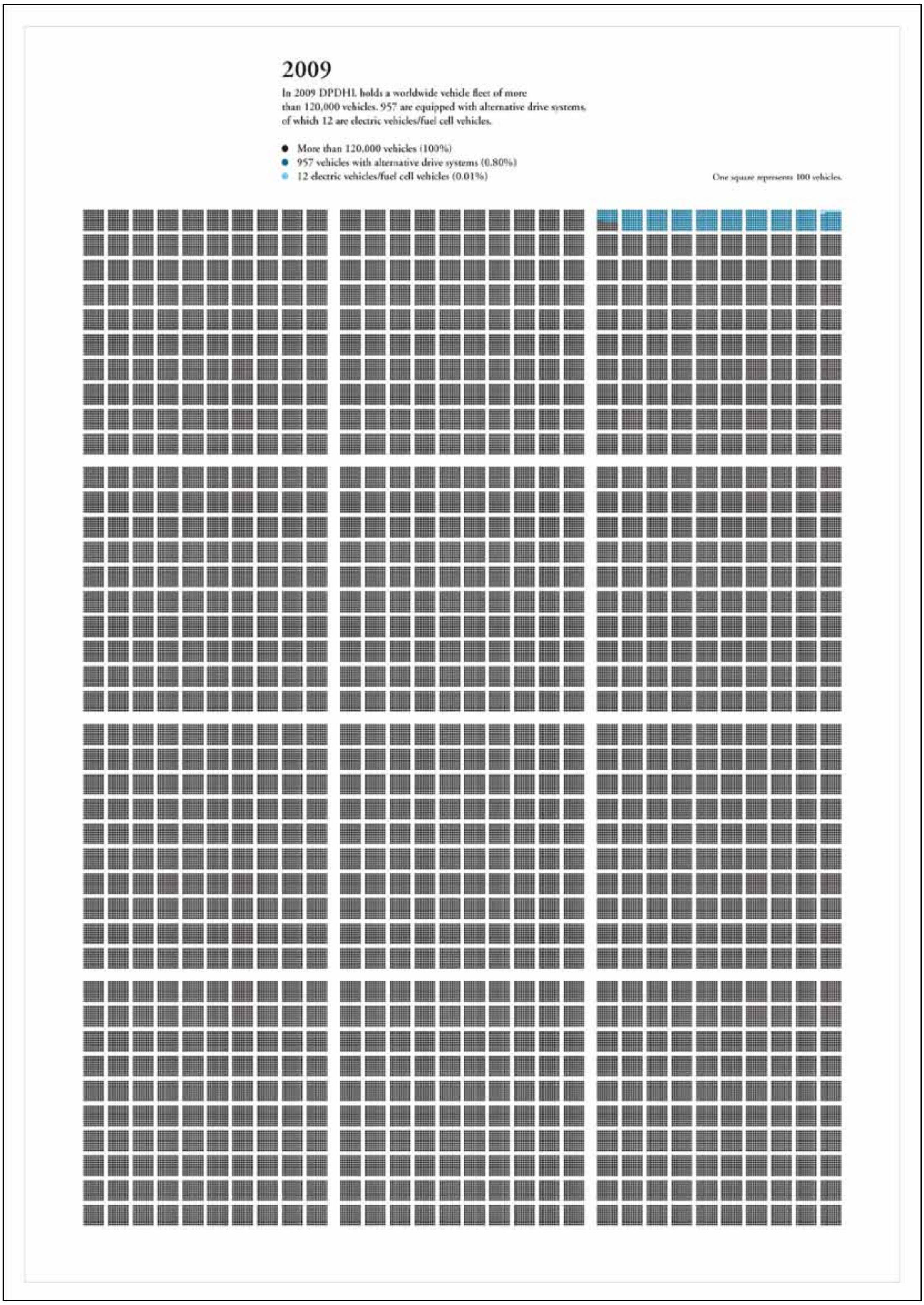


Image 8.16: Ratio Viewing exercise for corporate fleet and electric vehicles for 2009.

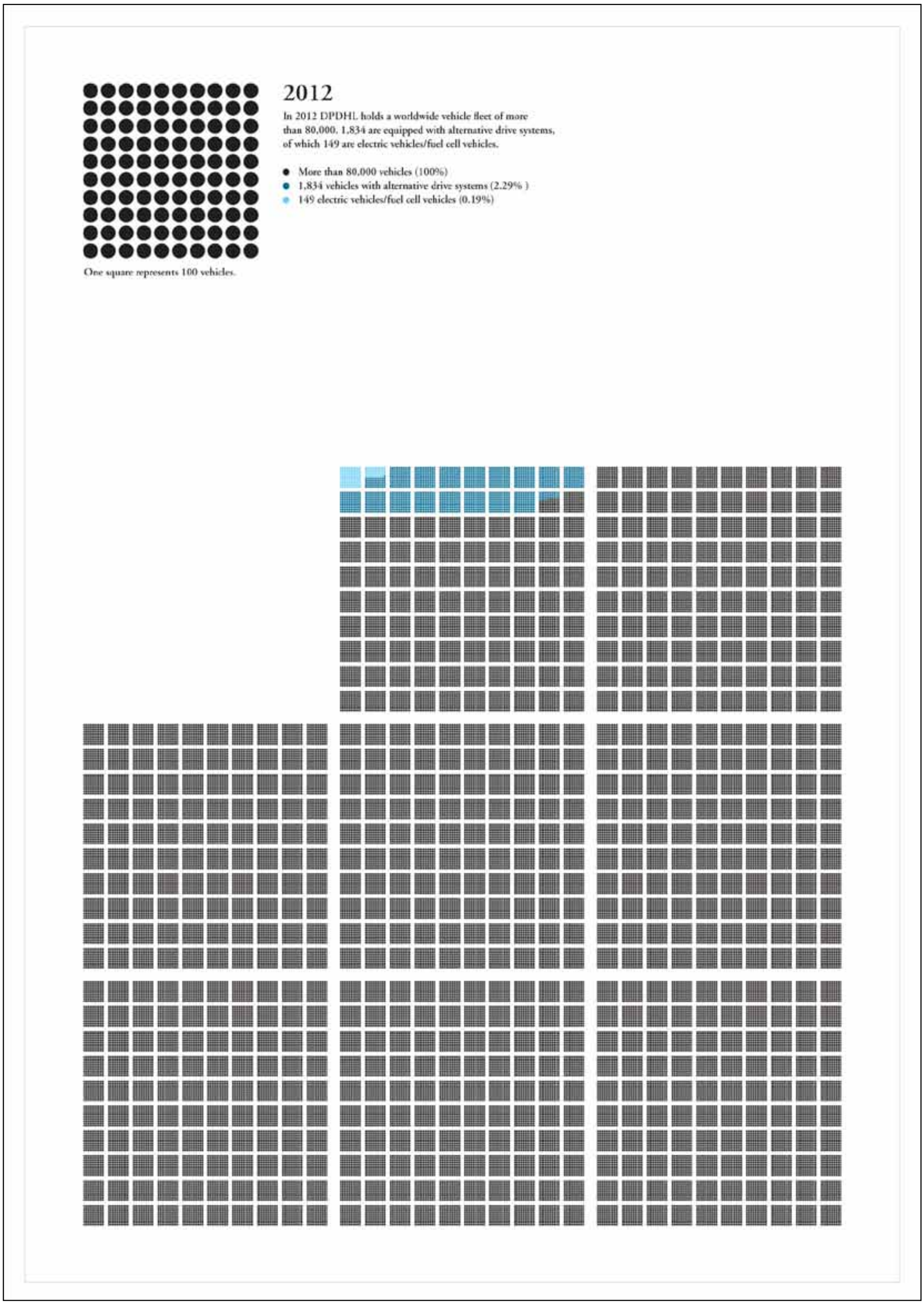


Image 8.17: Ratio Viewing Exercise for corporate fleet and electric vehicles for 2012.

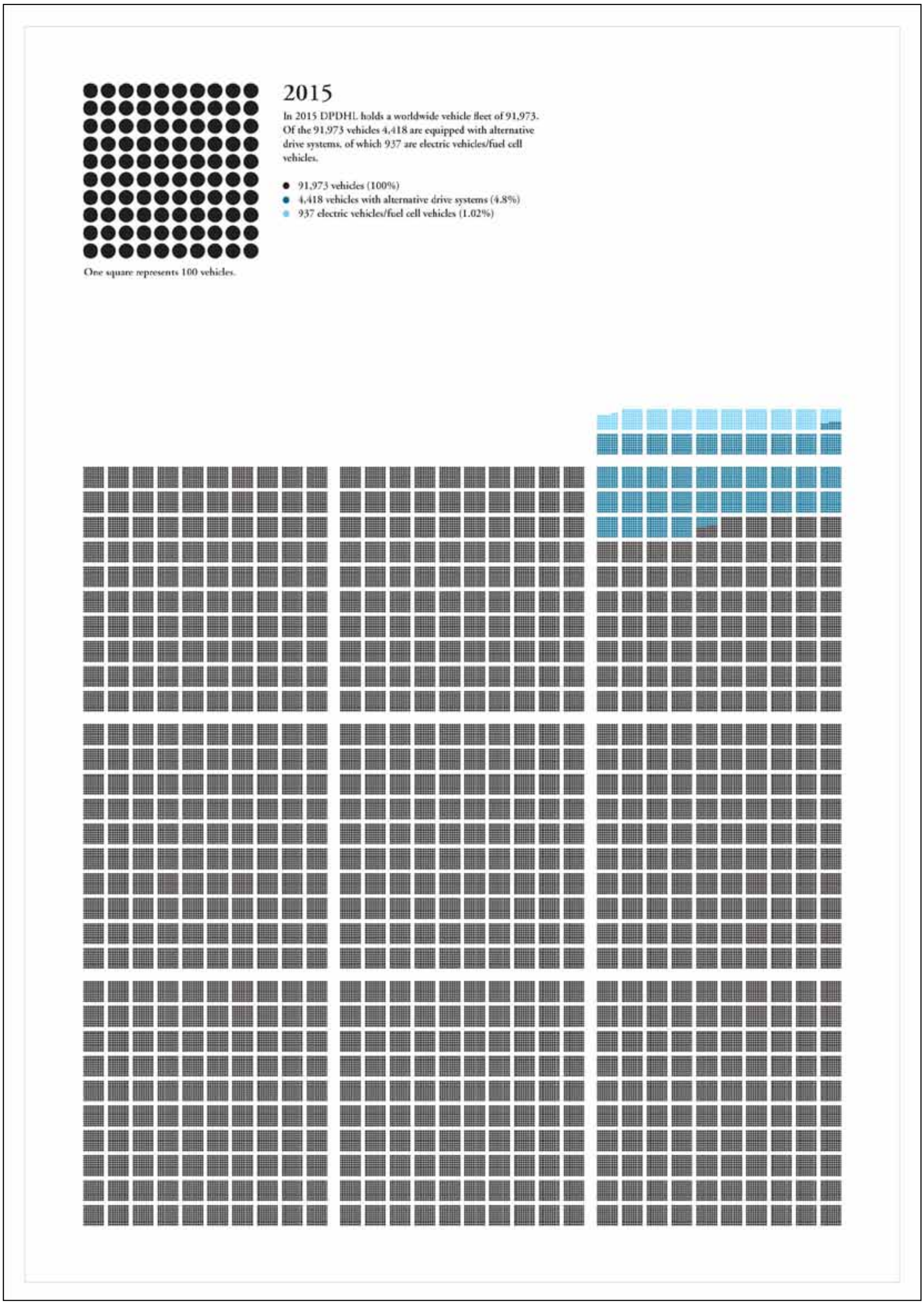


Image 8.18: Ratio Viewing exercise for corporate fleet and electric vehicles for 2015.

electric vehicles, the Ratio View makes visible that these vehicles still represent only a small proportion of the fleet.

The electric vehicle is predominantly depicted as a cleaner mode of transport when compared to conventional fuel vehicles (CR report 2015, p. 110; CR report 2011, p. 52). There are a few instances where it is described as energy efficient or 'carbon-free' (CR report 2014, p. 106; CR report 2013, p. 214). This indicates that DPDHL represents the environmental benefits of electric vehicles in their fleet as the reduction of air pollution and noise.

Images of the electric vehicles are shown in the CR reports. In these images, the vehicle is branded with corporate colours and logo. It is also branded as an electric vehicle. This branding indicates that electric vehicles themselves are mobilised as signifiers of e-mobility when on the road. They are a form of driving billboard, which does two things. First, it advocates for e-mobility. Second, it presents to the public that DPDHL is a future-directed and sustainable corporation.

Summary

The electric vehicle mitigates the CR issue of carbon emissions in different ways. It mitigates this CR issue by investing in R&D of electric vehicles for commercial use. The electric vehicle is positioned as an appropriate vehicle to perform the roles of exiting fossil fuel vehicles, but without generating the same emissions. These electric vehicles are gradually integrated into the corporate fleet. The electric vehicle performs further roles of advocating e-mobility and representing DPDHL as an environmentally responsible corporation. The electric vehicle contributes to the mitigation of multiple CR issues. It contributes by reducing air pollution and noise. It also contributes to giving e-mobility a material presence. Reducing CO_2 emissions is not represented as prominently in discussing the electric vehicle in CR reports. It seems to be a secondary role played by the electric vehicle in operation. Beyond corporate communication, electric vehicles are mobilised outside of CR reporting as signifier of e-mobility in combination with corporate branding – the electric vehicles as a form of driving billboard. The engagement with electric vehicles is also mobilised to provide evidence that DPDHL acts towards its acknowledged responsibilities. It further suggests that DPDHL is proactive in this space and shows leadership.

8.3 Discussion: Roles Played by Designed Things in the Context of CR

The previous section presented the four designed things analysed in the fourth and final phase of data engagement. In this section, I present a broader discussion of the roles of designed things in the space of CR. These understandings arose through the process of analysing the four selected designed things reported above. This discussion is also informed by the broader engagement with DPDHL's CR reports and the many other designed things that play a role in these reports.

Designed things contribute to identifying issues, responsibilities and responses towards CR issues

Analysis of the CR reports revealed different activities performed by designed things within CR. One of these activities was the identification of trends, risks and opportunities in relation to the corporation's business environment. This work is part of the larger activity of identifying the corporation's frame of responsibility more generally.

DPDHL's Materiality Analysis is a good example of a designed thing that participates in the identification of CR issues. In performing this role, the Materiality Analysis makes issues visible and allows for their clarification. The Materiality Analysis, and its related processes, gather and analyse stakeholder and external input so that issues are considered to be a part of DPDHL's responsibilities. Other designed things exist that are also employed in identifying issues, responsibilities and responses. These include DPDHL's Issues Management tool, DPDHL's future studies series and trend reports, their corporate blog *Delivering Tomorrow*, as well as events and different dialogue formats for consultation with issue experts and stakeholders. All these designed things gather and analyse information. Information gathered and organised by these designed things helps the corporation to prioritise issues, delimit responsibilities and target responses. These designed things are important tools that assist the corporation to frame and reframe its responsibilities. They enable the corporation to better understand what is likely to pose a reputational risk, and what the perceptions of different interest groups are in relation to negative externalities of corporate actions. If used strategically, these tools can be used to justify CR decisions and to manage stakeholder relationships. Designed things that are concerned with identifying issues, responsibilities and responses, translate diverse inputs into intelligible representations. That is, they translate multiple voices and concerns into an actor that can stand in for that multiplicity. The output these designed things generate shapes how CR issues are understood and approached.

Designed things contribute to measuring and analysing issues and responses towards issues

Some designed things acting in the space of CR are engaged with measuring and analysing issues and responses towards issues. The understandings that can be generated from these processes of measuring and analysing can be used to inform decision-making. They can also be used to justify decisions. In order to measure and analyse issues, data input often needs to be translated into some kind of a numeric system. Outputs of measurement and analysis processes are given through numbers and visualisations, as well as references in text. Results are often simplified and black boxed to enable one to easily access and comprehend complex data sets.

DPDHL's Carbon Dashboard is a good example of a designed thing that is engaged with measuring and analysing performative effects produced by corporate activities, in this instance carbon emissions. Here, the output translates a complex issue into an easily communicated and actionable form. Various other tools perform similar roles on behalf of DPDHL and their customers. These tools translate different forms of data into a 'business language' of measurable outcomes. This kind of designed thing acts to reconfigure complex effects delivered by diverse and interconnected actor-networks into simple and actionable figures. They enable progress towards mitigating a CR issue to be measured and monitored. They help the corporation to assess the effectiveness of corporate action to address identified responsibilities.

By translating information into different forms of textual, numerical, and visual output, the designed thing pre-selects what will be considered important. It determines what is foregrounded and what is backgrounded. Outputs shape how the issues are understood. MacKenzie et al. (2007) refer to the performative dimension of designed things that measure and analyse. Cochoy et al. (2010), Miller (2008), and Callon and Muniesa (2005) discuss tools and equipment in similar ways. These authors suggest that this kind of designed thing is performative in that the translation of input into output produces a new reality. When a complex issue is translated into a simple indicator, action on that issue is shaped in relation to this indicator. Such tools shape how an issue is understood. By doing so, the designed thing suggests modes of engagement with the issue.

Designed things contribute to mitigating an issue

A designed thing that is performing a necessary role but with undesirable effects can be translated to other designed things that can perform these roles with fewer problematic effects. For example, a corporate fleet that produces CO_2 as a side-effect is being replaced with more sustainable modes of transport. Designed things capable of performing roles with less problematic effects can be considered as the core of CR-related actions. The other CR-related actions identified gather around these designed things. They exist in relation to them, by identifying, analysing and communicating these 'core' CR-related actions. The existence of the 'core' CR-related actions justifies the 'other' CR-related actions. Designed things contributing to the mitigation of issues enable the corporation to take concrete steps to address these issues.

The electric vehicle provides a good example of a designed thing that acts in this way. The development of electric vehicles, and the substitution of electric vehicles for fossil fuelled vehicles, achieves concrete steps towards reducing carbon emissions. There are many other designed things that are employed in similar ways to reduce carbon emissions. These include products made from recycled materials or less carbon-intensive manufacturing processes. By approaching the issue of carbon emissions differently, these designed things have different scripts, or plans-of-action (Latour, 1999; Akrich, 1992). The script of a designed thing determines how the issue is being acted upon.

The GoGreen label, and its related services, represent a different strategy for mitigating the issue of carbon emissions. Rather than translating actors within DPDHL operations, it translates the location of the action to reduce emissions. Rather than requiring that the issue be addressed within DPDHL's core activities, it allows for alternative emission reduction to be conducted. Offsetting enables an organisation to respond to a CR issue through the actions of others. Actions to reduce the issue take place outside the corporation's immediate frame of responsibilities. This distinction suggests that designed things contribute to the mitigation of CR issues directly or indirectly.

Designed things contribute to communicating issues, responsibilities and responses towards issues

Designed things communicate understandings and actions in relation to CR. What is communicated varies. Some designed things communicate identified CR issues and responsibilities. Others report on actions directed towards the CR issues identified. The Materiality Analysis is an example of a designed thing that communicates DPDHL's identified CR issues and responsibilities. The GoGreen label is an example of a designed things that reports on actions towards identified CR issues. The CR report is an example of a designed thing that reports on both of these kinds of information. It reports on identified responsibilities and actions towards addressing them. Many other examples of designed things exist that communicate CR-related information and activities. In fact, all four designed things presented in this chapter can be understood to communicate some kind of CR-related information or activity.

Designed things that are communicating issues, responsibilities, and responses towards issues can be divided into two types. One type are those designed things that can be described as 'closed' communication. These designed things are primarily communicating outwards. The corporation communicates to different stakeholders and interested publics. Examples of this kind of 'closed' communication are DPDHL's CR reports, annual reports, the GoGreen label, and various forms of advertising and branding. The other type are those designed things that can be described as 'open' communication. These designed things are mobilised to enable a dialogue. They facilitate an exchange between DPDHL and different publics. Examples of designed things that could be viewed as 'open' communication are DPDHL's events, blogs, and social media channels.

Designed things play multiple roles

The points raised in this discussion section suggest that designed things play different roles in the space of CR. They also suggest that designed things play multiple roles. This is particularly evident when looking at the more detailed analysis of the four designed things in the previous section. What designed things are doing in the space of CR was explained through more than one role. The electric vehicle, for example, was interpreted as a designed thing that mitigates carbon emissions by offering a sustainable mode of transport. The electric vehicle was also described as a driving billboard that communicates on various levels. The Carbon Dashboard is primarily concerned with analysing carbon emission data. The interface of the Carbon Dashboard, however, is mobilised to communicate the outputs of this analysis. If designed things play multiple roles in the space of CR, which of these roles is foregrounded depends on the context in which the designed thing is acting. The agency of a designed thing is complex and cannot be fully understood by just considering the role that is at the fore. The more backgrounded roles are also important to consider when trying to understand what the designed thing is doing in the space of CR. Importantly, designed things perform in ways that are unintended and unobserved. Even in the intentional landscape of a CR report, the effects generated by the designed thing exceed their assigned roles.

Designed things are mobilised to achieve different ends

Analysing the different roles of designed things in the space of CR points to different ends for why designed things are mobilised. Some of the roles identified relate to CR issues and responses, such as those presented in this section. Other roles seem to serve ends that are not primarily related to the CR issue, which are more concerned with the corporation than with the CR issue. Some of these ends were discussed in Chapter 6, and were also touched upon in other chapters. Recognising the types of actions that designed things perform starts to shed light on some of the ends for why they are mobilised in the space of CR. Cooper (2005) was cited in Chapter 2 for suggesting that the 'dimensions of social responsibility' have to be better understood to see more clearly 'where design can contribute to the overall goal of corporate social responsibility' (p. 17). I raised the point that there might not be one overall goal of CR, but many. Designed things and their actions and effects contribute to these different goals of CR. The understandings emerging from my research suggest that this is the case. An engagement with CR pursues different ends and designed things contribute to achieving them.

8.4 Chapter Summary

This chapter presented understandings emerging from the fourth and final phase of data analysis. These understandings were primarily based on the analysis of four designed things that were selected for closer inspection. The analysis of these four designed things used ANT-informed questions and visual methods to elicit understandings. A general discussion on the roles of designed things in the context of CR followed. I suggested that designed things play different roles, which offer different modes of engagement with CR issues. For example, designed things contribute to a better understanding of CR issues; they are mobilised to evaluate CR issues; and they respond to CR issues. Designed things enable one to act toward an issue. Designed things also perform roles other than addressing the CR issue. They are mobilised to present the corporation in a particular light, such as being responsible or knowledgable. The analysis of designed things in the CR report suggests four main roles that designed things act out in the space of CR: 1) they identify issues, responsibilities and responses, 2) they measure/analyse issues and responses, 3) they mitigate issues, and 4) they communicating issues, responsibilities and responses. I further suggested that designed things play multiple roles and are mobilised to achieve different ends.

9.
Materialising Corporate Responsibility through Design

Chapter 9
Materialising Corporate Responsibility through Design

> "Theory is only translated into practice if it is enacted – in practice" (Law, 2009, p. 151).

The previous four chapters analysed and interpreted designed things in the space of CR. Chapter 6 explored the different corporate ends that drive an engagement with CR. It also explored how designed things were mobilised to achieve these ends. Chapter 7 focused on better understanding how CR reporting acts in this space. Chapter 8 examined examples of designed things that are mobilised in CR. The focus of Chapter 8 was to further unpack what designed things are doing in the space of CR and the different ways in which CR issues were approached through designed things. Each of these chapters offered different understandings of what designed things are doing in the space of CR. In this chapter, understandings that emerged from the four research phases undertaken are further developed by drawing explicitly on concepts from ANT.

9.1 Issues are Made Tangible through Design

The activity of design translates aspects of issues into a tangible form (i.e., material durability; Law, 2009). The capacity of corporations to act responsibly in relation to issues, such as the long term ecological impact of their operations, is in part, dependent on the availability of designed things that can assist in the management or amelioration of the issue. In other words, designed things capable of addressing aspects of complex issues on behalf of a corporation need to be on offer in the marketplace.

Designed things can be understood as acting on behalf of an issue. DiSalvo (2009) argues that design plays an important role in representing issues. Through design, issues are made accessible. The issue can be better communicated and acted upon. By giving an issue a tangible form, designed things translate issues from one world to another (Latour, 1999; Law, 2009; Mol, 2003). A designed thing that measures and visualises an issue, such as emissions, translates the issue into a tangible form that makes evaluation possible. Only then can actions towards this issue be scrutinised for their effectiveness. Translation can be explained as scripts passed on from one actor to another. However, translation also applies to shifting an issue from one context to another (i.e., into a different reality; Law, 2009). Giving an issue a tangible form enables an engagement with the issue in different contexts. Numeric and visual results of emission levels, for example, can be used to inform concerned publics or corporate actors.

Corporations typically exclude unquantifiable and unmanageable effects from their acknowledged areas of responsibility. For a corporation to respond to complex issues of social or ecological responsibility, such as the long term ecological impact of their operations, management of that issue must be articulated into the particular language that is operative in an economy. Designed things that can translate the issue in this way make it possible for the corporation to consider incorporating the issue into their operative order. The availability of these designed things raises public expectations for corporations to take on responsibility for that issue.

Callon (2005) points to the important role that design plays in making issues 'visible and perceptible' (p. 312). Issues that are considered too complex to deal with are easily dismissed as unavoidable externalities. Once design has delivered a means of engaging with the issue, it cannot be so easily dismissed. Design renders complex issues tangible in diverse ways: aspects of issues may be made measurable; or visualisations might articulate what is at stake. People can more effectively voice their concerns, if they can point to designed things in support of their claims. Thus design is an essential partner in action to address an issue. For example, designed things that measure and visualise carbon emissions participate in discussions around this issue, and help to create an expectation that the issue is actionable.

9.2 Design Enables Engagement with Issues

Through the designed thing, certain kinds of action become possible. Designed things shape the way a corporation organises itself in relation to an issue: “Design, as an activity that crosses through the entire organization, becomes central: the firm organizes itself to make the dynamic process of qualification and requalification of products possible and manageable” (Callon et al., 2002, p. 212).

Typically, there will be multiple (sometimes conflicting) materialisations of the issue through different designed things. Often an entire series, or ‘parliament of things’ (Latour, 1991), is deployed in response to complex issues. Different interest groups, that is, different actor-networks, approach the issue differently. By doing so, they generate different responses to the issue (Mol, 2003; Law, 2009). Some aspects of issues and concerns are never engaged with because there is no designed thing that enables engagement (and these areas remain invisible).

By translating an issue into a materialised form, design foregrounds some aspects of an issue and backgrounds others. The designed thing mediates how the issue appears. It predetermines how people are able to engage with the issue, how they are able to approach it (Jelsma, 2003). The design resolution could have been otherwise, enabling the issue to appear differently. Design can be seen as pre-selecting (often without conscious intention on the part of the designer) what is made visible and what is kept invisible, or what is addressed and what is left unaddressed. This is exactly what design is capable of – to shift understandings by making someone see more, or see differently.

9.3 Design Simplifies Issues

Design often strives to provide simple interfaces to complex issues. The reduction of complexity necessarily involves the leaving out, the hiding of alternative readings of the issue. A simplification comprises reduction – something always gets lost when translating an issue into a simplified representation. Through the design response, a judgement is made on what the relevant aspects of the issue are. But design can also mislead.

It can be used to distract attention away from issues. Design's rhetorical power can be used for good or ill.

Mauri and Ciuccarelli (2016) point to the making visible of the invisible through design. However, making something visible is always at the cost of pushing something else to the background. To make a complex issue better or easier to understand, some form of simplification of the issue is necessary. This is a process Latour (1987) refers to as 'black boxing.' The process of simplifying or black boxing requires selection of what is important about an issue, and what seems less important. Less relevant aspects are shifted out of sight to remove complexity.

Law (2009) proposes that black boxing is a necessary part of agency: "An actor is always a network of elements that it does not fully recognize or know: simplification or 'black boxing' is a necessary part of agency" (p. 147). However, it is also a necessary part of designing. DiSalvo's (2009) concept of discovery follows a similar line of argument. DiSalvo describes discovery as "characterized by controlled and directed research, analysis, reflection, and synthesis, that produces a whole that is able to be made apparent and known" (p. 59). He also describes that "discovery occurs through the process of inquiry" (p. 59). DiSalvo points to the notion that the process of discovery also comprises the selection of what is relevant (p. 60). This selection includes revealing some aspects while moving other aspects to the background. Here, the design process pre-selects what is relevant to see and understand about the issue. This selective process is an important one to be aware of when designing.

9.4 An Illustrative Example

Three broad understandings have emerged from my project: issues are made tangible through design, design enables engagement with issues, and design simplifies issues. The following section outlines an example pertaining to the issue of carbon emission that relates to all three of these understandings.

The CR issue of mitigating CO_2 emissions can be found on many CR agendas of various corporations, as it has become a pressing issue globally[1]. Mitigating emissions is part of a larger set of more complex issues that are currently making themselves most present through signs of global warming and climate change, but which are interwoven with uncountable other issues and effects entangled within complex networks. How best to approach this task is a recurring topic of discussion between various interest groups, as opinions on how best to address the problem vary.

In addition to a reluctance to change existing practices, disagreement also occurs because reducing CO_2 emissions is one of those issues where "no one is sure whether they should be addressed politically, economically or techno-scientifically" (Callon, 2009, p. 542). Other reasons might be that CO_2 emissions are, to a certain extent, abstract and invisible. The negative effects of excessive emissions are delayed and displaced. Cause and effect are difficult to align, which makes the clear assignment of responsibilities difficult. Actors from different sides try to reconfigure and pass on responsibilities (Lohmann, 2005). Adding to the complexity of determining who is responsible for carbon emissions are the 'delay of time' between cause and effect (as well as the dispute between causalities of cause and effect), and the 'displacement' between where emissions are released and where negative effects might become visible. Subsequently, liability is difficult to locate. Laws and regulations struggle to offer much help, especially when national boundaries seem to be losing relevance (Beck, 2006a), and when corporations have options to shift corporate activities that generate toxic emissions to countries with fewer and less stringent regulations regarding emission levels.

Venturini (http://climaps.org/foreword) differentiates between three different waves of engagement with climate change. Each wave focuses on a different temporal dimension: a) past actions, how climate change has come into existence, b) present actions to minimise global warming, including mitigation strategies, and c) future oriented actions and strategies, such as strategies on how to adapt to change. Following

1 See for example the United Nations Framework Convention on Climate Change (http://newsroom.unfccc.int/) and the Paris Climate Change Conference in November 2015 (http://unfccc.int/meetings/paris_nov_2015/meeting/8926.php), last viewed 26 January 2018.

Venturini's[2] distinction between different engagements with climate change, efforts to reduce CO_2 emissions can be described as present actions to minimise global warming.

Venturini's distinction is of interest because it offers an explanation for why corporations approach mitigating CO_2 emissions as part of their CR activities. Venturini's discussion of different modes of engagement with climate change reveals dimensions of climate change that seem unmanageable and unpredictable. Engaging with the reduction of carbon emissions, by contrast, provides a tangible project for corporations, one where progress can be captured. The ability to measure progress in relation to an issue makes it a suitable focus to be tackled in corporate responsibility settings.

As mentioned above, CO_2 emissions are, to a certain extent, abstract and invisible. Their negative effects are delayed and displaced. Designed things can be mobilised to make the issue of carbon emissions visible and tangible. Take DPDHL's Carbon Dashboard, for example. It measures and analyses carbon emissions, with the results presented in visual and textual forms. These representations make carbon emissions tangible and somewhat concrete. Once the amounts of carbon emitted through various business operations are better understood, options can be pursued to reduce them. While one option is to avoid carbon emissions altogether, a more feasible option might be to find alternative products and services that generate fewer carbon emissions or mitigate emissions in other ways. Examples of such designed things are the electric vehicle and the GoGreen service to offset emissions. These two designed things offer ways to address the issue of carbon emissions. By doing so, they simplify the issue in a way that makes an engagement with it easy and unproblematic; at least in theory.

Taken together, designed things play a key role in enabling engagement with the issue of carbon emissions. Strategies to capture and evaluate the issue are offered through designed things. Other designed things offer strategies to mitigate or avoid generating carbon emissions. Design can

2 http://climaps.org, last viewed 26 January 2018.

also be mobilised in visual communications of the metrics by which progress is to be measured. Despite the importance of this CR issue, the mitigation of carbon emissions may not have featured in CR portfolios as much, if it had not lent itself so well to metrics, representations, and other translations by design.

9.5 Different Kinds of Responses towards a CR Issue

The examples of designed things provided above illustrate that many different kinds of designed things participate in CR activities. One might make a distinction between designed things that are predominantly mobilised within internal business operations versus designed things that are offered as products and services. Designed things mobilised within internal business operations are used, for example, to facilitate management processes, such as measurement and evaluation. These kinds of designed things can be distinguished from designed things that are translated into product and service offerings for customers who are seeking more sustainable solutions.

Designed things can also be divided into those that act predominantly within CR reporting, and those that act predominantly outside of the CR reports. Designed things that primarily exist outside of CR reporting, but which are reported upon in the CR reports, act both in the CR report and beyond. Designed things that act primarily through the CR report are, for example, texts, images, graphs, tables and icons especially generated for the corporation's CR reporting.

A designed response to an issue can be disruptive to existing actor-networks or discrete, allowing the performance of the actor network to continue smoothly. Often a design intervention will be discrete in its effect on some networks, allowing for a smooth transition from the previous way of doing things, while it is disruptive of other networks, triggering major change. One might view the transition from a fossil fuel vehicle to an electric vehicle as smooth from the point of view of the driver, as the performance of the electric vehicle does not differ greatly from that of an internal combustion engine (ICE) vehicle. However the substitution of electric vehicles for ICE vehicles causes massive disruption to the fossil fuel supply chain network, as electricity (perhaps generated by renewable energy technologies) steps into the role previously played by petroleum (Latour, 1997, 1999). As the example of the electric vehicle shows, whether a designed thing is perceived to offer a smooth transition or a disruption depends on the actor-network in question.

9.6 Design Offers Modes to Engage with the Future

The understandings that emerged from this research suggest that designed things in the context of CR enable a corporation to engage with the future. The corporation does this in many different ways. It does this, for example, by identifying future risks and opportunities, and by articulating steps to address them. The understandings that emerged from this research project suggest that an engagement with the future, its potential risks, challenges, and opportunities, is an essential part of a corporation's engagement with CR. Design plays an important role here to anticipate the future. As Julier (2017) suggests: "Design shapes products, environments or image. It also makes 'economic imaginaries' " (p. 175).

Julier (2017) describes that design has two main roles in the economic landscape. Design generates 'stuff,' that is, products, services and systems. Equally important, design in the corporate world is understood to drive innovation and to show what is possible. But design is not only helpful to generate innovative design interventions. Design is also capable of anticipating risks, challenges, and opportunities for corporations. For Julier, design "materialises the probable. Design plays a semiotic role in making change appear reasonable" (Julier, 2017, p. 3). Design can also show the improbable, the far-fetched, the unlikely. By doing so, design can anticipate future change. Design as a discipline is well equipped to generate visions of the future. It can project itself into different moments in time, the near future or the far-fetched future. Design is able to project itself into a specific future situation and generate material responses to envisaged future circumstances (Tonkinwise, 2015; Yelavich & Adams, 2014).

In the CR report 2012, the futures study called *Delivering Tomorrow: Logistics 2050* (2012) is featured. This study presents and discusses five future scenarios of the world in 2050. The scenarios themselves are not presented in the CR reports. They are only mentioned in the text, but a link is provided to the web content. "We want to shape our own future" was one of the reasons provided for why DPDHL conducted this kind of future study (CR report 2012, p. 18). This is an example of where design was mobilised to generate scenarios of what the future could look like, how the world could change, ranging from extreme cases of scientific and technological progress, to alternative modes of everyday life. While the speculative engagement with the future is only briefly reported in the CR reports, its mentioning seems to suggest that it shapes how CR is approached.

This engagement with the future, through design, shapes how the future is understood, and how risks and challenges are anticipated. Beck (2006b) makes a similar point. For him, risks can be better anticipated through visualisations: "Risks are always events that are threatening. Without techniques of visualization, without symbolic forms, without mass media, etc., risks are nothing at all" (Beck, 2006b, p. 332). Another interesting point made by Beck (2006b) relating to design and its engagement with the future is that discussion and debate do not evolve from the risk itself, but from responses related to the risk and their consequences. For Beck, this is what brings different publics together: "A global public discourse does *not* grow out of a consensus on decisions, but out of *dissent* over the *consequences* of decisions" (p. 339, italic in original). Beck implicitly points to how responses and their consequences enable an engagement with risk. Responses are often in the form of designed things, of tangible solutions aiming to address the issue. Beck's point suggests that designed things enable an engagement with potential risk. Identifying potential risks might enable one to discuss and possibly respond towards it.

Design enables engagement with the future. It shapes the future (Julier, 2017; Yelavich & Adams, 2014; McDonnell, 2015). At the same time, representations of the future shape actions in the present. Michael (2000b) suggests that representations of the future are performative insofar as they influence the present and its understandings of the future. Representations of the future are not 'a-material.' They are materialised visions, articulated by, for example, objects, words, pictograms, or digital interfaces. Michael explains that "the medium through which they [the representations] are communicated and the material routes they follow, affect the sort of future that is portrayed, and the sort of performance that is possible by a particular represented future" (p. 23). He summarises that "the representation of the future, conceptualised as a performative materialised artefact, shapes the 'present' in which it performs" (pp. 33-34). Michael (2000b) points to the importance of representations of the future. Representations of the future are visions brought to life through visualisations and prototyping of future scenarios, by imagining prospective products, services, practices, and experiences within these possible worlds. Beckert (2013) suggests that fictional expectations of the future are performative because they may "influence the events they predict" (p. 229). They not only shape expectations about the future, but more important, have an impact on future-oriented actions in the present: "Actions are based on committing to a belief in the materialization of a certain future, and the pretention that the fictional depictions were indeed true representations of the future" (p. 226). Representations of the future play an important role when engaging with risk. They influence understandings of where threats and opportunities for the future lie, and how the future is approached in the present. Representations of the future shape corporate actions to become future-ready.

9.7 Design Shapes how Issues are Understood

Designed things make issues tangible by translating these issues in particular ways. By doing so, they shape how the issue is understood and engaged with. Designed things enable an engagement with issues, for example, by materialising risks, challenges and opportunities in relation to issues. Designed things make issues visible (e.g., through visualisation and communication of the problem and its consequences). Making issues visible plays an influential role in discussions on the location of responsibility (e.g., through measuring effects), and the potential to manage that responsibility (e.g., through employing designed things to mitigate effects or to eliminate/create alternatives to problematic practices).

In the space of CR, corporations generate responses towards issues. These responses can be evaluated and discussed. Corporate and public engagement with issues is shaped by the availability of responses that translate issues into a form that enables engagement, such as evaluation and mitigation of an issue. Designed things enable different kinds of engagement. By doing so, they become political actors that shape how the issue is understood and approached.

Many scholars understand designed things as political actors (see, for example, Bennett, 2010; Dominguez Rubio & Fogué, 2015; Sims, 2017; Winner, 1980; Fry, 2011; Boehnert, 2016; Yaneva & Zaera-Polo, 2015; Bonsiepe 2006, Verbeek, 2011). Designed things are framed to have a political position, often implicitly, that shapes how issues are understood. Dominguez Rubio and Fogué (2015) describe design as "doing politics through things" (p. 144). Sims (2017) frames design as a mode "of doing material politics" (p. 439). Dominguez Rubio and Fogué (2015) distinguish between the enfolding and unfolding political capacities of design. For Dominguez Rubio and Fogué, enfolding capacities of design provide answers to political problems, while unfolding capacities generate questions and problems. In other words, designed things with enfolding capacities present themselves as solutions. They hold an understanding of what the issue is and how to respond to it. Designed things with unfolding capacities present themselves as ambassadors. Their main aim is to encourage critical engagement with the issue by proposing questions. Sims (2017) describes the political capacities of design as prescribing, publicising, and proposing. Prescribing refers to the script of a designed thing and how it leans towards a certain political position by suggesting certain actions. Publicising points to design's ability to make things public, to drag things out into the open for publics to engage with. Proposing refers to design's capacity to show how things could be different, both good and bad.

All these political dimensions of design attempt to capture how designed things act politically. However, how these different political dimensions of a designed thing appear depends on the particular context in which the designed thing acts together with other actors. Depending on the political, social, cultural context, and the point in time, different political dimensions might appear more dominant while others might be pushed to the background. Designed things always hold a spectrum of capacities to act political. What is perceived as enfolding for one, can be understood as unfolding for someone else. As DiSalvo (2009) explains: "The diverse readings of the same artifact reveal differences in cultural assumptions of knowledge and truth" (p. 50). What can be seen as enfolding today, can appear as unfolding tomorrow. Time, place, and situation can shift how the political dimension of a designed thing is understood. The complexity of the political dimensions of designed things is well described in Latour's concepts of mediator and intermediary (1997, 1999). For Latour, the political capacities of a designed thing are not limited to any two or three categories. Rather, he points to a spectrum of political capacities a designed thing might hold.

Designed things in the context of CR are rhetorical actors. They hold the capacities to persuade, manipulate or camouflage (Bonsiepe, 1996, 2006; Joost & Scheuermann, 2008; Tonkinwise, 2011). Designed things create atmospheres that influence other actors. This makes design a controversial actor that can hide or mislead (Boehmer, 2016). This suggests a need to critically engage with how and why designed thing act, and the effects they generate. Agency and effects of designed things should not be simplified. They should not be understood as straightforward, but rather as in flux and ever evolving. Designed things contribute to how issues are understood and approached. They also shape how corporate actors and their responses to issues are understood. Yaneva (2015) suggests "to engage in cosmopolitics means to redesign simultaneously the cosmos and the political assemblies" (p. 4). The roles of designed things in the space of CR should not be reduced to their primary functions. For example, a CR report is not just communication that provides information. It is more. It is an actor that shapes how issues are understood. At the same time, it contributes to the corporate narrative. It shapes the corporate image. The claims and narratives that carry the designed thing into the public should also be considered when aiming to better understand how the designed thing is acting at the boundary between corporate actions and public exposure.

9.8 Chapter Summary

In this chapter, I presented a broader set of understandings related to designed things in the CR space. These understandings have emerged from both the four research phases undertaken, as well as engaging with the literature associated with this project; particularly my engagement with ANT. In this chapter, I stepped back from the detailed analysis of the data. I looked from a distance at the examples analysed and discussed in the previous chapters. This enabled me to discuss them from a macro perspective. To end this chapter, I would like to use the words of Callon:

> "The symmetry between selfish and altruistic agencements has shown; both involve material, textual, procedural, and other investments. When homo economicus becomes altruistic 'again,' he does not rediscover his true nature; he changes his equipment" (Callon, 2007, p. 347).

This quote by Callon sums up how I view the role of designed things in the space of CR. It points to the variety of designed things that are mobilised in this space. Most important, it suggests that doing good does not require the corporation to change its character (it might, but it is not a necessity). It requires the corporation to change its 'equipment.' Designed things are part of this equipment, along with how they are mobilised and communicated. However, their agency is complex and often exceeds their roles as equipment. They are actors participating in performative associations that generate effects. These effects not only shape issues, they also shape how other actors, such as corporations, understand themselves in relation to issues.

10.
Assembling Points and Lines

Chapter 10
Assembling Points and Lines

> "If we wish to construct a graphical representation of a network by using sequences of points and lines, we must view each point as a network which in turn is a series of points held in place by their own relationships" (Callon, 1986, p. 31).

This is the tenth and final chapter. Drawing on Callon's quote above, this chapter connects some of the points I have made in this thesis, and how they relate to each other. Each point can be better understood by its position to the other points made throughout this thesis. This chapter provides answers to the research questions associated with my project. It comments on the data sources and approaches used throughout the project. It discusses the strengths and limitations of the research conducted and potential future research directions. The contribution to knowledge this project makes is then given, followed by a concluding comment.

10.1 Summary of the Project

This thesis was interested in design and corporate responsibility (CR). Its purpose was to better understand the roles played by designed things in the space of CR. This area of inquiry was explored in an interdisciplinary research project that brought together design, business and the social sciences. The theoretical lens used for this project was Actor-Network Theory (ANT). The access point chosen to understand how design is acting in the space of CR were CR reports from one case study corporation, Deutsche Post DHL (DPDHL). The qualitative analysis of the data material was informed by discourse analysis. Visual methods were also used to analyse and interpret the representations and information contained within the CR reports.

The analysis of this research project was conducted over four phases. The first phase reported on my first engagement with the CR reports. It revealed that many different levels of 'information' are provided in the CR reports. It also revealed that the mitigation of carbon emissions is one of DPDHL's central CR issues. The second phase generated insights into the question: What are the corporate ends that drive CR? An answer to this question was provided. The third phase focused on CR reports and how they act in the space of CR. It revealed six roles of CR reporting. The fourth and final phase presented understandings based on the analysis of four designed things that are operating in the space of CR. ANT-informed questions and visual methods were used in this fourth phase. This phase revealed that different modes of engagement with CR issues were facilitated by different designed things.

Each phase was presented in a separate chapter, with a discussion provided in each. A broader discussion was then provided. Based on the different analyses conducted in the four phases, I looked at designed things in the context of CR on a broader level. I suggested that CR issues are made tangible through design, that design enables engagement with issues, and that it simplifies issues. I further suggested that design offers modes to engage with the future, and that design shapes how issues are understood.

10.2 Answering the Research Questions

The aim of the research project was to contribute to a better understanding of how designed things act in the space of corporate responsibility (CR). The research had three research questions, each of which is answered below.

Q1. What are designed things doing in the space of CR?

Designed things make CR tangible. CR is performed through the mobilisation of designed things within actor-networks that effect change in the name of CR. Designed things facilitate an engagement with CR issues. In the corporate setting, designed things are understood as tools, as means to an end. Designed things translate an issue into a form that enables engagement, either by the corporation or other issue stakeholders. How do designed things do these actions? They do them in different ways, such as by visualising issues in ways that enable them to be prioritised, and by measuring progress, responsibilities and responses towards CR issues. Designed things measure and analyse CR issues and responses towards them. They mitigate CR issues, directly or indirectly. CR issues, responsibilities and responses are communicated through designed things. These are the main roles identified in relation to what designed things are doing when addressing CR issues.

Some designed things may act as a signifier for a CR issue, raising awareness for it. Other designed things might offer plans of actions to other actors. These plans of actions offer modes to engage with the issue. At the same time, designed things are mobilised for corporate ends. They act in service of corporate interests. Designed things that are initiated by a corporation in service of a CR issue position the corporation in a certain light. They suggest to the public what is valued by the corporation. They contribute to a corporate narrative about ethical actions and responsibility. Designed things may act as delegates of the corporation. They might promote the brand as responsible. They might create pathways for resolving or defusing issues on behalf of the corporation. Designed things generated within or for practices external to the corporate order, may be adopted and put to work on behalf of the corporation. There is a diverse traffic of designed things across the boundary of corporate responsibility, as they are adopted into, and projected out of, corporate practices through CR strategies.

Designed things mobilised in the space of CR act on behalf of CR issues, and on behalf of the corporation. CR issues develop out of the intersection between corporate externalities and public concerns. Responding to a CR issue is directed towards eliminating or reducing the risk posed to the corporation by public concerns. Corporate ends are shaped by private interests, such as profits and growth. Designed things are entangled in what the corporation is willing to accept, and what various stakeholders expect in relation to an issue. A designed thing that is mobilised in the space of CR might therefore be understood as a compromise between these two positions and their interests. A designed thing that is mobilised to act on behalf of both public and private interests might have several scripts in operation. The different scripts in operation might create tensions; particularly if they pursue ends that are conflicting.

Designed things do not act in isolation. They are part of actor-networks or performative associations. A designed thing that is mobilised in the space of CR acts in concert with other actors to produce multiple effects, some of which have motivated the design of the designed thing. The designed thing unfolds its agency through its participation in these performative associations. This suggests that a designed thing is better understood when considered in relation to other actors. For example, the agency and effects of an electric vehicle are better understood when paying attention to the actors that gather around it and the effects they generate. The notion of co-agency is central to understanding what a designed thing is doing in the space of CR.

Insofar as networks of humans and nonhumans are considered performative, each actor within the network plays a role in the network's production of effects. In the case of CR reports, each image, title or text plays a role in the production of effects that reassure the reader that the corporation is addressing issues of concern. Additionally, the image of a designed thing, such as an electric vehicle, can reference the participation of that thing in different networks. The electric vehicle may perform a role: as part of a corporate fleet; as a mobile billboard forming a part of a brand presence; or in a CR report as evidence of corporate responsibility with regard to emissions. These roles are entangled and co-present in the designed thing, but each role is relevant to a different network and participates in the production of effects particular to that network. In this project I identified roles played by designed things (or representations of designed things), in the networks assembled within CR reports. These roles can be viewed as descriptors aiming to capture what a designed thing is doing in the space of CR. Analysing designed things through these descriptors enables one to better understand what designed things are doing in the space of CR.

Q2. As a designer, what can I reveal about what design is doing in the space of CR?

This research project was conducted by a designer. What has been revealed about designed things in the space of CR has been influenced by this. Designers have particular ways of working (Box, 2007; Sadokierski, 2010; Dorst, 2006, 2015, 2017). They work in iterative cycles. Designers engage in different phases of researching and designing. Designing comprises phases of thinking through making. Designing is not design research. However, I suggest that certain ways of working as a designer carry over into how a designer does research. It might affect how the research is approached and how modes of thinking through making are incorporated into the project. Further, designers are trained towards undertaking explorative approaches. They are used to working on design projects that identify a 'design problem' without an appropriate 'design solution' to begin with. Part of the designer's role is to identify potential solutions to the design problem. They do that by exploring different options regarding how the problem can be addressed. This is very similar to a research project – especially one that is exploratory. A project might start with an inquiry, but the tools and approaches used to address this inquiry, and how they would unfold in the particular project, need to be explored and evaluated by doing. That means the research project takes shape over time. This is very similar to a design process, where the design response reveals itself through the design process.

Conducting this research project as a designer shaped this project in a number of ways. First, I was attentive to the appearance of designed things. I paid attention to their materiality and their visual language. Second, I approached the research project in an exploratory way. The exploratory nature of this project is evident in the four phases of data analysis conducted. These four phases unfolded throughout the research process, each taking direction from understandings generated in the previous phases. Third, I engaged in designerly processes of making to generate understandings. Through the making of visual representations, I was able to make visible patterns of references within the reports. Effects generated by the reports can be better understood in the light of these patterns.

Design research is divided into three broad categories: 1) research about design, 2) research for design, and 3) research through design (Grand & Jonas, 2012). Following Grand and Jonas's distinctions, my research included both research about design and research through design. Design in a particular context was the topic of my research. This can be described as research about design. Design was also used as part of my method. This can be described as research through design. By doing so, I engaged with designed things through designed things. I analysed nonhuman actors by generating nonhuman actors. I analysed the data by developing themes out of the material, and by visualising ideas and understandings that emerged during the analysis. This process was performed in iterative cycles throughout the data analysis.

Designers make things. They create actors that enter into performative associations. By designing or re-designing, designers through their 'creation' contribute to the shape of actor-networks that produce performative effects in the world. This applies to the visualisations that were generated in this thesis. They acted to produce. However, they also hold the potential to re-shape the actor-network they are concerned with – namely CR reports. These visualisations are understood as new actors in this space, produced by a designer, who engages with the research topic in a particular way. That is, by generating new actors, new designed things enter into this space. These new actors contribute to how designed things in the context of CR are understood. They contribute to telling the story of what design is doing in the context of CR. As Law (2009) suggests: "But since our own stories weave further webs, it is never the case that they simply describe. They too enact realities and versions of the better and the worse, the right and the wrong, the appealing and the unappealing. There is no innocence" (p. 154).

Q3. How are visual methods useful to address Q1?

One of the strengths of this project has been to use visual methods as part of the analysis. Visual methods are widely used to interrogate CR and CR communication. A quick search of social media tools that collect visual material, such as Pinterest, produces multiple examples of visualisations that interrogate CR. See, for example, https://www.pinterest.com.au/

explore/corporate-social-responsibility/, or search on pinterest.com.au with search terms such as: corporate social responsibility, csr report, sustainability report, report design, annual report design, infographics, info graphics, infographic, data visualisation. Different search terms generate different sets of examples. Some search terms generate examples of visualisations that can be found within CR reports. Other visualisations are concerned with visualising CR activities. The use of visual methods within the context of a research project on design and CR is less common. This observation invites reflection on how useful it was to mobilise visual methods to answer my main research question: What are designed things doing in the space of CR?

The visuals generated in this project were used as 'thinking aids' (Goldschmidt, 2014, p. 434). Developing these visualisations was a form of sense-making. They prompted me to ask new questions in relation to what the designed thing was doing in the space of CR. For Goldschmidt (2003), generating a sketch and engaging with it, looking at it, amending it, are different modes of thinking. Goldschmidt's argument explicitly relates to sketching during early stages of the design process. However, her notion of 'thinking aids' fits well when describing the role that the visual methods had in my research project. Similar to visual representations and sketches during a design process, the visualisations were a form of thinking through making in my research project. Goldschmidt (2017) suggests that self-generated visual representations enhance the thinking process, as they are generated in the context of the project at hand. Engaging with them holds the potential to elicit ideas and understandings. The visuals generated in this research project were considered in a similar way – as eliciting ideas and understandings.

The visual methods used in this research project offered a way of working with the data other than looking at it, reading it and writing about it. They were an integral part of my analysis. When discussing visual methods in research, Lorber Kasunic and Sweetapple (2015) distinguish between visualisations that are part of the analysis and those that document the research process and present findings (p. 4). The visuals presented in this thesis are both; that is, they were part of my analysis, and they were also used to report on the understandings that emerged as a result of making them and engaging with them.

DiSalvo's (2009) distinction between 'tracing' and 'projection' offers a language for describing different kinds of visualisations and how they capture issues. DiSalvo explains that 'tracing' maps an issue from the past to its current state and how it has changed over time. 'Projection' places an issue in the future, showing how things could change. DiSalvo (2009) suggests that 'tracing' and 'projection' generate representations of issues. Once a representation of an issue has been generated, one can then engage with the issue. The visualisations generated in my project can be described as 'tracing.' They enabled me to look at how designed things have been mobilised and how they are acting. Both tactics of 'tracing' and 'projection' engage with different dimensions of 'temporality' and 'discovery' (DiSalvo, 2009). Through the Agency Mapping exercise, for example, the 'temporality' of CR initiatives was explored by studying the designed things over time.

The visual methods used in this project brought to the surface the shifting presence and alignment of designed things within the agency of the CR reports and the actions they reported on. These insights went beyond the presentations in the CR reports. The CR reports were telling a particular story about the corporation's CR activities and the designed things that are mobilised in this space. This story was a positive one, a strategic one. Not all the information in the CR reports was equally prominent. There were more stories to be told with the information provided. My visualisations allowed some of these other stories to appear.

Through my visualisations, previously invisible aspects of CR mobilising designed things were made visible, and so shifted the way in which the designed thing was grasped. For DiSalvo (2009), design offers different modes of seeing and understanding an issue. This is exactly what the visual methods in my project did – they shifted my understandings, they made me see more, they made me see differently.

10.3 The Agency of Theory

The theoretical lens used for this project was Actor-Network Theory (ANT). It provided a suitable interpretative lens for understanding the roles of designed things in the space of CR. ANT offered concepts that were helpful in unpacking the complexities around what designed things are doing in the CR space and the effects of their actions. This theory was crucial to the understandings that emerged from this research project.

The ANT concepts used in this thesis helped me to gain insight into what designed things are doing in the space of CR. Some concepts, such as script and translation, were developed in early writings on ANT (Akrich, 1992; Latour, 1992, 1999). In this period, ANT was primarily concerned with the ethnographic study of human and nonhuman actors in science and technology settings. The concepts generated in this period are primarily concerned with actions and effects. Other concepts are drawn from more recent ANT texts. These more recent concepts include performativity and performative association (MacKenzie et al. 2007; Callon, 2007; Law, 2009). These concepts are more concerned with understanding actors in relation to other actors and through co-actions with these other actors. Engagement with these concepts helped me to see designed things through their actions and how their actions shape the actions of other actors. These ANT concepts also drew my attention to the relationships designed things have with other actors, and how together, these networks or assemblages of actors generate performative effects. Designed things were understood as actors and actor-networks that enter into performative associations. Engaging with these different ANT concepts not only enabled attention to the particular actor-networks that were at play in CR. It also focused attention on the issues around which these actor-networks were assembled. These strengths of ANT made it a particularly useful lens for my project. It enabled me to explore designed things as actor-networks and as participating in actor-networks that respond to issues.

The way in which I approached my data material was informed by my reading of ANT. A notable example is the development and use of my Actor Atlas, which assembled ANT-informed questions as a way of engaging with the designed things. These questions paid attention to the actions designed things performed, and the effects these actions generated. They also paid attention to how designed things interacted with other actors in order to address issues.

10.4 Data Sources and Approaches Used

The access point chosen to understand how design was acting in the space of CR were CR reports. They provided documented evidence of how corporations approach CR and the designed things mobilised in this space. The CR reports selected for this study were from one case study corporation, Deutsche Post DHL (DPDHL). The decision to focus on a set of examples from one corporation was informed by Flyvbjerg (2001, 2006). He refers to "the power of the good example" when discussing the strengths of in-depth case study research (2001, p. 77). For Flyvbjerg, this kind of research generates "concrete, practical, and context-dependent knowledge" (2001, p. 70). Having said that, the focus of this research was not the CR program of one corporation or how one corporation approaches CR. The focus was on a number of examples of designed things and how they operate in the context of CR.

The research methods used to analyse DPDHL's CR reports were informed by the qualitative research method discourse analysis. Using discourse analysis enabled me to explore different ways of interrogating the data material. This engagement with the data, and the four phases conducted to analyse it, revealed that the CR reports were a rich data set, providing different levels of information. This iterative process generated different sets of understandings. Discourse analysis provided a structure for how to approach the data and to develop themes out of it (Rose, 2012; Potter & Wetherell, 1987). By using discourse analysis, the data material was framed as a form of discourse that provided different levels of information and insight (Nimmo, 2010, 2011), without predetermining how this discourse had to be interpreted. This enabled me to incorporate understandings informed by ANT into the analysis. As a theoretical framework, ANT provided a certain position on how I approached the data. While the texts and visuals were understood to provide information, they were also seen to be active and performative actors. As such, I also examined text and visuals in the CR reports by paying attention to their "work of inscription, translation and mediation" (Nimmo, 2011, p. 114).

10.5 Revisiting Corporate Responsibility

The context in which this study took place was CR. In Chapter 2, literature on corporate responsibility was critically examined and discussed to better understand the concept of CR. The findings introduced in Chapter 6 enabled a further critical examination of how CR can be understood. Here, an alternative definition of CR was proposed. Further, the tensions between public and private interests in the space of CR were discussed. This was followed by a proposition that CR might hold the potential to be dedicated to the difficult work of constructing a world within which the interests served by a corporation and the interests of broader publics can be negotiated.

For Porter and Kramer (2002, 2006, 2011) aligning corporate interests with public interests is a strategic way to incorporate CR into a corporation's business practices, rather than claiming purely altruistic reasons for CR activity. The emphasis on the strategic dimension of CR discussed by these authors resonates with the observations made in this research. CR activities initiated by the case study corporation seemed to be strongly driven by strategic decisions that are concerned with corporate interests, rather than by altruistic reasons. Furthermore, these CR activities attempt to combine public and corporate interests. For example, investing in technologies that use renewable energy was framed by the corporation as an issue of public interest. At the same time, however, it was also framed as holding the potential to reduce costs and fossil fuel dependencies for the corporation.

Also in Chapter 2, it was noted that some scholars view CR as greenwashing, rather than an honest attempt to reduce negative corporate externalities (Banerjee, 2008; Dobers & Springett, 2010; Hennig, 2015; Crocker, 2015). The understandings on CR that emerged out of my project suggest that a clear black and white distinction is difficult to make. The analysis revealed that CR is mobilised to present the corporation in the best possible light by both foregrounding responsible corporate actions, and by placing more problematic corporate actions in the background. Regarding environmental responsibility, this means that the corporation presents itself by emphasising their green actions through their corporate communication channel. Having said that, the detailed study of a corporation's CR activities suggests that, irrespective of the corporate motivations behind CR, engaging with issues of public concerns holds the potential to reframe corporate positions toward these issues.

Fifka and Reiser (2015) outlined that CR is a fairly recent topic in Germany, with a strong emphasis on employees. While a strong emphasis on employees was found in the CR activities of the case study corporation studied, other topic areas were also found to be very present (e.g., environment and society). Indeed, the weighting of the three main topic areas in each CR report relative to each other was 21% environment, 20% employees, and 13% society. This observation suggests that areas other than employees are relevant to the CR agenda of corporations in Germany.

Further, although CR reporting is not a legislated requirement, Fifka and Reiser report a growing trend of German corporations reporting on their CR activities, citing various benefits of doing so. An important benefit cited was the evidence CR reporting provides of the corporation's response to customer expectations of more sustainable or social business solutions. This trend resonates with observations arising from this project. The case study corporation seemed to be more articulate and more confident in the way its CR activities were communicated and presented in their CR reports over time.

In Chapter 2, a distinction was made between proactive and reactive CR approaches (Callon, 2005; Fifka & Reiser, 2015). In relation to this distinction, the CR approach of the case study corporation can be described as proactive. This proactive approach is framed by the corporation as a response to stakeholder expectations. This explanation of why the corporation engages with CR aligns with notions of acting towards issues of public concerns (Callon, 2005). It also aligns with managing visibility (Castells, 2008; Thompson, 2005) as was discussed in Chapter 2.

This section has revisited the findings of other CR scholars, identified through the literature review in Chapter 2, in the light of the findings of my research. As discussed above, the findings of my research align with those of other researchers in this area. The approach taken by this project, of a detailed case study focused on the CR reports of a single corporation, provides a richer view of the role of designed things in producing these effects. This approach, informed by ANT, enables a far richer insight into CR as a performative activity. Although limited by its restriction to a single case study, this research both confirms and extends existing findings within the field.

10.6 Strengths, Limitations and Future Research Directions

> "You can define a net in one of two ways, depending on your point of view. Normally, you would say that it is a meshed instrument designed to catch fish. But you could, with no great injury in logic, reverse the image and define a net as a jocular lexicographer [Julian Barnes] once did: he called it a collection of holes tied together with a string" (Czarniawska, 2013, p. 12-13).

The data sources and approaches gathered for this project were chosen to weave a net of equipment that would enable me to catch what seemed relevant for my research project. However, the quote by Czarniawska above points to the limitations and gaps that nets might have. In light of this quote, I understand some of the strengths of this project, also as its limitations.

Engaging with one kind of data material, CR reports, is both a strength and a limitation of this research. The decision to limit the data material in this way enabled me to engage with the data in great detail. The result of this deep engagement is evident in the different phases of analysis. Each of these phases generated a different kind of insight in relation to what designed things are doing in the space of CR. Combining qualitative research methods with visual methods is another strength of my research. Mobilising design in combination with qualitative research was a unique way to bring together design and CR. However, other material exists that engages with the designed things studied, such as media and press coverage from sources external to the corporation, and other forms of third party evaluations. Had this material been incorporated into the data material analysed, different insights would have been generated. Had other corporations been included, the findings would have been able to claim greater generalisability. While limiting the data was a conscious decision, as outlined above, it also raises the question as to what extent the findings of my research apply to other corporate settings. Both limitations should be addressed in future research. First, studying external accounts of designed things and comparing them to corporations' accounts should be undertaken. Second, seeing to what extent my results can be found in other corporate settings should also be conducted.

Visual and textual analytical tools were developed and applied in this project. Having used them, I can see how they could be further developed and tested in other research projects. The Agency Mapping exercise, the Issue Response Mapping exercise, and the Actor Atlas might be approaches useful beyond this project. They might be useful in design education. They might also be useful for corporations and issue stakeholders to better understand what designed things are doing in a particular context. They might also be useful for issue stakeholders and issue experts to negotiate CR issues and corporate responses. Being aware of how designed things act might enable one to re-script, or to reframe, certain actions and their effects.

Latour (2008) invites designers to contribute with their knowledge and skills to explore matters of concern by asking: "So here is the question I wish to raise to designers: Where are the visualization tools that allow the contradictory and controversial nature of matters of concern to be represented?" (Latour, 2008, p. 13). Controversy Mapping is one possible response to Latour's call. Other forms of analytical design tools might also be of interest when studying controversies and the roles of actors and actor-networks within them. The visual methods generated within this project explored a different kind of visualisation strategy. They focused on actors and how they were represented and mobilised in a particular context in order to pursue various ends. These approaches might be of interest in other research contexts.

10.7 Contribution to Knowledge

Over the last few years, a growing number of research projects in design have engaged with Actor-Network Theory. Different ways of interpreting the object by thinkers working in this tradition and different ways of applying these understandings within different design research projects, have been explored. Some mobilise ANT to critique and interpret designed things existing in the world (Shiga, 2007; Yaneva, 2009, 2012). Some draw upon it to critique and interpret their own design practice (DiSalvo et al., 2011; Kraal, 2007; Ward & Wilkie, 2008). Some of this work is textual (Stewart, 2015). Other work draws on visual methods, such as Controversy Mapping (Johnson, 2016; Ricci, 2010). Different approaches and attempts can be found on how these theoretical concepts are mobilised in a design research context. My work contributes to this body of design research engaging with ANT. It does this by using ANT concepts to analyse and interpret how designed things act in a particular corporate context, that of corporate responsibility. It explores how designed things are mobilised to achieve corporate ends. By doing so, the research contributes to an existing body of research that explores how ANT can be used to enhance design research; particularly research that is concerned with the agency and co-agency of designed things.

My work also contributes to developing understandings of designed things as actor-networks and as participants in actor-networks that generate performative effects. Understanding designed things in this way is important for designers to consider. It raises awareness of how designed things act in larger social contexts, and of the effects they generate. It also raises awareness of how issues are approached through designed things. This thesis makes a contribution to the developing understandings in this area of design. The understandings that emerged in this project contribute to how designed things can be understood through their actions, their relationships with other actors, and how together they generate performative effects. This research provides a number of characterisations of how designed things act in the space of CR. Developing understandings on how design is active in this space is seen as enabling designers to better understand design and designed things as participants in networks. The redesign of particular actors, or the introduction of new designed things, can be seen to reconfigure the networks that these things participate in. The analysis of the CR reports over time reveals these processes of recongfiguration, and their import for both the corporation and the issues addressed by CR.

The third contribution this project makes is in the area of design and CR. An important contribution made by this research is in the re-characterisation of the role of designed things within CR initiatives. I have suggested that designed things provide actionable (though selective) translations of complex issues that would otherwise remain as unaddressed externalities to corporate responsibilities. The electric vehicle is a good example of a designed thing that is an actionable translation of a complex issue. Research and development of e-mobility provides a good platform for a corporation to engage with the complex issue of reducing carbon emissions. Using an electric vehicle as an alternative to a fuel vehicle in a corporate fleet enables the company to mitigate the CO_2 emissions generated through their business activities, especially when they are using renewable energy. Another example of a designed thing that provides an actionable translation of a complex issue is the GoGreen label and its related offsetting services. Here, CO_2 generated by corporate activities can be mitigated through other actions that aim to reduce CO_2 emissions. Both designed things enable the company to engage with the issue of carbon emissions. Without these kinds of actionable translations mitigating CO_2 emissions in a corporate context would be more difficult to address and it could be easier dismissed as a corporate externality.

10.8 Concluding Comment

More than ten years ago, I sat in a lecture given by a design academic. On one lecture slide, a cartoon was shown that had the subline "design is an agent for change." I asked myself: "How does design trigger change?" When conducting this project, I often thought about this moment in the lecture and the question I posed to myself. Conducting this research project enabled me to start answering this question. By understanding designed things through their actions and effects, through their participation in performative associations that shape behaviours, perceptions and practices, I can see how change can be initiated through design, intentionally or unintentionally.

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