Organizational Approaches to Greening

Technocentrism and Beyond

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Abstract

How and why do organizations approach greening? How can we conceptualize approaches and how can we encourage reflexive dialogues on them? These are the main questions addressed in this qualitative study on organizational greening. The study sets off by discussing matters of research philosophy, arguing that our trust in science ought to be revised and that a more postmodern and constructionist philosophy might be a way to go. This is then followed by a theoretical review, showing that organizational studies have a history in environmental issues, but that it is basically technocentric in orientation. A more reflexive organizational approach is suggested. The empirical part of the study is based on qualitative research of five case studies, representing a mix of organizations situated in Sweden, all with an explicit ambition to approach greening. The analyses target the organizations’ approaches from practice to assumptions, pointing at the commonalities as well as the tensions. Basically, greening was an issue for all studied organizations, but an increasing pressure to market-orient their operations in line with the business rhetoric dominated their identity construction. The environment was included if there were opportunities of win-win situations between environment and economy in sight. Once embarked upon, the organizations tended to focus on technocratic practices, developing or implementing management systems, product development indexes, life-cycle methodologies and other tools. On a more philosophical level, in the study referred to as the worldview level, the approaches were predominantly characterized by a representative epistemology and a dualistic ontology, that is, they were clearly anthropocentric. With a base in these findings, an alternative approach is discussed as a way out, or as a way of constructing a reflexive dialogue on greening. This is partly based on the tensions within and between the cases, which encouraged reflections on how greening was approached. In the alternative, organizations are seen as actors on a symbolic agora where transparency, participation and self-reflexivity are keys to organizational legitimacy. This view frames organizations in the dominating approach as agoraphobic producers of materialistically dependent satisfiers. The alternative also targets the limits of a preference and materialistically oriented view on the satisfaction of human needs. Instead, it is argued that environmental and cultural sensitivity should be acknowledged as natural parts of organizational greening. This, however, demands more room for reflexive dialogues encouraging ontological awareness and a respect for more ecocentric views.

Key words: organizational greening, organizational approach, technocentrism, ecocentrism, anthropocentrism, reflexivity, postmodernism, environmental management, sustainable development, symbolic agora, satisfiers

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Summary

How and why do organizations approach greening? How can we conceptualize approaches and how can we encourage reflexive dialogues on them? These are the main questions addressed in this qualitative study on organizational greening. The study sets off by discussing matters of research philosophy, arguing that our trust in science ought to be revised and that a more postmodern and constructionist philosophy might be a way to go. This is then followed by a theoretical review, showing that organizational studies have a history in environmental issues, but that it is basically technocentric in orientation. A more reflexive organizational approach is suggested.

The empirical part of the study is based on qualitative research of five case studies, representing a mix of organizations situated in Sweden, all with an explicit ambition to approach greening. The analyses target the organizations’ approaches from practice to assumptions, pointing at the commonalities as well as the tensions. Basically, greening was an issue for all studied organizations, but an increasing pressure to market-orient their operations in line with the business rhetoric dominated their identity construction. The environment was included if there were opportunities of win-win situations between environment and economy in sight. Once embarked upon, the organizations tended to focus on technocratic practices, developing or implementing management systems, product development indexes, life-cycle methodologies and other tools. On a more philosophical level, in the study referred to as the worldview level, the approaches were predominantly characterized by a representative epistemology and a dualistic ontology, that is, they were clearly anthropocentric.

With a base in these findings, an alternative approach is discussed as a way out, or as a way of constructing a reflexive dialogue on greening. This is partly based on the tensions within and between the cases, which encouraged reflections on how greening was approached. In the alternative, organizations are seen as actors on a symbolic agora where transparency, participation and self-reflexivity are keys to organizational legitimacy. This view frames organizations in the dominating approach as agoraphobic producers of materialistically dependent satisfiers. The alternative also targets the limits of a preference and materialistically oriented view on the satisfaction of human needs. Instead, it is argued that environmental and cultural sensitivity should be acknowledged as natural parts of organizational greening. This, however, demands more room for reflexive dialogues encouraging ontological awareness and a respect for more ecocentric views.
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An inquiry into organizational greening

This study focuses on the characteristics of organizational approaches to greening and how they might be conceptualized. In this chapter, a brief overview of the field, as well as the purposes of the study, are presented. At the end, there is an outline of the remaining chapters.

Introduction

This study targets the characteristics of organizational approaches to greening, i.e. approaches to becoming less harmful to the environment. The topic is encompassing and a matter for all levels of analysis: individual, group, organization, society and international. It also crosses established scientific boundaries, or as Egri & Pinfield (1999, pp. 209-210) put it: “one delves into both the natural sciences (ecology, biology, chemistry) and the social sciences (philosophy, sociology, organization theory) in a search for areas of intersections and divergence”. So far, however, the natural sciences have dominated the area, whereas the social sciences have been slower to react (c.f. Meima & Welford, 1997). That is, environmental matters have predominantly been dealt with through hard scientific perspectives rather than more human and socially oriented perspectives.

In Sweden, the social science side of environmental management research was more or less disregarded until the late 1980s (Schwartz & Wolff, 1989). This situation was slightly altered during the mid and late 1990s when a number of dissertations and other academic reports on environmental management and organization were published (c.f. Dobers & Wolff, 1995; Dobers, 1997; Catasus et al, 1997; Schwartz, 1997; Dobers, 1998; Strannegård, 1998). Internationally, the topic gathered momentum in the academic community in the mid 1990s. One reason for this was the world summit on sustainable development in Rio 1992. Another reason was the creation of environmental management systems (EMS), such as EMAS (Eco-Management and Audit Scheme) and ISO 14001 (International Organization for Standardization). One of the leading management journals, the Academy of Management Review, even published a special issue on the environment in October 1995. Many well-quoted articles, as Dobers et al (2001) note, are also from this period.

Organizations and the environment is also a controversial and emotional topic, and a multitude of actors are promoting a multitude of viewpoints (c.f. Fineman, 1996; Egri & Pinfield, 1999). Some call for radical change and others for more incremental movements. Some emphasize so-called hard facts of greening, or the technological sides of the process, whereas others emphasize the softer sides of greening, seeing it as a matter of changing cultures and underlying values. In arguing for a particular view, many scholars have tried to make sense of this diversity. They often come to center on limiting the number of approaches into a handful of categories, reducing the complexity and increasing
the comprehensibility to some extent (c.f. Gladwin et al, 1995; Rikhardson & Welford, 1997; Wolff, 1998; Egri & Pinfield, 1999; Dobers et al, 2001).

Organizational approaches to greening

The typical categorization of organizational approaches is divided into those advocating business as usual; those promoting radical change; and those in between. These views are analytically interesting and actors are often framed as leaning towards either of the two extremes. They are extremes, however, or conceptual endpoints as Egri & Pinfield (1999) frame them. In practice, hybrid combinations, or in-betweens, are most common, even though there are reasons for why the first category, those not seeing any reason for acute action, has been labeled the dominant social paradigm.

The dominant social paradigm

Actors leaning toward this category do see environmental problems out-there, but argue that they are best combated through pursuing the path already embarked upon, or as not deserving any particular attention at all. Other labels for this category are ecological modernization, the positivistic paradigm and the technocentric paradigm. The view is based on a materialistic worldview along with scientific reductionism. It has its roots in assumptions on economic growth, profit maximization and on treating the environment as an endless prairie of natural resources to be used in progressing society. Boulding (1968) holds advocates of such a view as "cowboys in a spaceship". In other words, environmental problems are externalities, or in the most radical parts of this category, close to non-existing. Those problems identified are best dealt with through developing more technologically sophisticated processes and products.

On the organizational level, the view is mechanical (c.f. Burns & Stalker, 1961), leading to traditional and hierarchical organizational structures that emphasize control, productivity and cost-efficiency. The approach advocated is particularly modernistic (c.f. Parker, 1992; Murdoch, 1995), as also framed by the term ecological modernization. Lidskog (1998) argues that this approach has gained a particular momentum in both the public and the private sector (see also Gladwin et al, 1995; Luke, 2001). He views this as a problem since it suggests that we can modernize our processes toward sustainable development. This holds such transformations as socially uncomplicated, that is, as neglecting the complexity of social systems (c.f. Wolff, 1998). This, to some extent, also counts for the next category, those arguing for radical change.

The radical environmentalist perspective

The second category is the most critical one, arguing for radical change towards more ecocentric and less technocentric actions. Other labels for it are, for
instance, the critical paradigm and the ecocentric paradigm. Egri & Pinfield (1999, p 217) list some of the extreme approaches included in this category: deep ecology, in which we have no right to interfere with all life forms; spiritual ecology, in which the spiritual links with all aspects of creation are recaptured; social ecology, in which grass-roots planning and governance reflect local ecosystems; and ecofeminism, in which all forms of oppression are ended. The radical perspectives have been criticized for their utopian character and for neglecting, just as in the first category, the complexity of social problems and systems (c.f. Wolff, 1998).

Egri & Pinfield (1999) argue that radicals tend to focus on criticizing and often launch their critique from outside the context they criticize. They are also less clear on which theories are to replace the existing views. That is, it is easy to be critical, but more difficult to be constructive about what to do about the problems. The dichotomized relationship to the dominant approach is at the same time evident.

There are scholars, however, that have established a critical position to corporate, especially transnational corporations' (TNCs) environmental destruction that also suggest ways out (c.f. Gladwin et al, 1995; Korten, 1995; Peattie, 1995; Hanson, 1996; Söderbaum, 2000; Welford, 2000). Their ways out hover around less anthropocentric and economistic values and perspectives, as well as more participative arrangements on both the organizational and the societal level. These ways are necessary, they argue, since strivings for economic growth and profits are problematic, specifically as such ambitions have been recognized as contributing to over-exploitation of natural resources. These matters have also been intimately linked to issues of fairness and resource allocation, to patterns of who receives the benefits from economic growth and who pays for them (c.f. Klein, 2000; Wokutch, 2001). Costanza et al (1997, p 70) state that we have experienced two generations of economic growth since the international development programs were established after the Second World War and parallel to this, the inequality among the world's citizens has increased.

The reform environmentalist perspective

The third category could be recognized as the middle way, bridging the two extremes to some extent. This is also the category where most scholars and managers could be referred, even if most tend to lean towards either extreme. Other labels for it are, for instance, the interpretive paradigm and the sustaincentric paradigm. This category is the most diverse one, probably because it plays both sides of the extremes. Those trying to merge economic growth with environmental protection are one example. Such a view is, however, due to its position, criticized from both ends. But the merger has gained momentum through the concept of sustainable development, partly popularized through the Brundtland report (WCED, 1987). One example of why the concept has been diffused is illustrated by the Greening of Industry Network (GIN), the largest international cross-sectorial (scholars, managers, policy-makers) network focusing
on business and the environment. In their journal, *Business Strategy and the Environment*, it is stated that: "Since the start of the Network the focus in the debate has changed significantly. Our name reflects the problem perception of the early 1990s: ‘greening’ (environmental change) and ‘industry’ (a focus on one part of society)” (GIN, 2000, pp. 352-353). The network instead labeled their conferences with *sustainability* in 1999, 2001 and 2003, and with *social responsibility and sustainability* in 2002.

Indicating some of the tensions in the reformers category, Egri & Pinfield (1999) argue that from one perspective the concept of sustainable development is impossible. Environmental sustainability and economic development are based on different principles. In other words, the use of sustainable development by managers and scholars has at times been acclaimed to be based on the assumptions inherent in the dominant social paradigm, while simultaneously promoting the necessity of greening and social responsibility. Egri & Pinfield (1999, p 220) claim that: “There is the fundamental risk that an incremental approach may be concerned with only solving superficial symptoms rather than addressing the root causes of environmental degradation” (see also Gladwin et al, 1995; Welford, 1997). Among other things, this points at some of the tensions in organizational greening. It also indicates that the reform category is an interesting place to be when studying greening. In the extremes, things are clear. In the middle, eyes and ears have to be alert.

Following this typical categorization, this study holds the reform perspective as reflecting the dynamics of organizational greening. It houses opportunities for making different aspects of greening, which an organization might encounter, more visible. Further, having the organization as the focal object, this study aims at linking what Egri & Pinfield refer to as root causes with what might be easier to observe, i.e. superficial symptoms. The task is to link assumptions on greening to greening in practice. At times, organizational approaches to greening could seem alike on the surface, but underneath, they could be radically different, and vice versa.

**Below the surface of studies on organizational greening**

As noted, writings categorized in the dominant social paradigm, as well as many in the reform perspective, assume the position of promoting greening through taking the basic assumptions in the dominant social paradigm for granted (c.f. Hart, 1995; Shrivastava, 1995). They are thereby focusing more on making incremental adjustments to traditional management and organizational theories rather than critically reviewing the assumptions, or root causes, underlying them. The majority of environmental studies, it seems, is rooted in this position. It lives in the foliage, while the trunk remains undisputed (Sandström, 2001b). In this way, the environment becomes yet another factor to be weighed in when developing corporate strategy. The resource-based theory of the firm becomes the natural-resource-based theory of the firm (Hart, 1995). Several aspects such as
economic growth, profit maximization, consumerism and technological excellence remain institutionalized as means, often ends too, toward sustainable development. In the mainstream debate, these aspects are seldom reflected upon, resulting in a surface oriented debate. In a way, radicals bring fresh views on these ends and means into the debate, but they often fail to acknowledge and incorporate those in the foliage’s realities. There is therefore a need for studies focusing on the surface as well as on what is underneath. The trunk and the foliage go together.

This also brings the role of the scholar into the picture. Reflecting on assumptions in the mainstream, or the dominant view, is unfortunately often perceived as a predominantly political venture, placing the scholar in the radicals’ category. A point made in this study is that all research is political. Roome (1998, p 271) argues that scholars are not neutral observers: “Researchers have a responsibility to construct bridges between theory, concept, method, and practice and should be critically engaged in the processes of organizational learning, progress, and change for sustainable development”. Critically reviewing assumptions on greening are, though, at times brushed aside due to its supposedly normative emphases. A normative view means that the research results will probably be biased, not trustworthy and even considered hindering further development of the field. Dobers et al (2001; see also Wolff, 1998) argue that there is already a base with technical and emancipatory (critical) studies. They claim that there is rather a lack of hermeneutic knowledge interests in the literature on greening. The literature review conducted for this study identifies a similar gap, but the point, which their article does not seem to address, is that politics influence all research processes. The approach adopted in this study has technical and hermeneutic studies loaded with values as well. Such studies are no exceptions.

This is, however, a matter of research philosophy (see chapter two), but as researchers claim some sort of value-neutrality or objectivity, they place themselves in the dominant social paradigm, neglecting important aspects of the process. They neglect that there can only be views from viewpoints. No research is non-normative. What we can do as active participators in the debate on greening, and what is lacking in writings on organizational greening to some degree, is to be upfront with our viewpoints and reflect upon how they influence our actions (c.f. Denzin & Lincoln, 1998). This also means that, emancipatory research or not, the task for the student of greening is to adopt a critical approach not only to the objects of study, but to him- or herself as well. The argument in this study is that there is a need to reflect upon assumptions on greening together with a focus on what is done in practice. In combination with a self-reflexive focus on the scholar, such an ambition makes this study different from the mainstream writings on organizational greening. There are, though, three additional reasons for why this particular study has been carried out.

One reason is that organizational actors are constructing an environmental movement that has started to become taken for granted. This process has, from
one perspective, gone from a post-war period of awakening to a time when the environment is one of the key factors deciding corporate performance (c.f. Jamison, 1996; Hoffman, 1997). The dominant approach in industry is predominantly symbolized by the spread of the EMS standard, the ISO 14001, launched in the mid 1990s (ISO World, 2002). Sweden is by the way, despite its relative smallness, among the top five nations in terms of the total number of certifications. Other signs of industry's approach are the spread of eco-labels, the creations of environmental affairs departments, appointments of environmental managers, the release of environmental reports and the eco-emphases in product development (design for environment, eco-design, life-cycle design). Becoming a taken for granted aspect of how to do business, as these signs indicate, assigns the environment a legitimate place in the organization and in the organizational context. Underlying assumptions driving the environmental work, however, risk being neglected or simply not reflected upon as environmentalism, as well as the business community as such, moves on. In other words, we are in a way getting used to greening, which is one reason to study it even deeper.

Another reason for pursuing this task is, as noted, that the assumptions inherent in the dominant approach have been connected to environmental destruction in practice (c.f. Korten, 1995; Welford, 1995; Wackernagel & Rees, 1996). The view of the radicals, as well as of many reformers, holds strivings for economic growth as legitimizing a short-term perspective on the use of natural and social resources. A fiscal year conception of time is different from a more geological conception of time. What is beneficial in the short-term might be quite poor resource management in the long-term. Green Parties around the world have this as their core political message. In the business perspective, people and environment tend to become tools for the economy in the process, not the other way around (c.f. Max-Neef, 1992; Welford, 2000). There is, hence, from such a view, a need for more human, socially and environmentally focused approaches. There seems to be a demand, as well as room, for alternative organizational approaches to greening.

A third reason is that although management and organizational scholars have awakened to the organizational greening taking place in society, there is a bias towards particular types of studies. The increase in new green journals and books available for the interested scholar is striking, but we still know little about the social processes, about the characteristics of organizational greening. The main part is rather technical in orientation, targeting specific areas and concepts, such as EMS implementation, environmental accounting, eco-efficiency, life-cycle assessments, eco-labeling, clean production, greening the supply chain, eco-balances and eco-design. Sweden's largest financier of environmental research projects, MISTRA, supported a handful projects on organizational greening from social science perspectives in 1998. The total amount of projects supported that year was 79 (MISTRA, 1999). There is partly therefore a lack of studies from a social science perspective as well as a lack of studies that cares for the assumptions underlying greening in practice.
The purposes of the study

Organizations and the environment is also a sensitive topic. There are established positions and perspectives in the academic and the corporate communities that do not agree, but rather oppose radical reformers' views on thoroughly revising organizational action. Some line of industries should according to the radicals even be abandoned, but this fit poorly with the corporate idea of going concern. Many corporate actors, however, have chosen not to interpret environmentalism as a threat, at least not on the surface. They have rather come to adopt a general approach in which the issues are invited and embraced, thereby placing themselves in the dynamic in-between category. But as critics point out, the environment is in the process lifted into a business-driven approach and translated into new competitive advantages, mainly in line with Egri & Pinfield's criticism of the concept of sustainable development. The image is that of the environment and the business moving together toward new and more sustainable operations. Welford (1997) argues that industry is hijacking the environment. Luke (2001) claims that we are facing a new economic growth ideology. In this way, incitements for corporate change in line with the radicals are scarce since such transformations might reposition an already privileged actor.

The business community is interesting in this sense. Its influence in society is increasing. Firms become mega-firms through mergers and acquisitions, creating organizations financially larger than nations (c.f. Asheim & Dunford, 1997; Gladwin, 1998; Sandström, 1999a). As such they are often framed as the main environmentally destructive actors. But they are also the ones with the largest amount of resources that could be put to use in altering the developments. This makes them dynamic objects of study in organizational greening. They are also the main targets in this study.

One of the interests in this targeting lies in linking organizations' environmental work in practice with the underlying assumptions upheld in their work. It means investigating what is done in practice, by who, how and why, as well as what they believe in and identify their organizations as. In other words, assumptions on the environment, society and business are linked to what the particular organization, through its representatives, does in practice. The first research question addressed in this study is therefore: What characterizes organizational approaches to greening?

There are concepts framing organizational approaches to greening. Some of them have been mentioned already, but as noted, many point at a technical knowledge interest. New management systems and new product development tools and systems seem to be prioritized areas. With the approach taken in this study, could different concepts be developed that better frame the dynamics of organizational greening, or could at least already launched concepts be developed further? The second question is: How can we conceptualize organizational approaches to greening?
The third question is based on an interest in what types of organizational approaches that are considered and what types that are left out in the process. The brief review in this introductory chapter mentions an approach being labeled the dominant paradigm. The first question will give an indication of whether or not there are approaches constructed out of such characteristics, but there is also an interest here for which type of approaches that are not heard. Why are particular approaches adopted and others neglected? The categories reviewed show a one-sided debate. Could some of those approaches not apparent be of interest in order to stimulate reflections on those that are? The third research question is therefore: *Is there a need for alternative organizational approaches to greening and if so, what might characterize them?*

There are, of course, ambitions behind posing these three questions. The main aim of this study is to further our knowledge of how organizations approach greening, but more specifically, three purposes are singled out:

- **To describe characteristics of organizational approaches to greening.** Linked to the first research question, the aim is to contribute to the knowledge gap on how organizations are approaching greening through adopting a more social science as well as more holistic view on the characteristics of organizational approaches. Instead of dissecting the study into a focus on a particular part, the aim is to frame the approaches from practice to assumptions.

- **To contribute to the conceptual base on theories on organizational greening.** Linked to the second research question, this aim is based on answers to the first purpose. As the introduction indicates, however, there is a conceptual base that is technocratic and particularistic in orientation. There is, hence, a particular opportunity to contribute to the less technocratic side, or at least to better illustrate the technocratic dominance of the conceptual base. Through alternative concepts, more social and political aspects of greening might be explored as well.

- **To open up for reflexive dialogues through discussing alternative approaches to greening.** Linked to the third research question, for the multitude of actors, representing a diverse set of desires, there is a need for open and tolerant approaches in order for the diversity to be voiced. A dominant approach might be a signal of a difficulty for alternative approaches to co-exist. This is problematic, especially when the issue at hand is to deal with what seems to be growing environmental destruction. The aim here is to create possibilities for scholars and practitioners to keep the dialogue on organizational greening alive and thereby create opportunities for less environmentally destructive processes to develop.

Four main sources of inspiration are relied upon in accomplishing the purposes of the study:
1. Management and organization studies on greening. This is the core of the theoretical framework. The main parts are technocentric in character, relying on a modernistic mindset. In this study, more reflexive and postmodern approaches are voiced.

2. Management and organization theory. One driving force behind this study is the neglect of the environment in organization and management studies. The relationship is ambiguous, however, when many efforts in this area are also sources of inspiration. They have much to offer our understanding of how organizations approach new issues, such as environmental issues. Basically, though, the area is in need of less anthropocentric and technocentric approaches, leading me to the third source of inspiration.

3. Sociological writings on environmental risks, knowledge creation and modernity. These writings are predominantly used in order to review the organizational context as well as to compensate gaps in management and organization theories, for instance, their neglect of the environment as well as the patterns upheld by such neglect.

4. Case studies. Five case studies of organizations that have decided to approach greening have been encountered. All of them were established in Sweden: two large firms (Husqvarna and Duni), one public organization acting as a firm (FMV) and two environmental projects (GreenZone and the Green Guide). GreenZone consisted of three multinational firms and one family-firm. In the Green Guide, eight small firms were targeted. All cases have been studied through qualitative methods.

Outline of the study

Chapter two (Research philosophy) - In which it is argued that our trust in science ought to be revised and that postmodernism is a way to go. A constructionist perspective is developed, in which writings on reflexive modernization and actor-network theory provide some insights. The chapter houses some tensions, however, as it is also influenced by modernistic traits.

Chapter three (Environmental issues in organization studies) - In which the theoretical framework is outlined. The discussion shows that organization studies have a history in environmental matters. A lot of it is technocentric in orientation and a more reflexive approach is suggested.

Chapter four (Research methodology) - In which case study methodology is discussed as appropriate for understanding the complexity of the subject matter. The chapter also introduces how the five cases were encountered, written and analyzed.
Chapters five to nine - In which the five case studies are accounted for. Each case, and thereby each chapter, closes with a within-case analysis of the approach encountered, preparing the cases for the subsequent analyses.

Chapter ten (Approaches across the cases) - In which a cross-case analysis frames the organizations as greening while increasing their market orientation. There was a focus on technocratic solutions in the environmental work and the organizational identities were particularly influenced by a pressure to conform to the business rhetoric.

Chapter eleven (Technocentrism and reflexivity) - In which theory explicitly enters the analysis, revising the main categories from chapter ten. The analysis holds the cases as technocentric, but the diversity among the cases also indicates some tensions in their approaches.

Chapter twelve (Beyond technocentrism) - In which an alternative going beyond technocentrism is pursued in order to open up for reflexive dialogues on greening. It revises the technocentric view of the organizational context and questions the focus on standardized economic goods as needs-satisfiers. Recommendations for further studies are also made.
2 Research philosophy

In this chapter, the research philosophy is developed. Part of the arguments hold our trust in science as overrated and that a more postmodern and constructionist path is a way to go. The discussion is, however, also influenced by several modernistic traits, creating some tensions. These tensions, it is argued, are dealt with through keeping the dialogue alive through reflections on our forms of becoming.

Introduction

The French philosopher Gilles Deleuze is, according to Rajchman (2000, p 38), fond of the expression “one thinks one is at port only to discover that one is in fact still at sea”. Rajchman goes on to speculate about Deleuze’s fondness. I will not do this, but the quote still frames my state of mind when writing this chapter, as well as the study as such. Studying how things are and how we get to know them (ontologies and epistemologies) is full of imaginary ports. Especially when aiming to discover how things really are out-there. Tsoukas (2000, p 531) claims that we should not ask whether our studies “get to the truth of the matter; whether or not they capture what is ‘really going on out there’. Such questions are unhelpful, largely because they are undecidable: we lack the conceptual resources to answer them.”

Imagine trying to answer a child who time and time again asks “why?” Personally, I tend to resign to a “you don’t understand” or a “you’ll understand when you grow up”. This is often based on the fact that I simply cannot explain it. This results in a bewildered kid who instead copies my actions. Incidents like this also spark reflexive pauses on my behalf echoing: How is it really? But even though I find myself in such pauses, truth or reality is rarely found out-there. Reality is rather created in the relationships between what are recognized as out-there and in-here. That is, reality is not objective in the sense that it is dependent upon who we are. All studies claiming to be scientific should therefore approach not only the object of study, but also the subject conducting the study. Any knowledge-endavor, basically, ought to take full cognizance of the investigator (Morgan & Smircich, 1980, p 499; Denzin & Lincoln, 1998, p 24; on greening, see Roome, 1998).

Such a view also holds things that we take for granted as dynamic, as moving along with us. Some change slowly and others fast, only separated by the different time-frames in which they flow. From a human perspective we usually adopt quite short-range perspectives in our analyses and thereby we miss out on a lot of inert movements. For us, with a fiscal year conception of time, a stone’s erosion tests our impatience. The stone is moving, though, and it is never the same stone, just as Herakleitos argued that when we step in the same river for the second time, it is no longer the same river (pánta rhei, everything flows). From a scientific view, even the most inert natural laws are also molded in scientific
discussions. Social processes, such as our everyday habits and routines, are also moving, although many are persistent and consequently labeled institutions. In short, our worlds are moving. They are never the same and we continuously need contemporary studies touching on how we are making them.

I wish to invite the reader as I am relating to different worldviews and organizational approaches to greening. Through explicitly discussing matters of being and knowing, perhaps the scientific value and credibility of this study's also might be easier to judge (Denzin & Lincoln, 1998; Kincheloe & McLaren, 1998). It might even give the reader an idea of where the values behind this study are rooted and why making it is important to me, as well as an indication of why it might be of interest to others. Such a discussion should also be mandatory as we tell our stories (Parker, 1995). To make use of a metaphor indicating stubbornness, curiosity, madness, humbleness (to nature and other creatures), and other associations one might have, this study is in a way a scientific walkabout.

A last reason for discussing different worldviews in organization studies is to create an interpretive scheme for understanding researchers and interviewees drawn upon throughout this study. In later chapters, you – the reader – will not only get an insight into some of the academic works on the topics of this study, but also get to know different organizational actors. An ambition here is to develop and suggest a platform that could assist in understanding the actions of academic scholars, engineers, captains, visionaries, farmers and administrators. As a point of departure, I begin with a personal anecdote from my time before enrolling in the doctoral program at USBE.

**Reality or realities?**

My first job after my university degree in business administration was with a consultant firm in Umeå, Esam Ltd., at the time employing four people. They worked with (still active) environmental issues and sustainable development processes in both public and private organizations. The issues were all new to me as my major was in entrepreneurship and small business. Two months into my professional career as an administrator and soon-to-be-consultant I followed two of my senior colleagues to a training in a rural municipality in the northern part of Sweden. It was October and winter was relieving autumn from its duties, although autumn still had some tasks left. It especially had to make sure that all the leaves from September's color-show were dismantled. Leaves were literally everywhere, but the setting was beautiful. The facility lent to us was an old village school. As the village had dispersed through time there were no children attending. The school was therefore used for alternative activities, which explained our access to this cultural treasure.

Our training had attracted twenty participants. Some of them were unemployed, some were civil servants, and some were managers of environmental projects in their local communities. During our first seminar, two
of the participants were clearly dissatisfied with my colleague’s lecture. They might even have been considered hostile. Sitting in my chair, taking notes, listening to my colleague, I found myself turning away from the two persons. The first hour was long and it carried a tensed mood in the classroom. No participant, except for the two dissatisfied ones and my colleague, uttered anything. I became a bit anxious as our firm was a fairly small one. We could not face too much negative word-of-mouth when it was our most effective marketing tool. I became worried about the result of the seminar and I wished the two persons were elsewhere. It bothered me even more when I did not perceive my colleague being provocative in any sense. What was the fuss about? Why were they harassing us?

When our first and longed-for break came I was relieved, but my colleague did not stop at our table. Instead he did something I did not understand at the moment. He got a cup of coffee (that part I understood) and joined the two participants outside on the porch. The rest of us were curious about the development. Although we tried to look occupied, we were all eavesdropping. We did not really hear what was said, but the discussion was lively. After ten minutes, which felt like seconds, we all went back in and started again. The atmosphere had changed into a friendly and gentle one. Something had happened on the porch. It was like we were in a new theater experiencing a different play. All participants joined the discussion, including the two (formerly) dissatisfied ones, and we had a great day finishing off with a barbeque down at the riverside.

Later that night I asked my colleague what everybody meant to ask: “What happened on the porch?” My colleague got a surprised look on his face: “What do you mean?” I specified my question: “Well, they were not so respectful during your lecture and I thought they would harass us all day, but something happened”. His face became one big smile: “Ah, I see. Well I told them that we have completely different views on things and that it fascinates me. There are eighteen other people in there, but they’re all nodding their heads, smiling. I don’t know what they’re thinking about and I probably won’t learn so much from them. You’re the ones I can learn from.” That was it. Problem solved.

It was not until later as I continued to mold this situation over and over again that I discovered the courage my colleague possessed. I envied him. My reaction so far in life had been to do the opposite, to turn away from or attack (not physically) people sending out vibes that I perceived as negative or different from mine. My colleague invited them and was probably the one who developed the most during that training. He searched for the opposite, or the different. Thereby he got a new perspective on his own values and beliefs. My lesson was that we all to different extents have different perspectives on things and that this should be taken into consideration, not only for their sake, but for my own too. Searching for the different also made my colleague more confident when meeting people. He seemed to have a huge portion of empathy for other actors’ reality. It also struck me afterwards that the first thing I thought about during the first hour of the first lecture was our firm’s economic future. After all, I was trained to be a businessman.
So, where is this story leading? Well, there are a couple of cues. One of them is the existence of a single reality versus multiple realities. My colleague obviously believed in multiple realities. Things that he perceived as real did not have to be real for the person opposite him in the classroom. So people have different realities, or do they? A critic might ask if there is not a reality out-there, independent of us and for us to live in? What about the environment, for instance? Does arguing that people have different realities include denying the reality of universal laws such as gravity and thermodynamics? Is not this reality the same for all of us?

My colleague’s lecture included a model originally developed by a set of researchers cooperating under the umbrella of The Natural Step, or TNS, a non-profit organization working for a sustainable society (c.f. Robért, 1992; Robért et al, 1995; Boström, 1999; Upham, 2000). In their model there are four conditions, which must be fulfilled if we are to achieve sustainability. The participants at our seminar had to learn them. I had to learn them and they were almost like a mantra. When TNS started spreading its message and operations internationally the conditions had been implemented in over sixty Swedish municipalities and several hundreds Swedish firms. I participated in some instructors’ seminars and at the time the four conditions spelled like this:

1. Substances from the earth’s crust must not systematically increase in nature
2. Substances produced by society must not systematically increase in nature
3. The physical basis for the productivity and diversity of nature must not be systematically deteriorated
4. Fair and efficient use of energy and other resources to meet human needs

The first three are non-negotiable scientific conditions constituting the environment’s own limits. In layperson terms the first systemcondition means that we cannot extract substances from the earth’s crust, such as oil, lead, mercury, cadmium, copper, arsenic, uranium and plutonium in a faster pace than the environment manages to sediment those substances back into the earth’s crust. During our seminar this was exemplified by oil. It was claimed that we extract approximately a million times more than is sedimented, which means that we are far away from sustainability regarding our use of oil. The second condition is perhaps best exemplified by well-known unnatural substances and acronyms such as PCB, DDT, PVC and CFC. In her epochal work Silent Spring (1962), Rachel Carson illustrated the platform for this condition when targeting the use of different pesticides and their spread into our water systems. The third condition, focusing on productive green areas, was illustrated by the rapid felling of rain forest and by our growing infrastructure. As we use recreation grounds and other green open spaces for different infrastructure projects, we reduce areas for new resource creation as well as for biodiversity.

The fourth systemcondition is more concerned with human nature, targeting the satisfying of basic human needs in a fair and efficient way. This
condition is the least developed one as there is no strict definition of what needs we have. Abraham Maslow has figured. Closer to the topic of this study there is, for instance, the Chilean economist Manfred Max-Neef (1992). The needs range from food, shelter and safety to identity, participation and creativity. The fourth condition is commonly framed by the 80/20-dilemma. That is, 80 percent of the population controls 20 percent of the resources. Consumption and production patterns in what is recognized as developed countries are considered by far more resource efficient than those in what is labeled underdeveloped countries.

On the whole, however, the fourth condition is, contrary to the others, more subjective. One could argue that there is a mixed perspective in TNS’ framework. When thinking about it, my colleague also represented a mixed perspective as he preached these conditions. Some things are given and others are not. Some things are perceived as out-there (natural laws) whereas others are in-here (human needs). The figure below displays a very simple image of the extreme views. On the left side there is an objective reality out-there for us to discover and gather knowledge about. On the right side there is no reality out-there when we are making it up through subjective minds-in-vat processes. In TNS’ framework, reality is based on both objective and subjective, or on both a dualistic and a non-dualistic view of the world. Mixes of the two extremes are also what most commonly appear in writings on management and organizations. The figure shows the conceptual endpoints:

![Figure 2.1: Out-there and In-here reality](image)

TNS’ framework could be seen as carrying a modernistic faith. The first three conditions hold reality as translated into hard facts through scientific findings. They indicate that this is how things are and how things must develop if we are to achieve a sustainable development. In TNS’ case it is even argued that the conditions are based on scientific consensus. This consensus is foremost made out of the two first laws of thermodynamics and they are not negotiable. The first law holds that matter and energy cannot be created or destroyed. In other words, when we power our vehicles with gasoline, the fuel does not disappear when using the car. It changes form. The second law of thermodynamics holds that matter and energy tend to disperse. This is the law of entropy, of going from order to disorder. A drop of ink in the bathtub disperses. It does not disappear.

Thermodynamics together with our persistent digging in the earth’s crust, our composing of unnatural substances and our suffocation of green surfaces
make the case clear. Scientists agree and only a fool would argue against it. Making arguments against it would also express distrust in science and its role in society's progress.

Within the academic community I operate in, a critical stance would probably be labeled a postmodern attempt to deconstruct what really is reality. However, natural laws derived from natural science may not always have been there and in a reflexive community, or modernity (Beck et al, 1994), they will always be open for revision (Giddens, 1991/1997, p 31). Even scientists are from time to time suggesting a more humble approach to certain scientific facts, especially in the contemporary environmental debate (c.f. Beck, 1992; Lash et al, 1996; Adam et al, 2000). Some scientists even go as far as to claim that scientifically derived environmental problems are close to non-existing, or at least particularly exaggerated. The Swedish publisher Timbro is one channel for such claims. One example is their newsletters on environment, technology and development. In them, a reader finds articles on, for instance, the exaggerated alarms on radiation, the incorrectness in doomsday scenarios and the doubtful links between human actions and the greenhouse effect (c.f. Timbro, 1999). The debates, though, seldom go as far as arguing that the most inert natural laws exists only in our heads, hence, a radically subjective notion of science (right hand part of the previous figure). The matters basically come down to different interpretations. Gergen (1999, p 14) reflects on the matter:

They [natural sciences] tell us about the world as it is. Truth claims within these disciplines are also lodged in the concept of the individual knower - the individual scientist who observes carefully, thinks rigorously, and tests his/her conclusions against the world. Knowledge begins, it is said, with careful observation. Yet consider this configuration that I call 'my desk.' In my world the desk is solid, mahogany colored, weighs some 80 lb, and is odorless. Yet, the atomic physicist approaches this configuration and tells me that it is not solid after all (it is primarily constituted by empty space); the psychologist informs me that it has no color (as the experience of color is produced by light waves reflected on the retina); the rocket scientist announces that it only appears to weigh 80 lb (as weight depends on the surrounding gravitational field), and the biologist proposes that my sense of smell is inferior to that of my dog for whom the desk is rich in olfactory information. As carefully as I might observe, I would never reach any of these conclusions.

Around 1997 TNS experienced a credibility conflict as another group of scientists criticized the absolutism of their system conditions (DNS, 1997). Tor Ragnar Gerholm, a professor in physics, versus Karl-Henrik Robért, a specialist on cancer and the founder of TNS, symbolized the debate. The critics, endorsed by the publisher Timbro mentioned earlier, argued a less absolute interpretation of the conditions and tried to spread scientific doubt into them. They were, however, criticized for questioning TNS on entirely political grounds. Their intentions were doubted and they were perceived as speaking on behalf of industry as letting the conditions gain momentum would mean a huge pressure on the business community. This indicates that issues of power and credibility
were never far away throughout the debate, although it circulated around what were supposed to be undisputed scientific facts. Representatives of TNS felt they maintained their position throughout the conflict, but the system conditions were altered. The critics made their mark. They showed that TNS also based its argumentation on value judgments (c.f. Upham, 2000). The present definition looks like this (DNS, 2000):

In the sustainable society, nature is not subject to systematically increasing:
1. Concentrations of substances extracted from the earth's crust.
2. Concentrations of substances produced by society.
3. Degradation by physical means. And, in that society:
4. Human needs are met worldwide.

Instead of "must not", the conditions include "not subject to systematically increasing concentrations and degradation". They are more humble compared to their predecessors, although there are still traces of the same objective reality. There is still a belief in the sustainable society, which might be problematic since a slight lean to a more subjective view on reality most likely would reveal a multiplicity of alternative sustainable societies.

Following the TNS framework further, however, especially when focusing on the fourth and last condition, the objective view on reality is hesitating. It might be regarded as a lean towards a less stringent objectivity. Human needs to be met worldwide. What needs do we have? What is a fair share? Who is to decide? These issues are too complex to handle for the researchers behind the system conditions. Why else use only one condition for such complex issues? Perhaps it is due to the difficulty of claiming universality when it comes to human needs. In some research areas, though, people make a genuine effort at it. In neoclassical economic theory, universalistic prerequisites frame human behavior. It might be that TNS is influenced by such a stance and therefore sums it up in one condition.

The ontological discussions are, as showed in TNS' example, extensive, but interesting. TNS is also but one example. The organization is, though, a decent point of reference due to its involvement in the international environmental movement, as well as in my background and in the cases in this study. TNS, as well as many of the other actors referred to above, are, however, situated outside the core academic context I operate in. This refreshes my context, but there are scholars within the social sciences that have approached this topic too. One example is the study on underlying assumptions in the social sciences by Burrell & Morgan (1979; see also Guba & Lincoln, 1998).

The authors identify four sets of assumptions: ontology, epistemology, human nature and methodology. Ontology stands for the view of reality; epistemology with how that reality becomes knowable; human nature with how we relate to our environment; and methodology with how we investigate the social world (a practical version of epistemology). Burrell & Morgan (1979) argue
that these assumptions are all interrelated and one set often follows the other (c.f. Morgan & Smircich, 1980). This was also evident in the TNS case.

I will in this study refer to these assumptions, with some reservations for methodology, as integrated parts of a *worldview*. The authors use the term *paradigm* and although it in some instances could be used interchangeably with worldview, paradigm is a concept carrying an extensive history. Worldview is less loaded. Together with matters of identity and practical aspects, a worldview becomes, in my terms, an *approach*. The discussion so far has predominantly targeted ontological issues and it briefly proceeds below.

**Ontological slipperiness**

The TNS case is one example of an ontological debate characterized by a duality between nature and society, rooted in the Antic era (Henrikson, 1958/2000; Ambjörnsson, 1984; Latour, 1999). Burrell & Morgan (1979) refer such a duality to a dichotomy between subjectivity and objectivity. These discussions are unfortunately often painted in black and white, just as I managed to do in the out-there/in-here figure. In doing so we have to acknowledge that we are more or less performing a modernistic heritage (Kincheloe & McLaren, 1998, p 270). I have at least one foot in this heritage as I tend to fix people, ideas and worldviews, and “you can be sure that the object of study always exceeds its analytic circumscription” (Marcus, 1998, p 391).

A reader might sense that my analysis of the systemconditions suggests that TNS is not as consequent as they should be. On one hand they are strictly objective and on the other they are fairly loose in their guidelines. Perhaps I should transmit a more objective view of TNS instead. This is not easy, though, but trying to be ontologically sharp is an effort worth pursuing even though some ontological slipperiness is bound to exist (and perhaps worth holding on to). Objectivity-subjectivity, though, are no more than extremes and different hybrid alternatives are all there are. No one I have met or read is in my opinion situated in one of the extremes, but Burrell & Morgan still have a point with their categorization. People often lean towards either end, but leaning carries consequences and responsibilities, especially if you aim at being perceived as a credible knowledge creator. Switching between worldviews might train you in worldview understanding, but it might also complicate your conveyance of a message. In the history of science, specifically targeting scientific scholars, leaning towards either-end has been politicized in two sides. Gergen (1999, p 8) searches for some explanation of the ontological debate:

> Finding ontological dualism unsatisfactory, philosophers have sought replacement in various forms of monism, that is, the presumption of only one world. Most prominently in the nineteenth century philosophers believed there is only one world and it is in the mind; this thesis is called philosophical idealism.
This might be referred to as viewing reality as subjectively constructed. Gergen (1999, p 9) continues, leaning on the technological developments in the twentieth century, by claiming that “idealism has largely been replaced by a second form of monism, namely materialism: there is only one world, and it is material”. This more objectified view on reality originates mainly from scientific (technological) progress. Idealists and materialists – we have yet another dichotomy, but this one seems to illustrate contemporary debates. Focus, for instance, on the making of environmentalism. It is sometimes suggested by idealistic critics that viewing nature as something for humans to master is rooted in a materialistic worldview. Advocates of the opposite position obviously view their critics as vague and as posing no real challenge to their more rationally grounded position. Deep greens versus technocrats, and one debate is framed.

Gergen further emphasizes a time-dimension. In his view we had a pre-modern period where philosophy constituted the core. Further on, there was the modern project where “hard” sciences were the guides. According to Gergen (1999) there is a post-modern period in progress where these positions are criticized and blurred. In these discussions, epistemological matters are never far away. There is also a bond between how reality is viewed and how things are put out-there. TNS’ example shows that worldviews house politics, power and uncertainty. As mentioned, it also seems that “from the research point of view, people do not hold to their ontologies” (Czarniawska, forthcoming). Again, to be ontologically slippery might equip actors to play, aware or not, between different approaches to world-making. Ontological movements, however, have consequences for the type of knowledge that are produced. In this study, ontological awareness is an aim of the process, not a fact from the outset. The aim is also, as my colleague touched upon in the earlier example, to remain open through continuous self-reflections. This matter is discussed further on in this chapter as well. The preceding section moves closer toward knowledge creation.

**Technocrats and postmodernisms**

Scientists ought to acknowledge their part in the knowledge process. Following Kincheloe & McLaren (1998, p 285): “These elites engage in research, turning over the data (the product), not the methods (the process), of their inquiries to low-status practitioners who follow their directions”. Such a statement might shadow scientific scholars’ position as experts, but what could be drawn from such arguments is a suggestion of a more humble approach to science. There are experts, yes. Many people spend a lot of time contemplating specific issues, but good and bad, and right and wrong, do not necessarily divide expert knowledge from lay knowledge. These discussions are especially interesting when scholars and others are touching upon possible futures that include environmental risks.

Focusing on environmental risks, Wynne (1996) targets the dominant focus on expert knowledge when making us ponder the neglect of the cultural aspects of science. Those aspects, Wynne argues, are often found outside the established
expert systems (see also Beck's, 1992, *subpolitics*), in the grassroots. A simple interpretation of Wynne's argument is that reductionist and universal experts and expert-systems are not all there are in knowledge creation processes. Local, lay and contextualized knowledge are important parts, but they tend to be neglected by technocratic forces (in economics, see Söderbaum, 2000). Wynne exemplifies this by a study of Cumbrian sheep farmers' credibility battle with different scientific groups over environmental radioactivity and its effect on the farmers' sheep. The farmers found the battle frustrating as their voice was barely heard. Wynne (1996, p 49) suggests that the controversy illustrates that: "It is easy to see how non-institutional forms of experience and knowledge come to be systematically deleted from recognition, and alternative collective idioms of identity and order thus pre-empted".

The expert way of the scientist is situated beyond the layperson. Without agency (in this context: a faith in that ones actions or interventions do produce a particular result) and responsibility, it confronts the actors (the farmers) possessing the local and situated knowledge. A somewhat similar case is accounted by Bloor (1997, p 235), where he targets the resistance to experts' power in analyzing outreach community work:

Paradoxically, the critical analyst has become the all-seeing expert: the analyst claims to know better than the practitioners (the outreach workers and the therapeutic community staff), but the analyst also claims to know better than those whose resistance should be stiffened (the prostitutes and the patients/residents). Yet if the critical analysts are themselves experts, what kind of disciplinary relationship do they have with their audience? Should not they too be resisted?

In Wynne's case it became evident that the farmers' local knowledge was not as unsophisticated as the experts thought. Bloor makes the same point about the outreach workers and the prostitutes. Local knowledges basically presuppose active actors and they have a built-in reflection and a dynamic, complex and sophisticated nature (Wynne, 1996, pp. 69-70). The battles, however, still hovered around monism instead of pluralism, technocracy before socio-cultural aspects, reducing complexity instead of dealing with it.

Is monism and technocracy all bad then? Wynne do not argue such a view. Instead he pleads for a wider perspective, questioning the claimed rationality of expert systems, aiming at incorporating different types of knowledge and experience. He does not exclude, but embeds. Embedding is not a simple process, as to not question technocratic expert-systems might be "a kind of defence mechanism for coping with the overwhelming difficulty of living with inexplicable and uncontrollable, yet emotionally important forces" (Wynne, 1996, p 54). However, it does not automatically mean that we trust those systems, when sometimes, there is no choice but to believe them even though the risks imposed on us originate from technocratic structures.

Environmental risks spark disputes and whether or not the risks are real do not have to matter when these knowledge transformations still could develop
Wynne (1996, pp. 56-57). Wynne (1996, p 57) asserts that “the most germane risks are (social) relational” (see also Beck, 1992; Tsoukas, 1999). Another example of this is the mad-cow debate. Uncertainty is high, but policy is still affected. Wynne’s discussion is also a good example of a situation where Beck’s (1999, p 146) black box of science is opened. In the debate on environmental risks, Beck (1992, p 69) even goes as far as stating that: “The experiment of people does take place, but invisibly, without scientific checking, without surveys, without statistics, without correlation analysis, under the condition that the victims are not informed – and with an inverted burden of proof, if they should happen to detect something”. In this sense, science is “the protector of a global contamination of people and nature”, but criticizing the “gate through which risks can be scientifically opened up and treated is called the critique of science, critique of progress, critique of experts and critique of technology” (Beck, 1992, p 70, 160). In such a process, however, science might become human.

An example of science’s absolutistic trap is TNS’ case again. If the political quandaries are set aside, the critics questioned the absolutism of the first three TNS conditions and thereby illustrated the fluidity of what were supposed to be fixed states. The conditions were it according to TNS. Break them and bad things will happen. In this case, with a focus on natural scientific facts, the reformers (TNS) were the all-seeing experts and the conservatives were the constructionists. The conservatists played the uncertainty and thereby paralyzing action to some extent. Still, absolutism seems to invite constructionist objections. Following this line of discussion, although from a different view, Herbert Simon (1945/1997, p 70), when revisiting his classic book Administrative Behavior, stated that:

It is sometimes suggested that we turn the decisions over to "experts" who really know the facts and can calculate their implications. Of course the fallacy of this technocratic solution to the problem is obvious. Because most decision premise mingle facts with values, we cannot turn the decisions wholly over to the experts without delegating to them the choice of values as well as the calculation of consequences.

Simon’s quote illustrates an ethical dimension although the quote itself also indicates a mix of rationalities (slipperiness). Mixing rationalities is, however, a pragmatic trait in discussions on organizations and the environment. Situations where this is clearly illustrated are when estimating the environmental impact of different environmentally destructive activities, such as with Wynne’s sheep farmers, the Brent Spar-controversy between Shell and Greenpeace (Grolin, 1997; Tsoukas, 1999), and in the construction of a new heat station in Umeå, Sweden (Sandström, 2001a). Worldviews meet and mix, which mean that there are good opportunities for learning. Reflections upon such meetings enable movements. Such meetings are also frequent in organizations’ relations with the environment. Trusting certain experts and expert systems becomes a part of the actors’ worldview. With the high degree of uncertainty displayed in some environmental debates, though, there are several possible perspectives to believe
in. Some choose their side based more on emotions and others more on reason. Some do not choose at all.

One core message conveyed here, for this study to work with, is that actors influenced by particular actions should be involved in the processes. This is not because their potential resistance might be controlled, but because they might contribute with specific knowledge on the matter. They might also make the outcome more lasting. Often, however, one type of reasoning and one type of actor dominate.

**Reason versus emotion - as in the science wars**

Gergen (1999, pp. 52-58) divides the background to the suggested science wars into two epochs. The early one characterized by a social determination of scientific fact (materialism) and the more recent one by the relational emergence of scientific knowledge (post-modernity). Science is here moving from idealism to materialism to a post-modern period with a more relativistic view on knowledge. Hacking (1999, p 62), although critical to the debate as such, argues that the wars are fought between an “irreverent metaphysical and the rage against reason, on one side, and scientific metaphysics, and an Enlightenment faith in reason, on the other”. Latour (1999, p 218) suggests that the wars have their origin in the days of Socrates and Callicles. The Greeks are to blame when they invented both democracy and mathematical demonstration: “We are still struggling, in our “mad cow times,” with this same quandary, how to have a science and a democracy together” (Latour, 1999, p 218). From Latour's discussion the science wars are not a modern phenomenon, but a continuing process that have been around for a while. I, for one, feel that the wars are real as they reappear in environmental management writings as well as in media-covered environmental debates between political parties, firms, governments and NGOs. It was also evident in the debate between TNS and its critics.

Burrell & Morgan (1979) discuss what they consider the extremes in their field. Their version of the science wars is labeled the order-conflict debate and according to the authors it is long before finished. They also list two major perspectives in their process of revisiting the debate: the sociology of regulation and the sociology of radical change. Through this divide they are separating those who argue for change in current structures (critics) from those with a more regular approach (conservatists). Such a divide is also a general characteristic of the science wars, as well as of the environmental management debate. Such a divide is also on occasion referred to a split between “hard” (natural) and “soft” (social) science. Look, for instance, at the systemconditions again: three natural conditions and one human/social condition. Of course, it is not as simple, but there is a hot spot here as the natural sciences speak for nonhumans while social sciences deal with social processes. This also provides this study with an inherent dynamics as it touches on the relations organizations have with the environment.
It has also been suggested that the view on the environment, which has dominated corporate and public policy for a couple of centuries now, is rooted in an Enlightenment-inspired belief in scientific metaphysics and its progress. The hard sciences’ monopoly on progress and truth has therefore through time been exposed to criticism from social scientists. Critics have pleaded for more relativism and subjectivity, but promoters of hard science are also found in this group. Scientific facts used by environmental advocates to criticize infrastructure projects, such as the Öresund-bridge between Sweden and Denmark or the railway-tunnel Hallandsåsen (c.f. Danielsson & Holmberg, 2002), are, though, often met with skepticism. The advocates of the bridge and the tunnel question the certainty in their claims and with a low priority assigned to the cautionary principle by the project owners, the project usually carries on. When it comes to assumptions on economic growth and profit maximization, however, conservatives hold on to those as if they were objective entities, or hard scientific facts. In those instances, critics point at these assumptions’ fluidity, claiming that things could be, or are, different. They take turns, it seem, of being absolutists and constructionists. Perhaps they both have a point.

On the fence between the natural and the social

As a philosopher aiming at the science wars from the border between the social and the natural, Latour points at the problem of keeping them apart. Standing on the fence, he argues that: “At the heart of the science wars lies the powerful accusation that those who undermine the objectivity of science and the efficiency of technology are trying to lead us backward into some primitive, barbaric dark age” (Latour, 1999, p 199). From such a perspective, Hacking (1999, p 95) claims that scientists feel deeply hurt, as their research is not taken seriously and as their positions are challenged.

As Hacking also argues, the science wars consist of a lot of unmasking activities and there is an undertone in the critics’ voices, carrying a “we know what you’re up to”. Callon and Latour are admirers of “hard” science, but their work seems to be perceived as threatening its status. Putting Pasteur in a different light (Latour, 1988) and giving scallops actor status (Callon, 1986) might be seen as dethronizing and unmasking efforts. One of their points, however, is that the social and the natural are intertwined, unconditionally bound together, and that we might benefit from treating our actions as such. Merging these sides might even be a way out. Latour (1999, p 14) claims that:

For science studies there is no sense in talking independently of epistemology, ontology, psychology, and politics – not to mention theology. In short: “out there,” “nature”; “in there,” the mind; “down there,” the social; “up there,” God. We do not claim that these spheres are cut off from one another, but rather that they all pertain to the same settlement, a settlement that can be replaced by several alternative ones.
Together with writings by a range of international scholars, Callon and Latour's works have been framed under the label *actor-network theory* (ANT). It has been suggested that it might present the *genre* (as in a style or category of literature) of organization studies with an opportunity of renewal (Calás & Smircich, 1999; Czarniawska, 1999). Several aspects of ANT seemed to have captured the minds of scholars in this genre, for instance: power as constructed in enrollment processes; the methodology of following the actors; describing change processes as translations rather than as diffusions; and the non-dualistic view on nature and society. It is the latter aspect that is of key interest here as it points at the neglect of the environment. Several Scandinavian environmental management studies have also used the ANT terminology (c.f. Bergström & Dobers, 2000; Boons & Strannegård, 2000; Catasus, 2000; Fussel & Georg, 2000; Terrvik, 2001), but few have really embraced the neglect of nature. They have rather focused on translation and power.

From an ANT perspective there are no divisions between humans and nonhumans. Divisions are rather understood as outcomes (Law, 1999, p. 3). There are several examples of this. Latour (1999, p 179) discusses the debate on the legal right to carry guns and whether guns kill people or people kill people. His contribution to the debate is that: "You are different with a gun in your hand; the gun is different with you holding it. You are another subject because you hold the gun; the gun is another object because it has entered into a relationship with you". Gabriel (2000, p. 154), focusing on stories told in organizations, shares one of his reflections: "the computer was treated as a 'living being', whose strange and unpredictable behaviour puzzles, amuses, threatens, and dismays". The computer, he argues, "becomes anthropomorphically a 'character' in the plot, fully attributed with agency" (Gabriel, 2000, p 154). The nonhumans, that is, the gun and the computer in these examples, and the humans are not objects and subjects. They are what come together to form a network, or a story. Hodder (1998, p 114) even goes as far as claiming that artifacts are active, that they transform materially, socially and ideologically.

History, however, shows our inertia when it comes to accepting alternative perspectives. The shifts in dominating perspective as Gergen (1999) and Burrell & Morgan (1979) discuss stretch over centuries. As a scholar working with fairly long-term cycles, Schumpeter (1914/1971, p 63) made the point clear: "The history of science is one great confirmation of the fact that we find it exceedingly difficult to adopt a new scientific point of view or method". Kuhn (1970) followed this line of thought in his discussions on paradigm shifts, but my overall point here is not that we need a paradigm shift in a Kuhnian sense. It is rather that we might benefit from a society where alternative worldviews have the possibility to co-exist (c.f. Söderbaum, 2000). At the time, the Enlightenment faith in reason and the materialistic focus limits the space for alternatives to maneuver, particularly within the environmental management field. As indicated previously, some argue that we are leaving the materialistic worldview in favor of
a more postmodern version. One issue is what this suggested transformation is about and how it is framed.

**Modernism and postmodernisms**

What has been recognized as the modern project has come to circle around the grand narrative. At the core of this narrative lie a particular belief in neoclassical assumptions on progress through economic growth and a faith in technological development. There is a strong trust in the ability of the human mind. As our knowledge about the world increases so does our ability to control it. Through this lens we also strive to foresee and control organizational actions, which sometimes are manifested in universal models of organizational designs. The knowledge is representative and prescriptive. This narrative also promotes a dualistic ontology in which the environment is ours to master. It is a pantry of resources to be used in advancing our positions (c.f. Beck, 1992; Costanza et al, 1997). Such a view has a romantic touch as the environment is perceived as an endless prairie, explored in the name of progress. It was in this context that Boulding (1968) suggested that we are behaving like “cowboys in a spaceship” (see also Korten, 1995).

Following the modern traits, reality is out-there for us to discover. The epistemological platform is constituted by positivism and empiricism with a particular faith in hard science. Knowledge, and not only that produced in established academic institutions, but also knowledge constructed in corporate R&D processes, has after all given us technological innovations that have increased our (Western nations) standard of living immensely. At least from a materialist’s point of view. Our body of knowledge is also under continuous growth. It is perceived as a pile to build on. There is thereby a particular linear rationality built into the narrative to handle the complexity and uncertainty of modern transformations. Actors are perceived as driven by fairly simple motives and firms do not differ, but are treated as black boxes.

This has sparked a reaction from a wide range of actors. Critics of the grand narrative have, in the literature, often been related to the concept of postmodernism. Parker (1992) distinguishes between a postmodern theoretical perspective and a post-modern historical period. He argues that there are two main trends from which postmodernism surfaced and made a strong case in organization studies. One is the development in literary criticism represented by European writers on philosophy and culture. Parker (1992) explains that if our culture is perceived as changing, our organizations must also be under transition. The other trend is post-Fordism, which originates from a growing concern with making organizations flexible. Fordism, drawing on the methods of late Henry Ford, and Taylorism for that matter, drawing on the work of late Frederick Taylor, are supposed to be associated with large-scale, efficient, standardized and mass-producing factories. These factory-solutions started to diffuse at the outset of the industrial age, which is also recognized as the start of the modern welfare
project. Post-Fordism means a search in the opposite direction, towards
decentralized, loosely coupled, service oriented and flexible organizational forms.

These two trends, culture and flexibility, as singled out by Parker (1992),
signal a new social movement. It takes us from the modern to the postmodern.
But Parker (1992, p 9) encourages us to distinguish between two postmodernisms, where his first use of the term indicates a new time-period, post-modernity (note the hyphen):

The ground here is epistemologically fairly stable and involves a search for features
of the external world that confirms the hypothesis that our society is moving into a
different epoch. It is important to note that this is an ontology which assumes some
kind of realist epistemology. The world is out there and we simply need to find the
right way of describing it.

In corporate environmental management writings, for instance, hints of this type
of post-modernism are found in strivings for the sustainable corporation (c.f.
Hart, 1995; Shrivastava, 1995). Students of organizations have to collect data
about a change in organizational design. The post-modernistic period could
therefore be interpreted as a change taking place within the grand narrative as
new, although a bit more flexible, universal solutions are searched for (Murdoch,
1995). The critique has been integrated, but without changing the discourse
(Parker, 1992). The difference lies in a society that has become a bit more
complex, but we are still stuck with a basically modernistic worldview. Several
scholars focusing on organizations and the environment are critical to such
developments (c.f. Korten, 1995; Peattie, 1995; Welford, 1995; Hanson, 1996;

It could be argued that at the time, the modern project, albeit with new
instruments, is gaining further ground. It is alive through the existence of
Fordism and Taylorism in modern firms. It is alive through the election of
political and corporate hybrids, such as President George W Bush and Prime
Minister Silvio Berlusconi, as well as through the fact that industrial production
and consumption in general are growing. Economies of scale, usually privately
owned and managed, move their production facilities to nations where salaries
are cheaper and raw materials are available at “good” prices (c.f. Klein, 2000;
Wokutch, 2001). Large multinational corporations become larger multinational
corporations as they merge with one another (c.f Asheim & Dunford, 1997;
Gladwin, 1998; Sandström, 1999a). There are traces of communal erosion as
individualism is spread (Beck, 2000a, 2000b) and relations between individuals
are becoming even more instrumental (Gergen, 1999, pp. 17-18). There is a sense
of a loosened spirit, a neglect of relationships and trust, and perhaps a need for a
more spiritual or Buddhist path (Schumacher, 1973/1988; Welford, 2000).

From such a perspective, there are future dilemmas ahead as the so-called
developed world aims at developing underdeveloped countries based on the same
assumptions that got us our high materialistic standard. However, it is also
possible to turn these arguments around, claiming that it is the grand narrative
that will save the day. We (North) must help developing countries (South) through exporting our high-technological solutions (Hart, 1995) and its accompanying set of assumptions. This is accomplished through mega-mergers and through electing politicians funded by corporate money willing to create a more generous corporate milieu. This line of argument, although simplified, dominates writings on how organizations ought to approach future developments (more on this in chapter three). The faith in transferring solutions developed in the North to the South was also the main theme for the Greening of Industry Network's conference 2001 in Bangkok. It was the first time the network met in Asia, marking the path for the future.

In meeting what might be referred to as post-modern developments, organizations equip for new contingencies. Society's progress stumbles into environmental destruction and deals with it through new technology and new designs. Many post-Fordist solutions are, however, situated within the grand narrative (c.f. Murdoch, 1995; Hanseth & Braa, 2000). Although we can observe the development of different organizational forms where decentralization and flexibility lead to a "projectification" of the business community (Ekstedt et al., 1999), these forms are nevertheless managed by the tight managerial control characterizing traditional factory-solutions. Post-modern, as a concept, also implies progress, from modern to post-modern. Changes in society suggested by post-modern advocates, if accepted, are therefore not alterations that students of organizations cannot handle with existing theories. What the changes suggest is that scholars have new objects to study. Tsoukas (1992, p 643) argues that this is simply "a new version of good, old contingency theory".

Parker (1992) subsequently continues with his second postmodernism, the one without a hyphen. This postmodernism is focused on epistemology: "It is an approach to the question 'how can we know the world?'" (Parker, 1992, p 9). A postmodernist disturbs things that are taken for granted. She or he questions the relation the researcher has with its subject and aims at unmasking myths and things being taken for granted. Focus is on how we use and develop language and discourse. Parker (1992) even turns on his own text as it is leaning on a traditional text structure and a shared discourse. Such a structure and discourse are also what confront junior scholars on the way towards becoming senior ones. Scholarship tends to be guarded by what senior scholars have recognized as central achievements, that is, the topic's literary infrastructure, and there is a pressure to follow the same writing structure and conceptual base judged as appropriate for a scientific study. This study is definitely influenced by this. Basically, though, had Parker been a postmodernist according to his own definition, his text would have been more disruptive. Had I been a "true" postmodernist, you would not read about the grand narrative.

Some of the consequences of adopting a postmodern perspective are that we ought to acknowledge the limitations of our projects (Parker, 1992). Truth is not what there is, but rather a form of discourse. No opinion or explanation is better or truer than any other effort. Instead, there is a diversity of interpretations
of society and organizations, leading to new perspectives and a continuous disruption is in process. The use of language and the writing of texts are not once-and-for-all truths, but actions that lead to new opportunities. The aim is to disrupt what is considered normal and bring forward the peculiar. Instead of trying to answer problems, we should rather be turning answers into problems (Parker, 1992). Parker also stresses a focus on interests and values, which provides for different interpretations and rationalities. The grand narrative, he argues, has limited the capacity for organizations to speak different languages. This has led to increasing solidity and decreasing ability to speak with actors outside the local discourse. He therefore further emphasizes that the postmodern organization has to house a capacity to speak new languages and to use new rationalities. It is a prerequisite. As environmental issues are considered emotional, cross-disciplinary, complex and for some entirely new (c.f. Fineman, 1996; Egri & Pinfield, 1999), a multi-lingual capacity might be a key issue for organizational greening.

Parker's (1992) account of postmodernism is appealing. It breathes pluralism, undermines the one-right-way, carries a sense of “rebel yell” and points at the limits of our rationality. It also emphasizes the actor in the process and there seems to be a growth in such studies in the organization genre. Examples of this development are the interdisciplinary journal of organization, theory and society, *Organisation*, and the new postmodern journal, *TAMARA*. The latter explicitly aims at voicing the oppressed.

The postmodern contributions are not entirely new, though, and they have their downsides too (c.f. Beck, 1992; Tsoukas, 1992; Parker, 1995; Marcus, 1998). The main critiques tend to center around its de-constructive aim (Alvesson & Sköldberg, 1994, pp. 257-258). Parker (1995) even argues that it is a dangerous endeavor as it might be a way to avoid responsibility for the implications of our analysis. He also suggests that you do not need to be postmodern to be humble about your standpoints or what you claim to be real. Tsoukas (1992, pp. 646-647) turns his attention to history and argues that de-construction, or postmodern interrogation, is a natural ingredient in Western cultural tradition:

> What is particularly novel in the Greco-Western view of the world is not the search for a fixed truth, but the positing of truth in the continuous movement of doing away with the closure of meaning. In other words, truth exists only in the interminable interrogation of currently accepted truths.

Fixed truth is from such a perspective a moving phenomenon and not a steady state. Tsoukas' “closure of meaning” could also be compared to what Parker (1995, p 557) refers to as “a temporary consensus on what is important in a particular situation at a particular time”. This view is also what counts as truth in this study, albeit with an emphasis on truth as becoming. Even though some things are taken for granted, they are nevertheless moving. Adopting an extremely fluid position on truth would, however, mean that I fall into the trap that many critics of postmodernism have identified. In other words, I would be
stuck in the deconstructive aspects of postmodernism, not suggesting ways out. The question of what then lingers over the postmodernist. What is the point of studying (and managing) organizations if it constantly aims at deconstruction? This study is not a postmodern or a post-modern study as "championing postmodernism while making the claim that one is practicing it runs into serious contradictions" (Marcus, 1998, p 388). Arguing that a grand narrative exists is actually modernistic. This study, though, still moves towards a kind of postmodernism, but one that differs from Parker’s a bit.

Institutions and identity construction

Tsoukas (1992) argues that what is missing in postmodern approaches is the recognition, as articulated by Berger & Luckmann (1966), of institutions that routinize and habitualize human activity. He claims that:

a ‘soft’ version of postmodernism which recognizes the ontological existence of the social world, however precarious and fluid the latter may be, has a lot to contribute to our understanding of organizations. By challenging the cognitive monopoly of an allegedly omniscient subject-centred rationality, by problematizing currently dominant orthodoxies and by bringing into light new processes of which we are unaware, a ‘soft’ version of postmodernism is not incompatible with reflexive rationalism – interminable interrogation is their common theme. (Tsoukas, 1992, p 648)

A hard version, on the other hand, undermines institutions and their role in constructing individual and organizational identities. In many accounts, there is therefore an anxiety of falling into postmodernism. Tsoukas (1992, 2000) argues that we should balance between patterns and indetermination in social life, or as he puts it, between chaos and cosmos. Parker (1995, p 557) makes us balance between the abyss of relativism and the silence of the archive; Barley & Tolbert (1997), following Giddens, between agency and structure; and Latour (1999, p 22) between cosmos and unruly shambles. It is acknowledged here that reality, as well as our identities, are constructed in the tensions between the pairs cited. We take things for granted, but we also self-reflect on our own and on others’ actions. The pressure to reflect upon our lives and to create our own biography, it is argued, is also a sign of our time (Giddens, 1991/1997; Beck, 1992; Beck et al, 1994). Our lives are reflexive projects. Matters of balancing between institutions and the self are also clearly exposed in identity construction processes.

From a cultural perspective, Hannerz (1992) mentions three aspects of identity construction. The first is cultural dumping. It is a standardization process referred to by Hannerz as modernization and Americanization (Coca-Colaization, Disneyworld - it is a small world after all, McDonaldization). The second is a reinforcement of group identities as they are confronted by global cultural flows. The third is diversification, that is, a reinforcement of the local identities as they are
confronted by global cultural flows. Hannerz (1992) suggests that the grand narrative, in the disguise of the market, pushes the first way, cultural dumping. There are, however, forces working both ways. About the market, Hannerz (1992, p 238) states: "One may suspect that there is a core here to which the market framework cannot reach, not even in the longer term, a core of culture which is not itself easily commoditized and to which the commodities of the market are not altogether relevant." In other words, the local is not so easily accessible. Still, there are tensions in these processes, tensions in which identities are constructed.

For the individual then, as well as for organizations as this study concerns, the identity construction process, balancing between chaos and cosmos, becomes a moving project as traditions, space and time are transformed. Through a postmodern lens, "identity is in flux, in a permanent state of becoming" (Thomas & Linstead, 2002, p 75). Lindgren & Wåhlin (2001, p 359) claim that "identity construction can also be seen as the continuous handling of the tensions caused by adapting to the norms of the social context while also maintaining an individual uniqueness vis-à-vis this context" (see also Berger & Luckmann, 1966). These authors focus on the individual, however, and as individuals also have multiple identities, this adds to the complexity of identity in organizations. Nkomo & Cox (1999) refer to these identities as intersecting to create an amalgamated identity.

For organizations then, organizational identities are constructed in these intersections, or tensions, between what Giddens (1991/1997) refers to as processes of individual and institutional reflexivity. Assigning an organization an identity (or even the status of an actor) might, though, be reifying. Organizations are, as stated above, outcomes of action. Reflecting upon this does not only develop into a trap for the acclaimed constructionist, but it also highlights a linguistic trap. The point here, however, is that although individuals are acting in the organization's greening process, they are also united under the label of, for instance, MGV, Baseco, Duni or USBE. As members of the organization, we have to handle the organization's identity, our professional identity, as well as our ideas of a personal self. These aspects do not always fit with each other. Working for a large and established firm, for instance, would most likely mean a particular institutional pressure on how to act. In the case of greening, this mix of pressures provides interesting situations. An R&D manager, amazed by new environmental techniques, could be strained by a limited budget and a poor green interest on behalf of top management, not allowing any environmental ventures. Parallel to this, the R&D manager and his or her family might also be members of an environmental NGO, actively working to protect the environment on their leisure time. "Realities" and "truths" are probably different for each of the three aspects of identity construction. The manager still has to approach and make sense of them all (c.f. Watson & Harris, 1999).

Beck (1992) targets the ecological crises and argues that they are leading to increasing reflections on the way we progress society. In this process, institutions
and identities are revised in light of new information. This means reflecting on, for instance, truths taken for granted in the grand narrative. In such a process, many institutions become less out-there as their dependency on action is made more visible. Czarniawska’s (forthcoming) states that institutions are machines that can evoke protests: “While machines were supposed to relieve people from physical work, institutions were supposed to relieve them from mental work”. In light of environmentalism, mental work is required again.

In this study, institutions are there, but they are not out-there. The perspective pleaded for is more active, demanding a more active balancing. It is here, though, that Parker’s account is weak. He more or less neglects ontology (c.f. Chia, 1995). Postmodernisms are more than epistemology and a theoretical perspective. They also house ontology. Chia (1995) differentiates between a weak and a strong ontology. The latter would fit the dividing habits of the modernistic worldview, which is also present in several acclaimed postmodernist accounts (c.f. Hacking, 1999). A weak one is less absolute about an objective reality and more in line with a moving, or a becoming, type of thinking. Such a view does not mean that anything goes. Ethics come in the way. It does mean that there is openness towards alternative constructions of reality as well as identities. Some refer such a view as having the world, as well as the process of identity construction, as socially constructed, a concept framing main aspects of the research philosophy in this study.

Social construction – locals and universals

Linking the ongoing discussion to the outset of the chapter, Burrell & Morgan (1979) summarize their discussion by outlining four sets of assumptions, from ontology to methodology, by developing a matrix covering four paradigms:

<table>
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<tr>
<th>Subjective</th>
<th>Objective</th>
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<tr>
<td>Radical Humanist Paradigm</td>
<td>Radical Structuralist Paradigm</td>
</tr>
<tr>
<td>Interpretive Paradigm</td>
<td>Functionalist Paradigm</td>
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The paradigms are categorized in two dimensions. The first covers the nature of society (radical change or regulation) and whether the scholar thinks society ought to change in incremental steps or in discontinuous leaps. The second
dimension covers the perspective on the nature of science (subjective or objective) and whether the scholar ascribes to actors' own experiences or considers reality as separate from the actors, that is, out-there. According to Burrell & Morgan (1979, p 24): "To be located in a particular paradigm is to view the world in a particular way". As mentioned earlier, though, I stick with the concept of worldview, but paradigm is used on occasions since the authors cited lean on the concept.

Rikhardson & Welford (1997) use the Burrell & Morgan-matrix in their discussion on the construction of corporate environmental management (see also Dobers et al, 2001). In their chapter they claim a social construction perspective and argue that such a perspective is based on a mix of the interpretive and the critical humanist paradigm (Rikhardson & Welford, 1997, p 46). However, social construction is a concept with many faces (c.f. Burr, 1995; Schwandt, 1998; Sandberg, 1999). If we adopt a strict version of it, we would probably not believe in the matrix in the first place, as all perspectives are normative and constructed. In the environmental management literature, another social constructionist view is argued by Wolff (1998), in which he asserts that environmental problems are socially constructed. His approach, however, is not as normative as the one taken by, for instance, Welford (1995; Rikhardson & Welford, 1997).

Social construction is a perspective that opens up opportunities for empowerment of actors. It focuses on collective constructions and one of its strengths "is to reveal how the-taken-for-granted becomes taken for granted" (Czarniawska, forthcoming). To link it to the modern-postmodern discussion, Gergen (1999, p 195) finds, along with Parker (1995) and Hacking (1999), that social constructionism is often perceived as a postmodern project. Hacking (1999, p 3) evens states that the whole science wars debate can be linked to social construction. To say that reality is socially constructed is, however, not a rewarding event. The concept has come to possess a wide range of meanings.

One interpretation is that all we take to be real in this world is socially constructed (c.f. Gergen, 1999). Even the most taken-for-granted natural laws are socially constructed, although, which might be a bit confusing, it does not mean that such laws do not exist. What it suggests is that they are outcomes of social processes, or that reality is created in social interaction. Hacking (1999, p 24) labels such a non-dualistic perspective linguistic idealism. If we want to gather knowledge about reality we have to, from such a view, study interactions and tensions between actors. Knowledge is also “seen not as something that a person has (or does not have), but as something that people do together” (Burr, 1995, p 8). There is a general lean towards a voluntaristic perspective on human nature. As we create our reality, so can we mold and change it too. Gergen (1999, pp. 46-50) lists the emerging contours of a social constructionist perspective (see also Burr, 1995; Sandberg, 1999):

- The terms by which we understand our world and our self are neither required nor demanded by “what there is”. This includes everything of “what is”. Among the examples
Gergen mentions are gravity and the fact that cancer kills. We need to realize that these facts could be otherwise. Again, this does not mean that social constructionists do not believe in gravity. I believe the absolute majority do, but gravity is still constructed.

- **Our modes of description, explanation and/or representation are derived from relationship.**
  Hence, social construction. However, Gergen brings up one caveat in the focus on humans: Relationships are human endeavors. Does social incorporates nonhumans too? The answer is as diffuse as Berger & Luckmann’s (1966) view on the environment. Czarniawska (forthcoming) argues that social could incorporate an ally and a companion as well as a drug or a computer, but it is not apparent how in her study. A constructionist perspective taking nonhumans into account could seek inspiration from ANT. As I see it, ANT is one way out for social constructionists pondering how to deal with the neglect of the environment. Perhaps collective construction would be a more appropriate, as also hinted by Czarniawska (forthcoming).

- **As we describe, explain or otherwise represent, so do we fashion our future.** Traditions that we wish to maintain must be sustained through action. Gergen thereby subscribes to the constructionist perspective as an opportunity to build new futures. There are chances to be poetic activists, as social construction is an invitation for people to construct their worlds.

- **Reflection on our forms of understanding is vital to our future well-being.** In a broad sense, innovation through reflection is a key characteristic of a social construction perspective. Gergen argues that social constructionists attempt to see alternatives and to question traditions. They are social entrepreneurs. This contour also opens the doors to discussions on individual and institutional reflexivity (c.f. Giddens, 1991/1997; Beck et al, 1994).

To contrast Gergen’s view on social construction, some argue that scientific facts should be excluded, as they are independent of our human-to-human interpretations (Hacking, 1999). There is inevitability, which means that sooner or later once the question is popped the answer is inevitable. This might be best exemplified by metaphysics. No matter how we construct reality (human-to-human), there are certain things that are independent of us and thus not suited for a social construction label. This might be exemplified by TNS’ first three systemconditions, nature’s framework. You do not negotiate with the environment. Other “things”, such as ideas or large parts of the fourth systemcondition, are naturally social constructions. They could not be anything else. Making this explicit through using “the social construction of” in titles of academic work is therefore unnecessary. It is a too obvious emphasis. Hacking, targeting studies relying on a social construction perspective making local claims, argues that we need to separate between universal and local claims. Hacking
(1999, p 6) generalizes studies focusing on the social construction of X, where X often is an idea or an assumption (X could be profit maximization, for instance). He holds that:

- X need not have existed, or need not be at all as it is;
- X is quite bad as it is;
- We would be much better off if X were done away with, or at least radically transformed.

Such studies are, from Hacking’s perspective, critical, skeptical and humanist. They have more political than scientific purposes. When we feel like criticizing an idea why not use social construction, as it is a smooth way of undermining the project. The view is naïve, but as Hacking also emphasizes, most social construction studies aim at ideas and not artifacts or metaphysics. They are often very traditional when they are still stuck with hard scientific facts in an out-there reality. This is the case in many writings within corporate environmental management claiming a social constructionist perspective (c.f. Shrivastava, 1995; Rikhardson & Welford, 1997). Hacking (1999, p 49) concludes: “Although social constructionists bask in the sun they call post-modernism, they are really very old-fashioned”. I agree with Hacking on this point.

**Studying the tensions - the task for the constructionist?**

Berger & Luckmann (1966, p 15), on the quest of linking everyday knowledge with scientific knowledge, argue that theory does not stand in for reality and that knowledge creation “must first of all concern itself with what people ‘know’ as ‘reality’ in their everyday, non- or pre-theoretical lives”. There are, though, things we do and believe in without reflection. The authors’ ontological position is therefore a mix of objectivity and subjectivity. Sandberg (1999, p 45) also notes that they are themselves critical of scholars focusing too intensively on either of the two extremes. Berger & Luckmann are subjective when reality is found in the members of society and what they take to be real, regardless of what science argues. They are objective when they, as Hacking (1999, p 25) notes, do not argue that everything is socially constructed. There is therefore still a divide between objects (things, nonhumans) and subjects (humans). They are also objective when they explicitly talk about society being objectivated through subjective meanings. This objectivity, however, is constructed out of human action and could be replaced by new objectivations of new realities. Hence, a voluntaristic perspective:

The individual apprehends himself as being both inside and outside society. This implies that the symmetry between objective and subjective reality is never a static, once-for-all state of affairs. It must always be produced and reproduced in actu. In
other words, the relationship between the individual and the objective social world is like an ongoing balancing act. (Berger & Luckmann, 1966, p 134)

Reality, as well as identities as discussed, must always be produced and reproduced in an ongoing balancing act. These words represent the essence of the type of thinking outlined in this study. The authors' basically agency oriented view is also the construction material and the binding agent used to build the bridge between the individual, the organization and the institutions. There is, however, one aspect of the authors' account that should be addressed, that is, their neglect of the environment. Berger & Luckmann (1966, pp. 180-183) see the biological environment as constraining or as a pre-condition for human existence, although, they argue, human existence also sets limits for the environment. Humans basically make the objective reality, even though there are things out-there which newcomers are brought in line with.

Analyzing writings like this highlights the differences between anti-realists such as Gergen (1999) and realists such as Hacking (1999), but they are not miles apart. Gergen (1999), who might be considered as leaning towards universal social constructionism, actually questions a postmodern no value-definition of social construction. He feels that a constructionist perspective invites us to speak out on issues of the good (hence the title of his book: An invitation to social construction). Thereby he highlights more ethico-political aspects as well. In her account of social construction, Czarniawska (forthcoming) argues: “As I see it, constructionism in organization studies needs neither to be paranoid nor apologetic. It is certainly “unmasking”, but not in the sense of revealing nasty plots, but rather in the sense of revealing what has been forgotten or not paid attention to.”

All perspectives include assumptions and presumptions on what is real and what is good, but social construction leaves the door open for them to exist (Hacking, 1999; Gergen, 1999; Czarniawska, forthcoming). Social construction has, perhaps therefore also been linked to critical theory (Norén, 1995, p 175; Guba & Lincoln, 1998), but there are different views of how to be critical. A constructionist perspective might lead to critical reflections, but in order to study how reality is created, an open mind is important. This does not mean that the presence of values is unwanted. Values will always be there. Therefore it might be more appropriate to bring the reflecting scholar explicitly into the equation as she or he conducts her or his study (Norén, 1995, p 200). Also, being critical is not something a scholar should have to state in a study. To critically reflect on our contemporary society is the social scientist’s most important task.
Keeping the dialogue alive

Figure 2.3: One perspective among many others

The figure above has one main point. Recalling my colleague at the outset of the chapter, the better understanding you want, the more you have to keep up with the other positions in the circle. He jumped at the dissatisfied ones because he knew they were occupying a different position then he was. The figure illustrates that my perspective is not the universally right one. If I want to find out the "truth" about the object under study, a stone in this case perhaps, although you are free to place whatever you want in the circle, I need to ask every actor in the circle. This is of course impossible, which means that we can never come full circle in whatever study we attempt to do. We are bound to incompleteness. Still, there are those of us who claim universality. Following the circle metaphor further, there are also opportunities to reflect upon who are heard and not. We can reflect upon how polyvocal or multi-voiced we are. What is left out? Who is represented?

The circle is also a basic metaphor for Native Americans' understanding of the universe. It is referred to as the Medicine Wheel and it is the very way of life (Storm, 1972). Storm gives a thorough introduction to the value of pre-understanding, experiences, self-reflexivity, pluralism, humbleness and nonhuman co-constructors. Despite being a perspective that claims that all "things of the Universe Wheel have spirit and life, including the rivers, rocks, earth, sky, plants and animals" (Storm, 1972, p 5), it is only humans that are determiners. Storm (1972, p 4) continues:

If the things I were to place within our circle should be an abstraction, such as an idea, a feeling, or a philosophy, our perceptions of it would then be even more complicated than if the object had been a tangible thing. And further, the number of different perceptions of it would become greater and greater as more and more people were added to our circle. The perception of any object, either tangible or abstract, is ultimately made a thousand times more complicated whenever it is viewed within the circle of an entire People as a whole.

Latour (1993, p 38) also reminds us: "Native Americans were not mistaken when they accused the Whites of having forked tongues". Latour (1999, p 66), however, makes the metaphor more difficult when arguing that it is not possible
to stand in a standpoint (to occupy a place in the circle). This, as you are dependent on other actors (including nonhumans) to see from your standpoint. Also, a particular standpoint often dominates the others. One interpretation of the stone often comes out as more powerful, as a closure of meaning or a temporary truth. This does not mean that all actors have the possibility to construct their realities, or their identities, as it “would require espousing voluntarism” and “an extraordinary simplification of the social” (Czarniawska, forthcoming).

Often, certain actors have privileged positions to construct their and others reality (c.f. Stanfield, 1998). All actors are, however, still part in constructing reality, whether they are oppressed or privileged. Therefore, as reality is constructed, alternative realities are possible. Alternatives are, though, more in the hands of privileged and all too often their views differ from the wishes of the unprivileged. This study, for instance, is Western-centric and as I claim that the first world’s material wealth is based on the third world’s material poverty, I am speaking on behalf of “the other”. Perhaps they do not want me to speak for them, because when I do so I am silencing them. Perhaps I am also enforcing the identity of them as “the other” when I am doing so. My effort therefore reveals “far more about ourselves, and far more about the structures of Othering” (Fine, 1998, p 135). I am stuck in a crisis of representation. I may, however, be keeping a dialogue alive.

To summarize this chapter, even though the discussion never will arrive at port, I borrow words from Janssens & Steyaert (1999, p 135), as they argue that the point is to make sure that voices meet to create dialogues: “A point of view is never absolute but gains its particular qualities in relation to other points of view. A third party always keeps the dialogue visible in their interventions.”
3 Environmental issues in organization studies

In this chapter, the theoretical framework is outlined. It is predominantly built on management and organization studies on greening. The discussion shows that organization studies have a history in environmental matters. A lot of it, however, is technocentric in orientation and an alternative approach is suggested instead.

Introduction

I have on two occasions conducted theoretical reviews in the environmental management area (Sandström, 1999b; 2001b). The first one aimed at Swedish environmental management writings. Focus was on whether or not the articles advocated change and on why a particular perspective was argued. Part of the results was summarized in a (typical) categorization of three perspectives (engineers, managers and critics), ranging from incremental to radical change. The second paper critically reviewed three articles (Hart, 1995; Shrivastava, 1995; Wolff, 1998). In the analysis, a simple model consisting of three parts: the actor, the worldview and the practical part, was developed. This basic model is used in this study as well. As touched upon in the previous chapter, together the three parts make up an approach, evincing that they are not separate entities, but co-creators of approaches.

In the model used here, the worldview level deals with ontology, with fundamental questions about the nature of nature, society and organization. On this level, there is also an epistemological interest, a focus on the construction of knowledge and the trust in science and experts. Authors, in their writings, argue in favor of or against existing theories and certain types of knowledge. Some call for change on all levels, whereas others lean on established mainstream theories and methods. Some see organizations from a functionalist perspective, as close systems. Others advocate a more organic and open system view. On a more practical level, concepts and systems used when framing organizational processes indicate what type of approaches that are constructed. It is also on this level that concrete corporate and research strategies, and future agendas are discussed. The particular organizational actors are also targets in the analysis. The matter is basically who they are, that is, how they are constructing their identities in the tensions between expectations on greening out-there and desires in-here. The model is presented below:
The model, however, needs input. It needs articles, books and research papers, and the environmental management field is encompassing. When retrospectively looking at my selections I sometimes perceive myself as having hiked in the forest. You see a nice flower there and an odd tree there. When tied together, you have a quite peculiar bouquet. This points at an irrational element in deciding what to read and not. One aspect, though, which might be a sign of a non-hiking and even rational process, as well as perhaps theoretical saturation, was that I finally found myself with different piles of articles on my desk. Towards the end, those piles did not grow in number, but rather in height. Similarities and differences had become, at least through a gut feeling, clear. After spending more time with the piles the gut feeling was accompanied by more explicit basis for categorizing.

Still, the abundance of academic journals on the topic was frustrating. Follow me: Business Strategy and the Environment; Eco-Management and Auditing; Environment, Development and Sustainability; Greener Management International; International Journal of Corporate Sustainability: Corporate Environmental Strategy; International Journal of Environment & Pollution; International Journal of Life Cycle Assessment; Journal of Cleaner Production; Journal of Corporate Citizenship; Journal of Environment & Development; Journal of Environmental Management; Journal of Industrial Ecology; Journal of Sustainable Product Design; Organization & Environment; and more. Leaning towards neighboring academic fields, which do provide new angles and opportunities for renewal on our field, there were even more journals (Ecological Economics, Environmental Values, Environmental Ethics etc.). I have not scanned them all, but I have got the hang of some major ideas and some interesting narratives.

To set things a bit in perspective, a historical account introduces this discussion. The account is a post-war flashback predominantly based on two sources. One is an encompassing study by Hoffman (1997), where he targets environmental issues in the US oil and chemical industries, two heavily exposed...
industries and one heavily exposed nation in the environmental debate. His analysis is built on three pillars – the organizational field, dominant institutions, and organizational structure and culture. The second source is research conducted by Jamison (1996; Jamison et al, 1990), which is more situated in a European context and more focused on NGOs. Both Hoffman (1997, pp. 12-13) and Jamison (1996, p 227) structure their accounts in historical phases, characterized by different key developments in the making of environmentalism. These phases are not absolute in any sense, but rather two suggestions of how we could view the developments so far. This account is also complemented with links to the Swedish context, which was where this study was conducted.

Post-war corporate environmentalism

It was perhaps during the post-World War II and the questioning of the environmental consequences of the rapid industrial development that environmental issues entered the corporate frame. Environmental destruction originating from, for instance, large-scale industrial projects, nuclear power and urbanization, made environmental concern a global topic. Jamison (1996, p 228) ascribes “the development of a ‘mass culture’ of television and popular science” an important role in bringing the environment into our homes, “and with it, the need to ‘save nature’ from further degradation reached a mass audience”. He labels the late 1940s to the late 1960s a period of awakening. Hoffman argues a similar pattern when he asserts that environmental issues became issues for many organizations on an international scene in the 1960s, especially for those operating in Westernized societies. Firms, however, felt little if any pressure from external actors, such as environmental NGOs and governments. The corporate actors more or less decided what to do and when to do it. Hoffman labels the 1960s a period of industrial environmentalism.

In Sweden, some key environmental institutions were established during this period, such as the State Nature Protection Council (1963) and a new Nature Protection Law (1953). They indicate an early environmental movement in the making of environmentalism in Sweden (Jamison et al, 1990), but these institutions were founded in a time when focus was on strict scientific perspectives on effects of pollution. The legislative institutions therefore came to mirror an end-of-pipe approach. In the business community, this meant that attention was directed to latter parts of the production processes. Pollution was mended through placing “filters on the chimneys”. In the 1960s, Sweden manifested what later became a scientific and technocratic heritage. In a comparison between Sweden, Denmark and the Netherlands, Jamison et al (1990, p 188) state:

In Sweden, a more technocratic environmentalism was apparent right from the beginning. The emergent concern with environmental pollution, which was expressed in each country during the period of awakening in the 1960s, was
assimilated into the Swedish political culture as for the most part technical problems of management and engineering, as an unplanned and unwanted, yet unnecessary, side-effect of the industrial state.

Sweden was also in the middle of its post-World War II "golden quarter" (approximately between 1950-1975). We imported labor from the south of Europe and our already large industries were expanding. Industry in general was also prospering and a frequently quoted sign of what seemed to have been the common attitude in industry was the way it responded to Rachel Carson's *Silent Spring* (1962). Her publication did not reveal any ideas unknown to science interested readers, but the way patterns of pollution were described, especially pollution into the water systems, was impeccable. Industry perceived the book as a threat (c.f. Gore, 1992; Hutchinson & Hutchinson, 1997) and the reason behind its success (it is regarded as one of the milestones in environmental history) was probably the timing of the book. It was translated into two dozens languages and stirred up industries, environmental groups and governments around the world through its critical stance towards the patterns of global development:

This is an era of specialists, each of whom sees his own problem and is unaware of or intolerant of the larger frame into which it fits. It is also an era dominated by industry, in which the right to make a dollar at whatever cost is seldom challenged. When the public protests, confronted with some obvious evidence of damaging results of pesticide applications, it is fed little tranquilizing pills of half truth. (Carson, 1962, p 13)

The book's impact is a critical event. During the late 1960s, other events sparking a growing environmental concern were the establishment of the World Wildlife Fund in 1961 and the first Earth Day in 1970. Jamison then continues with his second phase, the age of ecology, or the organization phase. Following the student revolutions, this phase was characterized by the creation of institutions: "It was from about 1968 to 1973 that almost every industrialised country established an agency or governmental department to deal with environmental protection, and at the same time environmental research, education, and even technological development were organised in new institutional forms" (Jamison, 1996, p 229). According to Jamison, the environmental debate became an environmental movement during the organization phase. This was mainly due to a shift in the environmentalists' stance. Instead of a negative tone of doom and destruction, they to some extent united around "a positive programme of social ecology" (Jamison, 1996, p 229).

In Hoffman's more corporate oriented exposé, his next period, *regulatory environmentalism*, stretch from 1970 to 1982. During this phase, focus shifted from industry to government. Governments strived to impose legislation on industry in order to deal with environmental problems: "The catchword for the early 1970s was 'technology forcing' - new federal rules would force industry to use
new pollution-controlling technology, and as new plants replaced old, the problem of pollution would disappear" (Hoffman, 1997, p 66). Legislation, Hoffman reminds us, is not something that pops up from nothing. These developments were partly consequences of an increasing pressure from growing public concern, as noted in Jamison's age of ecology. The approach adapted taken by legislators, however, was in Hoffman’s story align with industry’s own approach. The reaction from industry was therefore at first positive. Legislation was perceived as good help in defining the expectations on industry when dealing with pollution, wastewater and solid waste. By the late 1970s the reactions were different. Legislation was perceived as suffocating the space within which industry could move.

Other actors were also making a strong case influencing the business context, for instance, the report *The Limits of Growth* (Meadows et al, 1972). The report targeted the global impact of industrial development on the environment. It was an awakening prediction of the scarcity of our resources and critically questioned the quest for economic growth. The same year the United Nations (UN) held a conference on Economic Development and the Environment in Stockholm, which resulted in the establishment of the UN Environment Program (UNEP). Another critical event during this period was the explosion at a chemical plant in Seveso, Italy, in 1976. The same year the first eco-label, the Blue Angel Award, was introduced in Germany with the purpose of motivating firms to produce environmentally friendly products. Within the business community, firms started to create environmental departments. Although the departments were often placed outside the core organization, it was a development inscribing the importance of environmental issues in the organizational structure (Hutchinson & Hutchinson, 1997).

Jamison (1996, p 230) singles out the period from around the first oil crisis to 1980 as a specific phase in the making of environmentalism: “We can think of this period in two ways: on the one hand, it was a time when environmentalism had a major impact on national political agendas, especially in relation to energy policy, and on the other, it was a time when the environmental organisations turned into full-scale bureaucracies”. Large firms also started to explore win-win situations in the relations between economic growth and ecological adaptation. From this phase on, Jamison also stresses the growing internationalization of environmentalism. Environmental problems became global, environmentalists became professional lobbyists and a high-technology culture was spreading. Hoffman (1997) moves a bit slower and labels the period between 1982 to 1988 environmentalism as social responsibility:

With this clear demonstration of the strength of the environmental movement in the country [the US], both the chemical and oil industries began to adopt a more cooperative posture. Recognizing that this was an issue that would proceed either with or without industry involvement, they had no choice but to accept it. The dominant theme was now that it was a corporation’s social responsibility to protect
Environmental concern became institutionalized. One part of this growing institution, as well as one way of demonstrating the firm's social responsibility, was the development of Environmental Management Systems (EMS). The first EMS, the Responsible Care program, a voluntary program established in the Canadian chemical industry, was launched during this period. It spread to, for instance, the UK in 1989 and was also developed in order to be compatible to the international quality standard ISO 9000 (Welford & Gouldson, 1993, pp. 84-85).

Among the critical events in the early and mid-1980s were the Bhopal accident in India 1984, the nuclear accident in Chernobyl in 1986 and the UN report *Our Common Future* by the Brundtland Commission (WCED, 1987). During this period, environmental problems became multidimensional issues and partly through Chernobyl they also came to represent the megarisk-potential of our industrial activities (c.f. Beck, 1992, first published in the year of Chernobyl). Some firms began integrating the earlier environmental department into the core of the organizations and they adopted a more cooperative stance in their environmental work. What earlier could be negotiated behind closed doors were increasingly becoming public issues on a public arena. Hoffman suggests, based on these developments, that we entered a period of *stratège* (1988-1993). Some firms were considered proactive and pressure on industry was starting to arise from colleagues, competitors and employees. These actors, it seemed, represented a new generation:

> How society views the environmental issue today is far different than how society viewed it just ten years ago. The Conference Board notes that the drivers of environmental responsibility today come from within the corporation, 'as younger managers and their families begin making demands on top management that previous generations would never have dared to do.' (Hoffman, 1997, p 139)

Industry engaged in strategic alliances with NGOs (c.f. Ottman, 1993; Wasik, 1996; Stafford et al, 2000) and the EMS trend had taken off. The Responsible Care program might have served as a role model in the process, but it was not until the British Standard Institution (BSI) launched its EMS version BS7750 in 1992 that the trend manifested itself among organizations (Welford & Gouldson, 1993, pp. 84-90). The standard was based on BSI's existing quality standard BS 5750 and according to Welford & Gouldson (1993, p 89) it was a significant milestone: "As the standard is increasingly adopted it will cease to be part of a company's strategy for creating a 'competitive edge' and will become a minimum standard for good practice".

Some critical events during this period were the Montreal Protocol regarding the ozone hole in 1987; the Exxon Valdez oil spill outside the southern coast of Alaska in 1989; the post-Montreal calls to reduce the greenhouse effect;
and especially the Agenda 21 conference in Rio, Brazil, in 1992. As perspectives on environmental problems shifted from local to global and from tangible to diffuse, such as with the ozone layer, nuclear waste and dioxins, firms also found it difficult being perceived as credible actors in environmental debates. The debates were filled with ideas about good and bad, right and wrong, and scientific uncertainty. Ottman (1993) quotes several polls from the early 1990s about trusting different sources of information on organizations and the environment. One poll aimed at the general public where about 5 percent believed most of the information they received from industry and around 32 percent believed some of its information (Ottman 1993, p 56). Environmental journalists were also asked whether they trusted the information given by corporate officials. On the statement “I generally trust information I get from corporate officials”, more than 65 percent stated “false” (Ottman 1993, p 95).

There is a tentative explanation to this uncertainty, though. Jamison (1996, p 236) claims that environmental problems were “framed - or constructed - in such a way as to lend themselves to mass media advertisement”, which “means simplification, exaggeration and, perhaps more to the point, linear causality”. He also singles out the emphasis on putting trust in experts in the debate, whether they represent ABB or Greenpeace. The conclusion, Jamison (1996, p 236) asserts, is that “the environmentalist message has been significantly transformed from the holism that was so characteristic of the early 1970s”.

In 1993, the European Union (EU) developed a draft of an “Eco Management and Audit Scheme” (EMAS) in response to a growing interest in organizational greening. The scheme was voluntary and constituted a way for firms to work with environmental issues. In January 1995, EMAS took effect throughout the EU, but it did not take long before industry’s own standardization body responded with their own system, the ISO 14000 family. In autumn 1995 the first drafts were presented and so far, firms have shown a particular interest in the ISO standard. Following the development in terms of number of EMS registrations/certifications per nation, it resembles, in diagram form, a huge backwash building up. When analyzing the wave, it is clear that ISO has outrun EMAS (ISO World, 2002). In Sweden, firms were early adopters of EMSs and Swedish industry has throughout the process been among the top nations regarding the number of EMAS registrations and ISO 14001 certifications (ISO World, 2002; c.f. Chadwick & Garrod, 1996, on Swedish industry’s pro-activeness).

Sweden also initiated an encompassing greening process in the public sector. One early sign was the first Swedish eco-municipality project, established in Övertorneå, a small community in the northern parts of Sweden, in 1989 (Lahti, 1998a). Before the end of 1996 all 289 Swedish municipalities had implemented a local Agenda 21 program. Naturally, the context for doing business in Sweden was affected by this since many firms had to relate to the municipalities’ local Agenda 21-programs. Also, on the 1st of January 1999, the new Environmental Act, Miljöbalken, took effect throughout Sweden. The act
placed tougher demands on all actors and in that sense it was a step up from the earlier ones. Despite these environmental developments in Sweden, however, the social science side of environmental management research was more or less disregarded until the late 1980s (Schwartz & Wolff, 1989). The table below summarizes of Hoffman and Jamison’s accounts:

Table 3.1: Phases of environmentalism

<table>
<thead>
<tr>
<th>Shaping the global environmental agenda (Jamison, 1996):</th>
<th>An institutional history of corporate environmentalism (Hoffman, 1997):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-1968: Awakening</td>
<td>1960-70: Industrial environmentalism</td>
</tr>
<tr>
<td>1975-80: Social movement</td>
<td>1982-88: Environmentalism as social responsibility</td>
</tr>
<tr>
<td>1981-86: Professionalism</td>
<td>1988-93: Strategic environmentalism</td>
</tr>
<tr>
<td>1987-: Internationalization</td>
<td></td>
</tr>
</tbody>
</table>

Sustainable development(s)

Following these exposés, there is a matter of what comes after strategic environmentalism and internationalization. The historical backstep shows that greening is not a fad, but an encompassing ongoing process. It also shows different perspectives on greening and one interpretation is that the different periods are not as clear-cut as they seem. There are organizations working with a mix of the periodical characteristics described above. Some work in denial, where environmental management is viewed as something necessary but hindering (industrial/regulatory environmentalism). Others work with a more strategic and holistic view on environmental management (social responsibility/strategic environmentalism). All of them also have different internal mixes of approaches. Despite this, there have been some attempts to label a next phase. Such attempts resemble the evolutionary perspective on science displayed by Gergen (1999) as he suggests transformations from idealism to materialism to postmodernism.

Within environmental management the equivalence to the postmodern phase has come to circle around the concept of sustainable development. As defined by the Brundtland commission (WCED, 1987), the concept basically means meeting the needs of the existing population without jeopardizing the possibilities for future generations to meet theirs. Hoffman (1997, p 193), calling it a new institutional framework challenging underlying assumptions of the market economy, states that "sustainable development calls into question the social and physical autonomy of the firm, the profit motive as a singular objective, the prominence of technology in solving environmental problems, and the necessary imperative of economic growth".

There are those arguing that the concept rather is a way to legitimize further economic development, but with a touch of green (c.f. Egri & Pinfield, 1999). Such criticisms were also raised in the aftermaths to the world summit in Johannesburg, South Africa, 2002, the so-called follow-up to the Rio summit. It
is a matter of interpretation, however, but following Hoffman’s view, the issues addressed pertain to interesting tensions when discussing our developments. Judging from written traces in the environmental field, discussions on the issues in Hoffman’s quote are presently entertaining a growing stock of research on organizations and the environment.

The mainstream view in those writings rests on a business oriented worldview. Focus is on economic and technological development as the one right way. It dominates the dealing with any eventual problem that might occur in the relations between the environment and the organization. Critical voices in the debate often target such a view, arguing that the economic bottom line has to be accompanied by equal consideration of environmental and social issues, making it a triple bottom line. Even critics are, however, many times stuck in a technocratic mindset, pursuing another type of bottom line, albeit a green one. In my reading of the literature, though, there seems, despite evident disagreements, to be a consensus between different camps on a number of issues. I have grouped these into four points:

- There are (constructed or real) complex environmental problems
- Firms are polluters
- Firms need to alter current patterns
- Management and organization research has a role to play, either by being more involved and/or through changing its perspectives

Targeting different approaches, one part is the view on the environment, referring to the worldview focus. The matter could be referred to the classical dualism between the environment and society pondered already during the Antic era (Latour, 1999). Fast-forwarding to the last century, however, the economist Kenneth Boulding (1968) had this duality in mind when calling us cowboys in a spaceship. We perceive our resources as indefinite and the planet’s balance sheet, to use economic language, as if it did not contain a debt-side. Instead, the unexplored prairie stretches out for the conquering business entrepreneur and only a poor cowboy would resist the challenge. In the literature this nature-society divide has mainly circled around the concepts of ecocentrism versus anthropocentrism.

**Ecocentrism and anthropocentrism**

Considering us human makes ecocentrism difficult. Even Storm (1972) singles this out when emphasizing our roles as determiners. There are, though, writings that strive towards less anthropocentric approaches, such as Gladwin et al’s (1995) sustaincentric approach; Peattie’s (1995) holistic approach; Hanson’s (1996) eco-sensitive approach; Söderbaum’s (2000) political-economic approach; and Welford’s (2000) Buddhist path.
Another example is Shrivastava (1995), who advocates the need for a less anthropocentric perspective. He argues that the environment is denatured by organizations and viewed as a “bundle of resources to be used by organizations” (Shrivastava, 1995, p 125). Such an approach limits the analysis. The relevant environment should also include biological, geological and atmospheric elements. An ecocentric view, instead, rejects “the separateness, uniqueness, primacy, and superiority of the human species” (Shrivastava, 1995, p 126). Hart (1995) also aims at the neglect of the biophysical environment in management theory. Ignoring the environment is problematic, he argues. This is exemplified by the contemporary unsustainable developments, such as the population increase, the globalization of the economy, the consumption of fossil fuels and the growth in industrial production. Hart (1995, p 991) translates this into an “either alter the nature of economic activity or risk irreversible damage to the planet’s basic ecological systems”.

Further, in an investigation of environmental policies in 30 manufacturing firms in Quebec, Dion (1998) develops a typology consisting of four categories. A and B represent strong anthropocentrism, whereas C and D represent weak anthropocentrism:

(A) The neo-technocratic enterprise: 4 firms
(B) The techno-environmentalist enterprise: 7 firms
(C) The pseudo-environmentalist enterprise: 16 firms
(D) The quasi-environmentalist enterprise: 3 firms

The strongly anthropocentric firms have the environment as something that can “be abusively exploited in order to meet our felt preferences” while the weakly anthropocentric firms “implies an ideal of living in harmony with nature” (Dion, 1998, pp. 152-153). For the neo-technocratic firm, focus is on conforming to laws and regulations as well as working with corporate transparency and external collaboration. There is also an emphasis on individual responsibility, which basically plays down the responsibility of the firm as such. The techno-environmentalist firm embeds the characteristics of the neo-technocratic firm, but adds elements such as working with environmental programs and emergency plans, environmental consequence analyses for every future transaction, educating their personnel, and supporting scientific and technological innovations involving environmental protection.

The pseudo-environmentalist firm “remains anthropocentric, and nonhuman beings are protected because unlimited exploitation actually would be a danger for future generations” (Dion, 1998, p 155). The corporate policies in this approach are embedded in the previous approaches, but elements such as recycling, reuse, volume reduction, safe elimination of waste and different methods of prevention are added. The quasi-environmentalist firm embeds the three precedent approaches. It is also “typically one in which environmental concerns are the most developed and it is open to consideration of a nonanthropocentric
view of nature” (Dion, 1998, p 156). Dion (1998, p 156) illustrates this type of firm with Shell Canada, stating that “such companies are deeply concerned with the interests of future generations as well as for the quality of nonhuman life”. The additional elements of this approach circles around ecological ideals, ecological strategies, supports of green R&D and educational objectives.

Ecocentric paradoxes

Gladwin et al (1995) also argue that management theory lacks biophysical foundations. One of the three paradigms in their article is the ecocentric paradigm. It has the earth as “alive, active, sensitive to human action, and sacred”, and the “governing metaphor is organic, with wholeness representing the basic principle” (Gladwin et al, 1995, p 886). Shrivastava, Hart and Dion’s accounts serve as examples of ecocentric movements. There are, however, interesting paradoxes in their discussions.

Shrivastava’s ecocentric management paradigm acknowledges a destructive side of the organization. In order to deal with it, industrial ecological systems, following population ecology theory, resembling the environment’s ecosystem should be created (c.f Tibbs, 1992; Hawken, 1994, pp. 75-79). This practically comes down to minimizing the organization’s use of virgin materials, eliminating pollution, and minimizing the life-cycle costs of products and services. The paradox here is that these activities are not especially ecocentric. They rather indicate a faith in the human capability to find new ways to master the environment. Minimizing and eliminating in order to create new industrial systems is a human centered approach. Especially when a reader also learns that these activities could save costs and generate revenue for those (humans) vesting time and money into them.

Shrivastava also claims a social constructionist perspective, but he is not a universal constructionist as the nature-society remains intact. Instead, he falls victim to Hacking’s (1999) question: the social construction of what? What in this case are processes controlled by humans, which in short means that the environment is out-there. Shrivastava’s article begins with ecocentric ambitions, but they are sidelined by an anthropocentric approach with a technological and economic focus. A bit ironic, his end result is basically what he sets out to criticize.

Despite also relying on the neglect of the environment as a driving force in his account, Hart’s (1995) new management approach is anthropocentric. The environment is out-there. Leaning on a path dependent strategy where firms go from pollution prevention to product stewardship to sustainable development, there is a particular stroke of linear causality and rational control in his article (for reviews of stage-models of corporate greening, see Schaefer & Harvey, 1998; Kolk & Mauser, 2002). As organizations move towards sustainability, Hart focus on waste minimization, environmental product design and technology cooperation. They could all be interpreted as representing a particular faith in
technological and business development as the green saviors. They are also about us finding new and more efficient solutions to grow the economy while protecting the environment. There is, again, a focus on new ways to master the environment.

Dion singles out Shell as a role model in the greening of industry. This might sound skeptical to someone following the debates on corporations and their role in society during the last decade or so. Shell has been in the spotlight many times, for instance, regarding their affairs with the Ogoni people in Nigeria (c.f. Roddick, 2000) and their effort to dump Brent Spar in the North Sea. Despite these critical events, as a mega-multinational corporation it is also a common target for anti-corporatists and environmentalists. The North Sea controversy between Shell and Greenpeace, however, surfaced what might be recognized as a collision between two worldviews (c.f. Grolin, 1997; Tsoukas, 1999). Shell leaned towards a strong anthropocentric view compared to its combatant’s weaker view. Stories like these that make Dion’s account difficult to patch together. It should, though, be noted that Dion focused on written statements by corporations. There is a particular risk of facing rhetorical statements matching what is expected from firms in order to be perceived as legitimate corporate citizens (c.f. Hanson et al, 1999; White & Hanson, 2002). There is also a focus on green R&D by Dion. This would fall under the same criticism of a technology focus as for Hart and Shrivastava. The way out is based on new and better technological solutions. Anthropocentrism lies at the core of such a view.

As the examples discussed above illustrate, there are many calls for ecocentrism. I believe, though, that Dion’s use of words, strong and weak anthropocentrism, is appropriate to frame ontological standpoints related to greening. Shrivastava’s continued emphasis on ecocentrism is awkward as his solutions build further on an economic and technological bottom-line. Being ecocentric is merged with anthropocentrism, which basically is an impossible combination. Shrivastava’s article, however, shows that it is not easy entering a path not walked upon by many modern management and organization scholars. My conclusion from the ecocentric/anthropocentric debate is that trying to be ecocentric, or at least a weak anthropocentric, is an effort worthwhile. We cannot, though, neglect our continuous anthropocentric slips, which perhaps make us humans.

Dion’s account of weak anthropocentrism and Storm’s (1972) earlier pledge also emphasize that the relations between all becoming things should aim at harmony. Harmony also means humble balancing. Hanson (1996) argues that anthropocentrism comes with those approaches seen as having value for humans. This includes most organizations and most organizations coordinate action in order to further human interests: “The question is therefore not whether business organisations are anthropocentric but how anthropocentric they are, with lesser degrees of anthropocentrism reflecting a movement along a continuum” (Hanson, 1996, p 154). The scholars reviewed above claim that there
ought to be movements from the right side of the ecocentrism-anthropocentrism continuum to the left side (the dotted line links figure 3.2 to figure 3.3):

Ecocentrism

Anthropocentrism

Figure 3.2: The ecocentrism-anthropocentrism continuum

Holism

Moving along the continuum towards less anthropocentrism often hovers around adopting a holistic perspective (c.f. Gladwin et al, 1995). Hanson (1996, p 171) claims that a “vital part of moves towards eco-centric management is the presence of holistic thinking in organisations” (see also Egri & Pinfield, 1999, p 209). Peattie (1995), when criticizing the concepts of environmental marketing and management as out-there instead of right here, also leans towards a less anthropocentric and more holistic approach. Environmental issues should not be seen as external to the organization, he argues, referring to Smuts’ (1920) work on appreciating holism as a base for understanding life. Holism has not been met with open arms, though:

The problem with holism is that it entirely contradicts the reductionist principles of the western rational scientific tradition. We can observe holistic relationships all around us, but they cannot be subjected to experimentation by the rational scientific method. Holism has therefore been largely rejected by the academic establishment in life and social sciences. (Peattie, 1995, p 30)

Holistic management “involves seeing a company not just as an holistic entity in techno-economic terms, but as part of a socio-environmental ecological system” (Peattie, 1995, pp. 30-31). This is a problem since there are more specialists than generalists in the corporate world, Peattie claims. Peattie’s focus comes down to crossing social-natural borders, which through time, as indicated in the previous chapter, has been difficult. In the area of science studies, actor-network theory (ANT) aims at a more humble balancing and a more holistic approach. Different environmental management scholars emphasize different aspects of ANT, but few, if any, have developed the non-dualistic aspect in any significant way.

One example is Bergström & Dobers (2000) where the authors focus on a municipality’s application process for governmental green money. The authors argue that their aim “is to show that governmental plans for sustainable development are not diffused throughout society, but translated, changed and localized through many intermediaries in different ‘time-spaces’” (Bergström & Dobers, 2000, p 169). The process is perceived as a project and we learn, based
on Latour (1993), that projects are "emerging networks in which coalitions of humans and nonhumans, individuals and groups, come together in an ongoing chain of translations" (Bergström & Dobers, 2000, p 170). The analysis is a fluent account of the application process, but there is no discussion about nonhumans in the coalitions. Who are they? How are they networked in the process? As I understand it, their analysis is still based on a dualistic platform. Still, this area is a path for future environmental management studies searching for less anthropocentrism.

Holism should also be reflected against constructionism, advocated in chapter two. Believing in holism, as in it being a larger frame in which all things fit, contradicts the constructionist's becoming approach to organizational greening to some extent. The point in this study is not that there is a meta-frame, but that a holistic perspective might reflect more upon the diversity of actors coming together to perform a particular activity.

A Buddhist path

Another path towards ecocentrism is Welford's Buddhist path (see also Schumacher, 1973/1988), which might be regarded as a strong anthropocentric strive for ecocentrism. Welford (2000, p 127) argues that:

The ecological crisis in which we find ourselves is therefore, in part, a manifestation of a lost spirit and a mindset that fails to recognize truth, interconnectedness and complexity. Human beings themselves, through their materialism, consumption and greed, are directly responsible for most of the unsustainable practices that we see. If there is to be a real move towards sustainable development it will not be sufficient to rely on businesses, governments and other institutions. Change will have to occur within people and particularly within those of us who live in the West.

A Buddhist path means challenging simplistic thinking. It is about finding a balance, or a middle path. What makes the Buddhist path attractive, Welford asserts, is its cosmo-centric focus and its humble stance. Buddhism has, for instance, never been engaged in a religious war. For the business-oriented actor, Welford's plea is that we need an economic system that is not a master of society and environment, but rather a servant. Our economic motives should also be based "on notions of moderation and it is this facet of Buddhist economics which makes it so powerful" (Welford, 2000, p 138). A focus on moderation would affect all our activities, especially our working lives. In a Buddhist path, this means promoting values such as communion, compassion and humility in business organizations (Welford, 2000, p 142; see also Max-Neef, 1992; Wackernagel & Rees, 1996, chapter 4).
Antropocentric management

As Hanson (1996) emphasizes, however, there are only different degrees of anthropocentrism in the organization and management literature. No approach is completely ecocentric. In Gladwin et al (1995), one of their extreme paradigms (the antithesis in their article) is the earlier defined ecocentric paradigm. The authors criticize such an approach since it “fails to embrace the capacity of human intellect and, thus, the whole of reality” and it also “fails to adequately address issues of unemployment, income inequality, and other social pathologies that grip the industrial world” (Gladwin et al, 1995, p 888). The authors also argue that such a paradigm could paralyze the translation from worldview to practical action. They conclude that “ecocentrism diminishes human distinctiveness, ignores fundamental relationships bearing upon human security and therefore ecological integrity, and rests on philosophical grounds that cannot currently be accepted as practical guides to human conduct” (Gladwin et al, 1995, p 889).

This might be so and their (realist) reasoning reaffirms that we might be stuck with different degrees of anthropocentrism. To my reading, however, anthropocentrism could be seen as equally loose when it comes to guiding practice. To be anthropocentric does not mean that problems gripping the industrial world are dealt with or addressed, or that the whole of reality is embraced. This study is motivated by its failures. In short, though, anthropocentrism is what we know best and we are as determiners perhaps bound to find working solutions within such an approach. But again, anthropocentrism is stuck with the duality between the environment and society, smoldering as a basic obstacle in our relations with the environment. In this sense, strives towards ecocentrism, or as framed here, towards less anthropocentrism, are fruitful movements. Next section explains the dotted line in figure 3.2.

Three competing approaches

At the end of chapter two, a figure inspired by Storm (1972) illustrated that one perspective was but one perspective. Closer analyses also reveal that one or two major aspects often characterize a particular perspective. Some might have a more economic focus, whereas others emphasize social aspects. They are all a part in defining organizational greening, though. From one perspective, different approaches could be framed through different “centrisms”. Two centrisms that hover around all approaches are, as mentioned, ecocentrism and anthropocentrism. They permeate all approaches. The figure below shows the ecocentric/anthropocentric continuum in figure 3.2, but from another angle (on the organization, see Hoffman, 1997, p 184; on management education, see Hoffman, 1998, p 72):
Referring back to the introductory chapter and to the piles of writings on my desk, it is evident that although six centrisms are highlighted in the figure above, which is a simplification, different approaches are often divided in even fewer categories. Rikhardson & Welford (1997), leaning on the Burrell & Morgan (1979) matrix, divide the diversity of writings in the positivistic, interpretive and two types of critical paradigms. Wolff (1998) divides it in the engineers, the ecologists and the corporate managers. Egri & Pinfield (1999) discuss the dominant social paradigm, the radical environmentalist perspective and the reform environmentalist perspective. Dobers et al (2001) develop the technological, emancipatory and hermeneutical categories. I have also chosen to single out three major approaches in order to illustrate the facets of organizational approaches to greening: the technocentric, the sociocentric and the politicocentric approaches.

The technocentric approach

Rikhardson & Welford (1997, p 43) argue that the positivistic paradigm, "favour biological and physical explanations of the environmental crisis". The rationality is linear and scientific facts are undisputable. A positivistic approach is also the base for ecological modernization, which is gaining momentum in society. According to Lidskog (1996; 1998), this is problematic since it suggests that we can modernize our way to an ecologically sustainable society through more advanced technology. Large parts of the business community have been enrolled in such a technological greening process, perceiving themselves as environmentally friendly actors moving toward sustainability. Changes in lifestyles and attitudes are in the process often neglected.

In this study, the positivistic paradigm and ecological modernization are referred to as the technocentric approach. According to Dion (1998), technocentrism represents the strong anthropocentric approaches' absolutistic and imperialistic character. Dion also places it within a corporate ideology and argues that in our post-industrial society, technocentrism has come to embrace new values such as environmental protection and consumerism. It is basically a
technocratic view, implying "the priority of the perspectives of experts" (Dion, 1998, p 157). Wolff (1998) frames such an expert-oriented approach through two of his categories the ecologists and the engineers. Söderbaum (2000, p 91), arguing for a holistic approach to economics, labels it the engineering habit, or the habit of looking for the single best alternative. He also merges such a habit with the focus on profit maximization, resulting in a kind of monetary reductionism, offering other issues such as corporate social responsibility less space. Technology and economy, although basically separate issues, come together in technocentrism, constituting the compass for the way forward in environmental management. In this line of arguing, technocentrism is merged with econocentrism. According to Gladwin et al (1995), technocentrism is the mainstream approach. It is the approach taken for granted within the management area. With a mechanical view of the organization (c.f. Burns & Stalker, 1961) as well as the environment, the core idea and responsibility of management is to add to the capital stock through pursuing economic growth and technological development. "Reasoning is egoistic, linear, instrumental and rational" (Gladwin et al, 1995, p 883), resulting in a privileged science and a laissez-faire approach to economics:

It pathologically disassociates or represses many critical components bearing upon life-support systems. It fractures or severs the connections that sustainability requires. It fails to deal adequately with intergenerational, intragenerational and interspecies equity. It hubristically places an extremely large and risky wager on the future. Finally, although it produces material wealth and power for a privileged minority, it gives rise to risks and imbalances that threaten the future of the entire human community. (Gladwin et al, 1995, pp. 885-886)

In the technocentric approach, a strongly dualistic and anthropocentric ontology are together with a representative epistemology coupled to designing the sustainable corporation (c.f. Hart, 1995; Shrivastava & Hart, 1995). There is usually a mix of factors behind such a design, but some of the reappearing ones are: the importance of an EMS to structure the environmental work; the use of life-cycle assessments/inventories and other environmental tools to measure the environmental impact; the importance of a top-down promotion of the right values; the need for cross-functional organizing (due to environmental issues' complexity); and the involvement of external stakeholders (especially other R&D centers).

The idea promoted in these writings is that the firm has to move towards sustainability. From being a polluter, placing filter on the chimney due to legislative demands, to an innovator that proactively integrates environmental concern in the early phases of the product development process. In the final phase, the firm becomes a global citizen, exporting their environmental innovations to the developing world (Hart, 1995). This means that firms in the North must develop markets in the South through exporting the environmentally sound technology developed in the North (Hart, 1995, p 997). Although Hart (1997, p 71) argues in favor of change in current patterns, and that solving the
problems "can be done by decreasing the human population, lowering the level of affluence (consumption), or changing fundamentally the technology used to create wealth", the heart of the matter is that "population and consumption may be societal issues, technology is the business of business". The technocentric approach is summarized below:

**Figure 3.4: The technocentric approach**

The *sociocentric approach*

The *interpretive paradigm*, Rikhardson & Welford’s second, is more *sociocentric* in orientation. Sociocentrism is, however, often based on the basic assumptions inherent in the mainstream technocentric approach. It does not question indefinite economic growth or profit maximization (c.f. Egri & Pinfield, 1999). It is also still a matter of anthropocentrism as the nature-society border is intact, as in Bergström & Dobers (2000). There is, though, a lean towards a social constructionist perspective (as in Berger & Luckmann, 1966). Compared to the technocentric approach, sociocentrism is more concerned with the social and institutional processes in organizational greening (c.f. Hoffman, 1997; Schwartz, 1997; Strannegård, 1998; Sweet, 2000; Dobers et al, 2001).

The organization is perceived as constructed in the tensions between conforming to pressures within and outside the organization, as well as to managers and employees’ own identity construction processes. It fights between short-time demands on efficiency and long-time demands on adaptation in its interaction with, as well as interdependencies of, its environment (Wolff, 1998). This environment, though, seldom includes the natural environment (Egri & Pinfield, 1999). Through such a lens, the scholars’ focus is on how greening is institutionalized and how certain interpretations of greening become taken for granted. The question of why these processes evolve, that is, a more politically oriented interest, is seldom in focus.

Dobers et al (2001) argue that there is a lack of the *hermeneutic*, or sociocentric, knowledge interest. In the literature on organizations and the
environment, they argue, there is a bias towards emancipatory and technical knowledge interests. This is problematic, the authors claim, as theories become unbalanced and single-tracked. The sociocentric approach, even though it often speaks of action, aims to remain value-free. The scholar is thereby placed outside what is going on to some extent, adopting an objective posture as truth-teller among the subjects under study. For the sociocentric manager, such a view also holds a passive stance to organizational greening. That is, working with environmental issues is a matter of dealing with a complex system of interdependent factors that have to co-work together in order to change (efficiency and adaptation). The intertwining character chokes action and the individual responsibility of the scholar and manager is thereby played down. The sociocentric approach is summarized below:

The politicocentric approach

In the politicocentric approach there are technocrats, interpretivists and combinations of both (c.f. Gladwin, 1998; Welford, 2000). What unites them is the call for radical change towards less environmental destruction. The critical humanist paradigm, Rikhardson & Welford’s third, follows the interpretive view’s focus on ideology and culture. The view recognizes, however, that there is no such thing as a value-free scholar or manager. The actions or behaviors of actors are politically loaded. Söderbaum (2000, p 24), quoting the late Swedish economist Gunnar Myrdal, states that values are always with us. One example of the politicocentric approach is the response from Welford & Meima (1997, p 3) to the technocentric dominance in greening processes: "If resolving the global environmental crisis were simply a matter of ‘techniques’ [---] then why haven’t we already implemented them?" The authors continue in arguing that environmental issues "are often ignored if there is no easy solution in sight, while issues related to organizational cultural issues are rarely on the agenda" (Welford & Meima, p 18). From this perspective, there is a plea to change underlying,
behavioral patterns or risk upholding destructive ones. Power also enters the debate. Welford (1995; 1997), for instance, argues that there are actors, foremost TNCs, hindering less environmentally destructive patterns from evolving due to firms' established position in the system (Gladwin, 1998).

Reconnecting to the ecocentric/anthropocentric continuum, Rikhardson & Welford argue that critical humanism and interpretivism share a common characteristic in that nothing is absolute in the social world. The authors also claim that: “Whilst we have to accept the physical absolutes of a finite material world, the way we use this knowledge in a social context is not bound by any natural laws” (Rikhardson & Welford, 1997, p 44). This is symptomatic for the green management approaches encountered in this literature review. The nature-social border is still intact. Among the politicocentric studies, Hanson (1996) might be an exception, though, moving towards less anthropocentric and more eco-sensitive values.

Rikhardson & Welford’s fourth paradigm, the critical structuralist paradigm, adopts a positivistic view on knowledge, but in contrast to technocentrism, it calls for radical change towards fairer and less destructive social structures. It is a structurally oriented politicocentric approach. Many environmental NGOs and other environmental activists could be framed as such, approaching the debates with a different set of facts, another right way. The politicocentric approach has, however, received its share of critique, mainly due to its emphases on critique. Its advocates seldom pose, it is argued, any solutions to the things they would like to see changed, at least none that are possible to implement in practice (c.f. Gladwin et al, 1995; Egri & Pinfield, 1999). The politicocentric approach is summarized below:

The three approaches singled out indicate the span of approaches reappearing in the literature. In the next section of the chapter, the approach adopted in this study is developed. The alternative could be seen as a mix of the sociocentric and politicocentric approaches, combining the interpretive knowledge interest with an
interest in why particular interpretations gain ground or not. The alternative is discussed through using other cases. The section is structured into different focuses. It begins with the organizational context and continues with a deeper review of why the dominating technocentric approach is not sufficient. It travels to the organizational level and then to a more practical focus, targeting the environmental manager as well as the most common tool in the environmental work, the EMS.

Towards a more reflexive approach

One area of research that has gained momentum in the environmental debate is the discussion on environmental risks (c.f. Beck, 1992; Lash et al, 1996; Adam et al, 2000). One example empirically fueling this area is the Brent Spar controversy between Shell and Greenpeace.

The organizational context - the case of Brent Spar

Brent Spar, an oilrig in the North Sea managed by Shell, had seen its best days. Shell therefore decided, with permission from the British government, to dump the rig at its present location. Greenpeace entered the process and objected the decision, arguing that the right thing to do was to tow the rig to shore. In the end, Greenpeace got the best of it.

Tsoukas (1999, p 500; see also Grolin, 1997), targeting the debate through a social constructionist lens, raises the question of “what happens when organizations do not just compete in a market of knowledge-intensive products but put forward competing knowledge claims in the public arena, as is the case with environmental disputes?” Greenpeace highlighted the risks and the uncertainty around the dumping and also managed to get media hooked in the process. This influenced the context and Shell’s acclaimed production of risks came to overshadow the decision to dump the rig. This made Tsoukas (1999, p 501) conclude that firms “do not compete only in the marketplace but, increasingly, in a discursive space in which winning the argument is just as important”. He even suggested a new organizational environment, driven by, among other aspects, new information technology and environmentalism. Four main features characterize the new context (see Giddens, 1991/1997, pp. 27-31; Beck et al, 1994):

• A modern capacity for action at a distance is amplified (distanciation). Time and space are not limited to co-presence. They can be lifted out of their contexts and recombined beyond here and now through, for instance, modern telecommunications. Media’s role in the controversy pointed at this.

• Mediated communication extends the availability of symbolic forms across time and place (instanciation). Now, or “events occurring simultaneously at distant locales”
(Tsoukas, 1999, 507), is possible, but it also hinders reflexive responses from the contexts of reception, as with TV, for instance.

- The quest for symbolic power (legitimacy) is extremely significant (dematerialization). Influence and non-conventional business advantages, grow in importance the more the debate is carried out in this new context. Credibility and legitimacy are key concepts. This is also facilitated by the increasing flows and availability of information, partly explained by the two premier features.

- Tradition loses its taken-for-granted status as actors are continuously revised in light of new information and new values, such as environmentalism (detraditionalization). Traditional social structures are revised in a self-criticism of the modern project. Values are more post-materialistic, but there is also an emphasis on individualization as family and corporations are redefined. Global movements of people and ideas result in more opportunities for cultural crossings, but they also set our social structures and traditions under pressure.

Tsoukas’ suggested environment is more fluid compared to a traditional and static perspective on organizational environments (c.f. Lawrence & Lorsch, 1967/1986). It is also predominantly constructed by environmental risks and new information technology. Focusing on environmental risks, there is a dependency on experts in defining them, partly explained by the risks’ abstract and intangible character: “such risks can be identified only through the casual interpretations of expert-systems specialists” (Tsoukas, 1999, p 504; see also Giddens, 1991/1997; Beck, 1992). As expert systems are impersonal, however, providing guarantees of expectations across time and space, they do not match the complexity of environmental risks. This complexity is also what opens risks to social construction (Wynne, 1996). Tsoukas’ four features give one explanation to why an alternative construction of the environmental aftermaths of dumping Brent Spar evolved. Shell’s technocratic view of the consequences and of how to solve the matter was refuted as Greenpeace put doubt into them and pointed at the values underpinning them.

Expert systems, in the process, face a return of ethics. They are pushed beyond the “true” answer, pushed to consider other views of the matter. In the Brent Spar controversy there was an uncertainty about the environmental impact of dumping the oilrig. In a way, “instead of scientific knowledge creating more certainty, as it was once triumphantly presumed, it generates ever more uncertainty” (Tsoukas, 1999, pp. 505-506). Greenpeace, via media, made sure that different rationalities met, making the controversy move from the traditional market where expert oriented, facts-will-prevail approaches were strong, to a global agora (defined as a public open space used for assemblies and markets). On this agora, more public and open than the traditional market, legitimacy became a sticking point. Acting on the agora set aside, at least partly, the more conventional market aspects, such as size, market share and financial resources.
In other words, the corporate actor, albeit stronger in many senses, do not automatically have a privileged position as the organizational context is transformed into an agora. In the controversy, Greenpeace's power also became greater as they managed to enroll a key stakeholder in the process, the media. Tsoukas (1999, p 509) ascribes media an active role in shaping what is going on, even claiming that "they help create events which would not exist otherwise". Organizations, in such instances, face a pressure to legitimate their actions to the values in the rest of the community. The controversy was not about selling power, but about trust and who managed to be the most convincing actor. Influence beat competitiveness as Shell became perceived as a systematic risk producer:

Shell insisted on a narrow technical definition of the problem, while those opposing its decision were implicitly pointing at the values underlying it. Sticking to its technical definition, Shell made sense of the conflict in terms of 'reason' against 'emotion', and 'head' versus the 'heart', failing to see the conflict as the clash of two rationalities, i.e. the instrumental, techno-scientific rationality espoused by Shell versus the morally based common-sense rationality espoused by the public (Grolin, 1997: 11). (Tsoukas, 1999, p 523)

In the end, the Greenpeace version of the story came out on top. Shell's technocentric approach failed. Rikhardson & Welford (1997, p 50), taking the Brent Spar as an example, claim that "it was the media which transmitted the alternative interpretation of other powerful pressure groups in society that eventually led to a different outcome". Media, as well as other actors, tends to lean on scientific results, but there is an inherent problem here as "scientists can only base their conclusions on evidence at hand" (Rikhardson & Welford, 1997, p 50). This neglects, for instance, the precautionary principle. A technocentric approach also pays attention to the media. As shown in the Brent Spar story, though, following a technocentric line of reasoning would mean that media should have communicated the technically correct analyses and not the emotionally driven Greenpeace campaign. In September 1995, Greenpeace acknowledged that their estimates of toxic contents were wrong (Grolin, 1997), but their aim was political. The Brent Spar also showed how the co-presence of values, emotions and scientific findings shapes the outcome. Emotions and values are always with us. The organizational environment Tsoukas suggests makes their presence more obvious it seems.

Fineman (1996, p 480) argues "that pro-environmental organizational changes, like other organizational changes, depend crucially on the emotional meanings that key actors attribute to environmental protection" and that "greening, in all its shades, is in part an emotional construct". Wolff (1998, p 306), arguing that environmental issues are not like any other issue, claims that "environmental problems cannot be solved by individual players, that environmental problems are genuinely interdisciplinary in their character and that
they are unusually charged with value and emotion" (see also Egri & Pinfield, 1999).

There is still a dominance of an objective expert language, a dominance, Wolff (1998) asserts, that should be questioned. Environmental problems are from a technocentric view a matter of correct analyses. Applied research is the mean to an elimination of the problems if the practitioners act according to the experts’ findings. Wolff (1998, p 301) opposes such a position since environmental problems are complex problems and therefore “require complex solutions, and this requires co-operation between institutional systems”. Söderbaum (2000) argues that this complexity, as well as the power relations between expert and the rest of society demands a closer focus on democracy. It means opening up the decision processes to those affected by the decisions, that is, to “attempt to increase the relative number of open doors” (Söderbaum, 2000, p 77).

Business organizations are not democratically elected and therefore not under the same type of scrutiny as public organizations. This is a problem since business organizations are key actors in risk construction. Their importance is also growing along with their growth, a growth that constitutes another important aspect of the context. Relying on Söderbaum’s simple observation that firms do not face the same democratic demands as public organizations, there is an element of worry in modern developments as firms are outgrowing nations in terms of economic size. Mergers, acquisition and competitive predating have led to a corporately managed society. Gladwin (1998, p 33) mentions some signs of this:

- 51 of the top 100 “economies” are transnational corporations (TNCs);
- The top 300 TNCs own an estimated ¼ of the world’s productive assets;
- 75 percent of global R&D is done by TNCs, of which 80-90 percent is conducted in the parent nations;
- TNCs employ below 1 percent of the world’s workforce;
- The number of firms doing business outside their home country rose by about 40 percent from the late 1960s to the 1990s.

One example of what might be regarded as a powerful TNC is McDonald’s (one actor in the GreenZone case, presented in chapter five). Schlosser (2002, p 4), listing some facts on the McDonald’s corporation’s growth from one thousand restaurants in 1968 to over thirty thousand restaurants worldwide at the millennium, states that:

An estimated one out of every eight workers in the United States has at some point been employed by McDonald’s. The company annually hires about one million people, more than any other American organization, public or private. McDonald’s is the nation’s largest purchaser of beef, pork, and potatoes - and the second largest purchaser of chicken. The McDonald’s Corporation is the largest owner of retail
property in the world. Indeed, the company earns the majority of its profits not from selling food but from collecting rent. McDonald’s spends more money on advertising and marketing than any other brand. As a result it has replaced Coca-Cola as the world’s most famous brand. McDonald’s operates more playgrounds than any other private entity in the United States. It is one of the nation’s largest distributors of toys. A survey of American schoolchildren found that 96 percent could identify Ronald McDonald. The only fictional character with a higher degree of recognition was Santa Claus.

Welford (1995, pp. 12-13) is critical to these developments, claiming that TNCs, due to their dominance over international trade and production, should be held responsible for much of the environmental destruction taking place. Those firms are able to set their own conditions on a global market and those terms do not necessarily fit with the needs of those less privileged. As showed in the Brent Spar saga, however, despite Shell’s size, the firm did not manage to combat Greenpeace. Even though economic size, as in Gladwin’s figures and Schlosser’s example above, still is important, there are examples of resistance. There are signs of movements towards an agora.

Brent Spar could be seen as a “traditional” controversy as well as a process where Greenpeace begun acting as a multinational corporate bureaucracy (c.f. Jamison, 1996). It is rather they, it could be argued, that have developed their skills as a multimedia actor (Beck, 1999). From one view, Greenpeace is no less technocentric than Shell (see Boström, 1999; see Upham, 2000, for a similar critique of TNS). The difference lies in Greenpeace striving for another right answer, or right way. The technocentric approach meets the structurally oriented politicocentric approach.

Another example of a symbolically oriented controversy, also involving Greenpeace, is the construction of a new heating station based on incineration in Umeå, my hometown. A growth in waste and a need for greener heating led the Swedish government to decide on a national effort to build new heating stations. The municipality of Umeå was an early implementer and in early 2000 the Dåva heat station was ready for production. The organization responsible for its construction and management was one of the municipality’s converted independent subsidiaries, Umeå Energi. According to the firm, Dåva is currently the world’s most energy-efficient and environmentally acceptable plant using waste as a fuel. As the plant’s input predominantly consists of household waste, representatives from the local community and environmental NGOs criticized the project. The project affects a reception area of more then ten municipalities and will continue to do so for a long time. The project therefore received a lot of attention in local media. Before the production started, local media published articles about how the new plant would have to import household waste from Norway to meet the demand for heat during wintertime. Umeå’s garbage was not enough. There were also some anxious voices about what the plant might send through the pillar. In this phase Greenpeace entered the debate in a forceful way.
through articles about toxic pollution. They also occupied the 100 meter tall pillar. Following this was a heap of articles.

Greenpeace claimed that Umeå Energi could not guarantee that the smoke from the pillar would not contain dioxins harmful to people and nature. Umeå Energi argued that the station was based on the latest technique and should be perceived as a prototype for similar projects. Two professors at the department of environmental chemistry at Umeå university stated that what comes out of the pillar was not more harmful than what comes down with the snow every winter. One of them even withdrew his support to Greenpeace. The general public was split in the debate. Umeå Energi was a self-appointed winner in the debate and even planned to sue Greenpeace for hindering production during the time they occupied the pillar. In a short note delivered to their customers, who are the majority of Umeå’s inhabitants, they argued that the customers should not have to pay for Greenpeace’s demonstration. Greenpeace, however, argued that they have not received any convincing contra-arguments regarding the toxicity from Umeå Energi yet. An associate professor at the department of chemistry also explained a split within the department concerning the debate.

As in Brent Spar, Dava is an example where environmental disputes engage people across sectors and how trustworthiness becomes a sticking point. Umeå Energi had landed the deal financially, but there was more to it, as they experienced. In Brent Spar, there are also signs in the controversy pointing at the context’s fragility, a fragility that Greenpeace managed to cope better with than Shell. Shell tried the traditional way of enrolling support when going directly to the government. The firm should perhaps have realized that this issue demanded involvement of other actors as well. This is also a reason behind large corporations’ engagements in alliances with NGOs. Alliances are but one part of greening the firm, however. One example of a TNC greening its operations is the family firm Ford Motor Company, to which attention is turned next in order to move down to the organizational level.

**Industrial ecology - the case of FMC**

Ford Motor Company’s (FMC) is in many ways an interesting firm. It is one of the key actors in GreenZone, which constitutes one of the five cases in this study. It is recognized as a pro-active motor firm in the environmental area. It was, for instance, one of the key sponsors of the Greening of Industry Network conference in Bangkok 2001. At the time of writing, Ford was also marketing the new Ford Focus Flexifuel in Sweden. The firm had also become a Swedish matter through the acquisition of Volvo personal vehicles. There used to be a saying in Sweden that what was good for Volvo was good for Sweden. Now this is partly in the hands of the Americans (just as with Sweden’s other large car manufacturer SAAB, acquired by GM).

Luke (2001; see also Wells, 2002) critically reviews Ford’s greening process, especially the recent focus on Sport Utility Vehicles (SUVs). His analysis holds
FMC as an actor promoting a traditional growth ideology in its environmental work. The SUVs serve as an example of this. First, though, Luke retells the new profile of the firm, which has its origin in the Model T Ford and the days of Henry Ford, the founder. The present emphasis is not on supplying any color that is demanded as long as it is black, but as argued by the firm’s president Bill Ford Jr., in supplying automobiles that are green. Luke refers to this as the Model E car, where E stands for high ecological, electronic and experiential content.

Luke basically concludes that FMC is placing the business before the environment. There are a number of reasons for this. First, there is a particular focus on industrial ecosystems and “this better idea about managing corporate behavior casts industrial firms as being just one system in a system of systems, and this recognition, it would appear, has recently captured the imagination of FMC” (Luke, 2001, p 312). This idea, of merging ecology and economy in a win-win situation, has the automobile industry and the enthusiasm for automobiles at the core of environmentalism. Industrial ecology means that environmentalism opens up new possibilities for production and consumption, making Model E Fordism “one of the latest economic growth ideologies” (Luke, 2001, p 320). In his criticism, Luke is careful to point out that there are sincere aspects in the greening of Ford. It is not plain green washing, but there are ambiguities in the firm’s activities. He claims that: “Ford does a lot of this environmental work precisely because government regulations require it, such activities do look really good, and it usually triggers a fair amount of very positive publicity” (Luke, 2001, p 323).

One of the recent developments within Model E Fordism is the focus on new alternative fuels, such as ethanol and the Ford Focus Flexifuel. This means that FMC has realized that “another fuel cycle infrastructure is a perfect means for prolonging the survival of FMC as an automotive enterprise” (Luke, 2001, p 325). Luke asks us to remember that although these developments are good, the automobile industry has fought hard against the alternative fuel discussion gaining momentum. It is in this context that he brings in the recent increase in the sales of SUVs, the 4x4 city and off-road jeeps. FMC refers to the customers’ change in lifestyle and desires when explaining this new demand, but simultaneously, the use of SUVs is not entirely unproblematic (Luke, 2001, p 325):

- SUV fuel economy is nominally less than cars, leading to added pollution;
- SUVs are permitted higher emissions than cars due to being regulated as trucks;
- SUVs create safety concerns for other drivers due to their size, causing visibility and security issues in traffic;
- SUVs can be driven irresponsibly off-road, creating localized environmental damage.
The increase in SUV demand and SUV investments by FMC also has an economic side. Luke (2001, p 326) takes three SUV models as examples and claims that Ford makes between $10,000 and $18,000 in profit on each sold SUV. To compare these figures, if a Ford customer in Sweden is interested in buying a new Ford Focus Flexifuel, he or she could expect to pay approximately the profit that FMC makes on each SUV, around $16,000. Still, Luke (2001, p 329) argues that Ford’s efforts demand respect, especially in such an industry as the motor industry where environmental issues are key issues to solve for the future, but again, there are dilemmas:

Its apparent comprehensive scope and sincerity essentially one-dimensionalizes environmental concern in minimalist terms that suit existing government regulations and attainable industrial ecologies. Furthermore, its approach does nothing to challenge the legacy of transportation systems. Ford does want to protect the unbuilt environments of nature, but it does this because those policies will enable it to preserve, much more significantly, the current built environment that requires its many automotive products to work. Ford’s sustainable development as a firm, therefore, requires it to recast environmental protection in these very constrained, conservationist, and corporate-centered terms.

The FMC case illustrates several aspects of organizational greening. For instance, the focus on economic growth, industrial ecology, and the government and the customers as driving forces in the greening process. Industrial ecology, as in the FMC case, is predominantly about network relationships. Such relationships are, in Sweet’s (2000, p 168) words, both a blessing and a curse. In the case of CFCs and the Swedish firm Electrolux (accounted for further on), Sweet argues that the firm had the chance to change its strategic position in the industry and gain a competitive advantage through launching the first CFC-free refrigerators. Instead, Sweet explains, the firms in the industry coordinated their activities, resulting in a pressure to adopt a common solution to the CFC problem. Sweet (2000, p 173) concludes: “The system effects of inter-related industrial relationships and technologies may slow or hinder the development and adoption of radical new solutions and may also impede the diffusion of new environmentally adapted products or procedures” (see also Hollander, 1998). She also stresses, however, that network relations, as in industrial ecology, will increase the momentum of the diffusion of the chosen solutions.

Emphasizing the economic aspects of these relations is also a blessing and a curse. A prize tag on the environment is complex, if not rude, but it is also recognition of the environment’s existence. Costanza et al (1997, p 42) state that "environmental valuation can assist us in understanding at least the minimal importance of ecological service". As shown in the FMC case and by Hart & Ahuja (1996), however, greening does not only serve the environment good, it also adds to firms’ profitability. It indeed pays to be green. Hart & Ahuja (1996) illustrate that working with emission reduction through pollution prevention could drop to the bottom line within one or two years after initiation. Other
measures on operating performance, such as return on total assets, are significantly benefited in the following year, but it takes about two years before the return on equity is affected.

Driving the environmental work

This win-win situation, the merger of economy and ecology, promoted through the concept of industrial ecology in the FMC case, might be the technocentric’s strongest argument. The firm becomes an environmental advocate, even an environmental pioneer. The ecological cries have been heard. The destructive aspects of industrialism are dealt with through new and environmentally sound technological solutions. Shrivastava & Hart (1995) label this imperative the competitive imperative and it is one out of four driving forces the authors identify in setting firms on course for sustainable development. The other three are the political imperative, the ethical imperative and the global imperative.

The political imperative is mainly referred to as a legislative pressure and not to be read as politocentrism, which in this study is more emancipatory and value-oriented. This imperative is, as Luke (2001) reminds us, an influencing driving force in greening the industry. Porter & van der Linde (1995) argue that regulation have a particular impact on firms’ environmental innovation processes. More effective regulation, they claim, where firms are encouraged to spend resources on innovating instead of fighting a regulatory struggle, would stimulate pro-active product and process development. Present regulation has to change, though, to better provide the incitements needed in the process. The authors exemplify this with, among others, the Scandinavian pulp-and-paper industry, where new environmental techniques also led to lower operating costs. From this perspective, the political imperative is about identifying links to the competitive imperative. There is, however, a fallacy with a focus on legislation. Sweet (2000, p 198) asks us to “avoid a limited focus on ‘stopping’ certain behavior if we desire deeper structural change to come about”. Such efforts, Sweet argues, would have industry targeting the legislative demands instead of the norms in the industrial network. The ways firms relate to the political imperative in their approaches are diverse, but the organizations in this study, for instance, all acknowledged this imperative.

The ethical imperative, or ethicocentric one, originates from a stance that “nature has a right to exist for its own sake, not just for human welfare” (Shrivastava & Hart, 1995, p 156). It is fundamentally wrong to impose our structures on the environment. An extreme view of this imperative drives us towards deep ecology and ecocentrism. Ethics in practice for firms rather mean doing good not necessarily for the sake of making money too. One example is FMC’s environmental activities, which are praiseworthy, Luke claims. There is, however, some skepticism on Luke’s behalf. The activities, he notes, might serve the purpose of bettering the corporate image and the profitability more than the environment. Ethics are also an area often drawn from in greening processes to
convince other actors of a particular view (c.f Strannegård, 1998). It seems, though, as if the corporate mindset leaves a narrow space for its existence. All too often being ethical has a financial bottom line.

The global imperative is intimately linked to the ethical imperative. The issue is the interwoven character of dealing with environmental problems and economic development, especially in developing so-called undeveloped economies. The best way to handle the global pressure is to continuously develop competitive products that are demanded by the customers (Hart, 1995; 1997). Customers demand SUVs and FMC has to provide the best possible ones, even though they are basically bad for the environment. The environment and society are better off if we export these solutions too (Hart, 1997). This would relieve undeveloped countries from making the same mistakes we have made. This implies us being the wiser global citizens. In this process, not to forget, the global imperative also includes the possibility of reaching a larger international market.

Dion (1998, p 160) concludes that firms tend to single out the customer as a key stakeholder, following what is the “conception of corporate environmental responsibility accepted by most consumers”. The customer becomes the mark of goodness in the environmental work, relieving the firm from any responsibility of what it develops, manufactures and sells. The corporate fondness of the customer rhetoric might also be explained by its tendency to maintain the managers’ autonomy and control (c.f Fineman, 1996, p 489). Crane (2000) referred this lack of morality in greening processes as amoralization.

Merging the four imperatives, Shrivastava & Hart (1995) argue that if firms aim at sustainability, they cannot continue with a narrow view of their stakeholders. They must also include the environment as a primary stakeholder (the ethical imperative). In sum, however, the authors claim that the “aim of the sustainable corporation is thus the creation of financially competitively viable businesses that conserve non-renewable resources, protect the health of workers and the public and minimize technological risks faced by communities” (Shrivastava & Hart, 1995, p 163). What this basically means is well illustrated by the FMC case. It is about finding new, albeit greener, ways of growing the firm, the industry and the economy. Luke claims that this is captured by the idea of industrial ecology (see also Tibbs, 1992; Hawken, 1994; Shrivastava, 1995), a concept supposed to link industrial systems, in which FMC and others operate, with ecological systems. The aim is to make industrial systems resemble the environment’s own ways of dealing with resource flows. In practice, one firm’s waste could be the input into another firm’s manufacturing processes. This leads to waste reduction, a reduced pressure on extracting virgin material and sometimes to an economically more efficient process. It is a win-win solution.

It is still evident, though, that the environment is out-there. It is a strong anthropocentric view of the environment. Also, and perhaps more importantly, the firm is cast as just one actor in a complex system made up out of a wide range of other actors. Change one actor’s process and the other ones would have to change too, especially if they are linked in an industrial ecological system and
thereby dependent on each other's outputs (in a wide meaning). The system might be a step towards eco-efficient enterprising, but it might equally well create inertia in new but still very unsustainable industrial systems. Merging the four imperatives comes down to technocentrism. Movements around the circle, as illustrated in figures 2.3 and 3.4, are not occurring.

A reason behind the FMC working with a one-bottom-line approach, as framed by Luke (2001), is not peculiar since it is a multinational firm aiming to satisfy its shareholders. In writings such as Hart (1995) and Shrivastava (1995), as well as in Luke's account of the FMC, there is an ambition to reinvent in light of new knowledge and values. FMC promotes green economic growth instead of plain economic growth. Hart (1995) and Shrivastava (1995) criticize established management theories for the neglect of the environment, but end up strengthening the theories' assumptions instead of altering them.

Hart (1995) criticizes the perspective from the established resource-based theory of the firm for ignoring the environment. He subsequently develops a new theory, labeled, which is also the title of the article: A natural-resource-based view of the firm. The core of the new theory is to add the environment as an additional factor in the theory and involve external stakeholders in the technological development processes. The firm will as a result have more sustainable internal processes as well as a higher social legitimacy. The dilemma is, however, that in this reinvention, Hart (1995) builds further on the resource-based theory, its concepts and assumptions. This means that nature is embedded into a theory based on competitiveness and where the view on the environment as a resource to be used in growing the economy is reinforced.

The same could be stated about Shrivastava (1995) as he launches a grave critique of the management field's way of treating the environment. He still ends up leaning towards established theories within that particular field (population ecology and organizational design). The question Luke asks FMC could also be asked after reading Hart (1995) and Shrivastava (1995): Will the problems identified in the respective article be reduced or accumulated by the new strategies/theories? Or, will organizational relations with the environment become more harmonious? In Luke's terms, industrial ecology is an idea that has penetrated the core of FMC and become part of a technocentric approach promoted by management at FMC. It is an approach hung on to by corporate actors because it legitimizes the firm's existence and because it opens up new profit-frontiers. A range of scholars has also reached similar results, although not all from a critical perspective (c.f. Shrivastava & Hart, 1995; Nyström & Liljedahl, 1998; Strannegård, 1998). A case where these win-wins are surfaced is Strannegård's study of Electrolux.

The win-win view - the case of Electrolux

Strannegård (1998), based on a sociocentric approach and a thorough field study, tells the story of how the environmental ideology at Electrolux was
institutionalized. The study is also of interest here as Electrolux is the parent to Husqvarna, one of the cases in this study. Strannegård (1998, p 7) begins by arguing that: “Once-and-for-all-time definitions and truths do not exist”. He rather sees them as negotiations between actors in the organization’s institutional environment. He also does not treat environmental issues in any particular way, but holds them as conventional management issues. Strannegård (1998, p 37) therefore relies on established management and institutional theory, and defines institutions "as action patterns that have become taken for granted within an organizational field". Relying on institutional theory, though, also means “that individual actors are only mediators of institutions, and that individual actions have little influence for the reproduction of institutions” (Strannegård, 1998, p 38). The purpose might be to illustrate the dynamics in the social construction of reality, but it also becomes a bit paradoxical in relation to definitions and truths.

The driving forces behind the institutionalization of the firm’s environmental ideology were many. One was the CEO’s, Leif Johansson at the time, conviction that the environment was an issue for Electrolux. Another one was the regulatory driven debate on the use of CFC (Sweet, 2000). Electrolux was actually the single largest user of CFCs in Sweden and had several products in their supply dependent on CFCs. CFCs were linked to the depletion of the ozone layer and the government strived to impose tougher legislative demands in the area. The firm also “suspected that the government would impose stricter restrictions on CFC usage in Sweden than in the rest of Europe, and because of this the alternative of moving manufacturing to Denmark was considered for a short period” (Strannegård, 1998, p 82). Despite efforts to influence legislators, CFC was banned in 1995.

Electrolux was “the first among the world leading refrigeration firms to be legally pushed to address the CFC problem” (Sweet, 2000, p 120). The firm was forced to take action. One part of the solution was found in a small East German firm, which had developed an alternative substance that would not damage the ozone layer. Strannegård (1998, p 85) continues: “Environmental issues had become an important strategic issue regarding white goods, and the ‘CFC-adventure’ had made top management worried of how environmental issues could create problems for the company”. The CEO became a fire soul in the process and, among other things, he initiated a collaboration with the earlier discussed environmental NGO, The Natural Step. He also created an environmental affairs department with an environmental manager, reporting directly to him. There was also a process initiated where actors within and around Electrolux were supposed to be enrolled to a particular view of how the firm approached the environment.

The environmental ideology pushed for was explicitly business driven, aiming to embrace environmental issues as any other management issue in order to legitimize their existence. Among other things, this meant that the concept of ideology was met with skepticism as it associated more to politics than to business (Strannegård, 1998, p 27). It also meant that environmental issues were
handled fairly similar to other processes, such as Electrolux' order-to-payment program and the total quality management program. Within this context, environmental issues were subordinated to an already established organizational approach, a technocentric one. This approach placed a particular focus on measuring things: “Priority will always be given to activities that have to be carried out; and activities that have to be carried out are simply those that can be measured” (Strannegård, 1998, p 149).

The environmental ideology pushed for by the ideology proxies (a proxy is defined as a delegate or a representative) was based on merging ecology and economy. In this process, “the contradiction between environmental issues and profits have to be seen as undramatic” and the “moment the relationship is considered to be problematic (dramatic), the ideology is jeopardized” (Strannegård, 1998, p 206). Exemplifying the view of the proxies, quotes from the environmental director and coordinator claim that it came down to creating shareholder value. The “best green products represent 5 percent of sold products, 7 percent of sales and 10 percent of profits”, making the environmental coordinator conclude that: “Green is the color of money!” (Strannegård, 1998, p 235).

The ideology proxies all the time searched for arguments supporting their case. They used different arguments depending on where and when they interacted with the non-proxies: “if there were business benefits, then organization actors should have faith in the ideology for business reasons, and if there were no business benefits, non-proxies should have faith in the ideology for the sake of ‘doing good’” (Strannegård, 1998, p 253). These arguments are similar to Shrivastava & Hart's (1995) competitive and ethical imperatives, but Strannegård's study shows that there was a money-making bottom line. The environment was embraced by the business rhetoric.

Fineman (1996, p 490) also concludes from the greenest firms in his sample that “the constructed moral culture in the greener companies is essentially a refinement of the traditional business one, not a transformation to a ‘true’ ecocentric one”. As quoted, two actors (proxies) driving Electrolux' win-win environmental ideology were the CEO and the environmental manager. The latter plays a key role in an organization's environmental work. Such a position is, however, more common in large firms, such as Electrolux and FMC. Environmental issues in small firms usually fall on the table of the managing director, as he or she plays the role of the production, marketing and personnel manager too. The role of the environmental manager, though, could also be delegated to a range of actors within the organization (c.f. Fineman, 1996), although large firms tend to have one manager coordinating environmental activities.
The environmental manager

Fineman (1996, p 486) claims that his interviewees, who were managers working with environmental issues in supermarket chains in the UK, "were faced with quandary as to where to draw a line between environmental issues for which they should or should not be responsible". In this transformation process, legislation and the firm's culture provided part of the solutions. The managers, however, were also left to their own improvisations, which "usually started with re-framing and de-emotionalizing; the environment was translated into 'safe' business language" (Fineman, 1996, p 486). This approach was evident at FMC and even explicit at Electrolux.

Focusing on the environmental manager, Catasus et al (1997, p 197) claim that he or she is the social conscience of the organization. In their study, based on a focus group interview with environmental managers using video-taking, they argue that an environmental manager must listen to and interpret three voices: an internal, an external and nature's voice (Catasus et al, 1997, p 199). Their study also shows a pattern of observations concerning re-labeling the organizations' activities where the environment is framed by the business rhetoric. The authors exemplify their results with the following four activities (Catasus et al, 1997, p 200):

1. Justifying cost reductions by calling them environmentally related;
2. Re-labeling greening as cost-reduction;
3. Using the environmental imperative as 'the extra argument' to justify investments and projects;
4. Categorizing traditional investments which would have been done anyway as environmental investments.

There was thereby space for the firm to maneuver since "a cost-estimate can always be arranged in a way that it comes out in a favourable way" (Catasus et al, 1997, p 201). The environmental managers also tended to motivate environmental efforts through the win-wins between economy and ecology. The downside, according to the authors, was that this "ignores the fact that some environmental investments are negative for the financial outcome" (Catasus et al, 1997, p 203). About the managers' view of the environment, it was argued that although the environment was important to them, they felt constrained by their roles as environmental managers. Meima (1997) metaphorizes this as a confrontation with the "green wall", a situation when top management halts the environmental work. In Meima's account, this indicates a time in a change process when change is confronted by the organization's core values and attitudes. Here, but no further, is the message. Taking another step means changing the way things are done and the way of thinking dominating the organization. This would translate into uncertainty about currently established power and control structures and systems. Those acclaimed to be in control...
often prefer to maintain these structures. The green wall is also a sign of a
conflict between those who drive the environmental work and those who are
skeptical within the organization. There is a cultural collision. An analysis of the
culture, Meima argues, might, though, reveal that they are more in accordance
than they think. They just speak with different dialects. Emerson & Welford
(1997, p 74) assert that: "All firms are pluralist coalitions, with a variety of
cultures; major change requires the identification of and working with them all".
For the proxies at Electrolux this was handled through drawing on different
arguments depending on whom they were trying to convince, even though the
bottom line was about money.

The environment still remains voiceless, leading Catasus et al (1997, p 204;
see also Catasus, 2000) to conclude that "the profitable firm ranks before the
sustainable firm". This restricted the visionary element of the managers' work, as
they had to keep within the boundaries of the corporate ideology. It seems that
the authors hinted at environmental issues inviting visionary thinking, but once
the corporate culture became the manager's reality, the earlier uncolonized terrain
(Gabriel, 2000) with its fantasy element is translated into just another business
issue. The environment, echoing Fineman's words, is de-emotionalized and made
a safe business issue first. One way of dealing with environmental issues is,
hence, to translate them into the own culture and structure. Environmental issues
as complex, cross-disciplinary and emotional then become manageable. In
making them manageable, many organizations have also chosen to structure their
environmental work according to a standardized management system.

The tool - the management system

One of the environmental manager's assignments is usually to implement and/or
maintain an EMS. These systems have taken the corporate world by storm, as
showed by the rapid increase in the number of ISO 14001 certifications and
EMAS registrations (ISO World, 2002). They have become a key aspect of the
sustainable corporation (c.f. Hart, 1995) and of an industry-wide standardization
process (c.f. Rikhardson & Welford, 1997), especially ISO's version. According
to the Swedish Standards Institution (1996, p 4), the ISO 14001 is "intended to
provide organizations with the elements of an effective environmental
management system which can be integrated with other management
requirements, to assist organizations to achieve environmental and economic
goals". The basic EMS follows five phases:
Pros and cons of implementing an EMS are often discussed. It usually depends, however, on how, when and from where the debate is perceived. Advocates of the system stress the benefits of translating the environment into an issue for businesses. An EMS also provides management with a model to handle environmental issues within as well as with a benchmark for comparisons between organizations. It is sometimes argued that the system has financial benefits as through the focus on greening, the measures taken in the process often lead to increased resource efficiency and sometimes a better reputation. Last but not least, a main pro-argument is that working with the system leads to less environmental destruction.

From the other side of the EMS, critics object to these examples. They argue that in an EMS work, environmental issues are often allocated to a specific environmental group, resulting in less integration of the environment into the organization. The system also supports a top-down approach. An EMS certificate is also not an eco-label, meaning that working with an EMS does not mean that the organization has a strong environmental program or that it is environmentally friendly. As Peattie (1995, p 125) claims: “A management system of any form is entirely dependent on the quality of the information that is fed into it”. The ISO 14001, for instance, has also been acclaimed to cost too much money to implement and benefits are uncertain, especially for small firms. The systems are rather designed for larger firms, creating a misfit for many small firms aiming to implement such a system (Ammenbergen et al, 1999; Sandström, 2002a). ISO 14001 includes demands on following contemporary legislation and on making continual improvements. This means, however, that the organizations to a large degree set their own targets regarding their environmentally destructive activities.

Rikhardson & Welford (1997), who most likely would fall in the category of the critics, hold EMSs as technocentric and oppose the systems’ emphasis on quantification, objective measures and technocratic solutions. Instead, they argue that “corporate environmental management techniques and tools are not neutral but a product of cultures and systems within and outside of firms” (Rikhardson & Welford, 1997, p 40). The authors also claim that EMSs have become the bedrock of corporate environmental management, constituting a mean to
standardize a particular interpretation of environmental issues within an industry or an organization. The more it settles in the working organization, they argue, the more it thickens in objectivity. This is problematic “as the adopted interpretations of the world are standardized and passed on, individuals and groups of individuals gradually lose the ability to see and evaluate alternative ways of doing things” (Rikhardson & Welford, 1997, p 53).

The ISO 14001 is also a system created by and for industry. Thereby it is constructed outside the democratically grounded legislative system. Industry also remains the controller of the system’s content and diffusion. Rikhardson & Welford’s (1997, p 54) identify one potential downside with this: “their codes are widely held to be primarily aimed at the protection of the members of the profession, rather than the public”. The authors also see the EMS as a way for firms to legitimate their existence in light of environmentalism. They single out two levels of legitimation. The first one is human language and the modern firm is legitimated through emphasizing the business rhetoric (c.f. Fineman, 1996; Strannegård, 1998). Rikhardson & Welford (1997, p 57) exemplify this by asking us to ponder the difference in language between “a company seeking to continually increase its profits” with a “company wanting to operate ethically in an egalitarian structure”.

The second level of legitimation travels from language to ideology. In the authors’ account, ideology is linked to a body of ideas and they single out two ideas dominating corporate environmental management: the idea of the EMS and the idea of eco-efficiency. Both ideas, according to the authors, enforce each other and further enhance the business rhetoric. They also lead to mechanistic, top-down organizational structures and they are put in place due to their controllability. The sticking point in the environmental management ideology is, however, that it sediments a particular interpretation, an interpretation that strengthen a corporate oriented view. Thereby it constitutes a hinder to participative sustainable development processes. The authors argue that this has to be challenged and unless we conduct “a fundamental revolution in the way we organize our society, such a challenge can only come about through a legislative process” (Rikhardson & Welford, 1997, p 60), i.e. a faith in Shrivastava & Hart’s (1995) political imperative.

The EMS trend in industry could partly be seen as the emergence of new administrative ways to control the organization in a relatively unexplored area. The top-down emphasis fits well with a mechanistic management system, suitable in stable organizational contexts, discussed by Burns & Stalker (1961). In such a system, the organization:

- Defines and breaks down problems and tasks;
- Engages in technological refinements instead of focusing on the visions;
- Clearly define each role’s areas of responsibility, authority and methods;
- Has a strong hierarchy in terms of control and communication;
• Controls the flow of information;
• Interact vertically;
• Demands loyalty and obedience in the organization;
• Prefers specialists before generalists.

In one of their case studies representing the mechanic approach, Burns & Stalker (1961) even found a “factory bible” breaking down the organization’s processes. In other words, there were clearly defined standard operating procedures in the firm, followed as a way to avoid uncertainty (Cyert & March, 1963/1992, pp. 120-134). Following Rikhardson & Welford’s (1997) line of argument, this seems to be a common approach in the greening of industry. One of the key findings in Burns & Stalker’s work is also that there is a tendency for organizations to drift towards a mechanistic management system, even if the organizations’ environments are characterized as organic. The main reason for this tendency is the quest for power and status, which in a mechanistic organization, it is argued, is perceived as more difficult to overthrow. The authors, however, still argue in favor of managers adopting a more fluid, or moving, perspective on their organizations. The organization has, they argue, to continuously make adjustments and change its roles and behavior as the organizational context is always changing. A bit philosophically, Burns & Stalker (1961, p 260) state:

Everybody is ‘becoming a different person’ in this way all the time. These changes are often irksome, sometimes depressive; always, however, they will be regarded as invasions or expansions of the individual’s field of established competence. The effort made by a managing director to persuade others of the rightness of the system which permits these things to happen, the effort to resist him, or to demonstrate that his views are wrong, underlie many conflicts. Ideological victory, after all, carries with it a measure of political control as nearly absolute as one can hope for.

From this view, the authors develop the antithesis, the organic management system. Such a system has a better potential of dealing with continuous change and therefore making the organization better equipped for dealing with new issues, such as environmental issues. Viewing the organization as an organism, however, is dependent on how the organizational actors define their organization’s relevant organizational environment. In organizational greening, this environment is usually defined in line with the traditional stakeholder model (c.f. Fineman & Clarke, 1996). On the organic view of organizations, Egri & Pinfield (1999, p 222) claim that: “Organizational decision-makers are indifferent to events having consequences for other ‘environmental’ stakeholders but which have little consequence for the focal organization”. A point is, though, that an organic view, and an organic management system, opens the opportunities for considering other stakeholders and imperatives along the way. It is a movement towards an open system view of the organization (Egri & Pinfield, 1999, p 223), a view, Thompson (1967, p 13) argues, that holds the organization as “indeterminate and
faced with uncertainty, but subject to criteria of rationality and hence needing certainty”. The organic management system is characterized by:

- Knowledge and experiences being shared in a journey towards a common goal;
- Tasks are decided based on the organization’s situation;
- Tasks change all the time through interaction with other actors;
- Responsibility is not passed on;
- The engagement for the organization supersedes all technical definitions;
- A network-like structure controls and communicates;
- Sanctions are decided based on the common interest;
- Knowledge could show up anywhere in the organization and where it does, a temporary and ad-hoc control and communication center is constructed;
- Interactions and communication are horizontal;
- Information and advice instead of instructions and orders;
- Expansion means more than loyalty and obedience.

These aspects are also present in writings that from a more sociocentric perspective argue in favor of transformation towards sustainability (c.f. Halme, 1997; Jones & Welford, 1997). Organic management systems, it seems, enhance participation and embrace diversity. It also demands continuous reflections on what is going on.

It has been suggested that one of the firms mentioned, the Anita Roddick-founded TNC, The Body Shop, has managed to loosen up technocentrism in arguing and acting in favor of a socially responsible business (Roddick, 2000). Participation and diversity are but two aspects that seem to have more space within this firm’s developments. Values are another aspect. The Body Shop might, hence, be an example of a more organic, reflexive as well as socio-political organization.

The spearhead - the case of The Body Shop

The Body Shop is at times framed as a pioneer in discussions on corporate environmental management and social responsibility (c.f. Schwartz, 1997; Wycherley, 1999). Jones’ (1998, p 128) study of The Body Shop’s culture development strategy focused on identifying the elements of the “strategy that maximize employee commitment toward both the company and its sustainability goals”. Jones analyzed the strategy in terms of its unitarist and pluralist elements. The unitarist elements are expressions of a strong culture, consistent and effective in determining the employees’ behavior. It means control through ideology, indicating a top-down, mechanic and non-emergent approach. The Body Shop’s Rights and Responsibilities included both unitary and pluralist aspects. They pleaded that the employee should conform to the firm’s basic
values (unitarist) while simultaneously challenging and having an own voice (pluralist). Roddick (2000, p 223) also states that they needed to institutionalize social responsibility since “I was frightened that all this ad hoc stuff we did was going to be seen as just an add-on”.

Jones (1998, pp. 133, 135) further notes that there were indeed “enduring differences in values and commitment up and down and across the workforce”, which “suggests that important personal values were not being satisfied by The Body Shop’s mission support strategy”. Alongside the mission support strategy, a personal support strategy was therefore stressed. Such a strategy focuses on the satisfaction of the personnel’s needs, mainly through “relationships: mutuality, belonging, and connection” (Jones, 1998, p 135). Jones’ conclusion is, however, that The Body Shop is predominantly unitarist, but at the time of his study moving in a pluralist direction. He argues, though, that balancing between the two extremes is not recommended. Instead, a both-and approach, or a contextually appropriate combination, is preferred. Jones (1998, p 141) explains that it “may be quite appropriate to be ‘unbalanced’ in one direction or another, ranging from the uniculture of a hospital casualty department or a fighting regiment, to the pluriculture of a democratic parliament, debating society, or liberal arts college”. The Body Shop, Jones (1998, p 142) asserts, “still appears to favor unitarism, with a continued explicit top-management commitment of moving toward sustainable development values”. Thereby the firm resembles a fighting regiment more than a debating society.

One aspect in transformation towards sustainability, which is emphasized in Jones’ study, is participation and the time and space for people to express their opinions and values on the movements. Jones & Welford (1997, p 128) conclude that: ”Participation is at the heart of sustainable development and this means that the empowerment of workers and the introduction of more democratic arrangements within industry are fundamental requirements of any change process”. One could interpret this stance in line with Söderbaum’s (2000) call for more democratic processes in which organizations are better off learning to keep doors open. Parker (1992), in the previous chapter, also claimed that the modern project has suffocated the organization’s capacity to speak different languages. With environmental issues as emotionally loaded, dealing with them most likely demands, as do the postmodern organization, a multi-lingual capacity.

According to The Body Shop founder, Anita Roddick (2000, p 6), NGOs are more pluralist organizations communicating across borders and, hence, maybe a role-model in this sense for organizations moving towards sustainability. Despite Jones’ inquiry and Roddick’s tip on NGOs as role-models, there are aspects to cherish in The Body Shop’s developments. Their pro-activeness has not only made them a spearhead on issues such as environmental and social responsibility, but it has also made them a target for criticism. Putting your chin out means that sooner or later someone will have a go. The Body Shop has experienced this (c.f. Schwartz, 1997; Roddick, 2000), but as pointed out by Fineman (1996), although pro-active firms are placed in the environmental
spotlight and thereby run a larger risk for embarrassment, they are in general more comfortable dealing with environmental matters. One way to interpret this holds The Body Shop as more organic and postmodern. In their quest for a more responsible business, a business as unusual as Roddick labels it, they equip for continuous change, partly because “managing sameness deadens the soul” (Roddick, 2000, p 38). Roddick (2000, p 168) continues:

I also think the business community has tried to operate politics and commerce in completely separate arenas for far too long, believing that neither should interfere with the other. I disagree fundamentally - I’m for interference. As far as I’m concerned, political awareness and activism must be woven into the fabric of business. In a global world, there are no value-free or politically disentangled actions. The very act of organizing on a global basis is political because of culture, geography and differing value systems.

Such an approach has the firm as accountable to the public, resulting in demands on not only accounting procedures for the financial side, but also for the value (not as in financial value) side. Strong, or unitarist, cultures might, due to their difficulties in understanding other languages and rationalities, suit a transformation towards sustainability poorly, unless such a culture manifests plurality. Halme (1997) simply states that a flat organizational structure makes it easier to implement an environmentally friendly culture and that a holistic view rarely functions in a too hierarchical top-down managed organization. This also questions those who emphasize the importance of top management’s support in the environmental work, especially if a particular approach is diffused throughout the organization, as to some extent is the case in The Body Shop. Fineman (1996, p 493) states that “privileging a top executive perspective on ‘ecology’ or ‘respect for others’ contains an internal contradiction: it fails to engage with the values of non-executive personnel”.

A more reflexive alternative

With a constructionist worldview, an organization’s approach to the environment is made through interactions with other actors. In the literature, however, these interactions are often studied through a technocentric lens. This results in scholars and practitioners basically neglecting the environment, as well as the non-linear and pluralist aspects of human action. Reflections do not seem to reach the ontological level. Although this neglect is identified on occasions, the environment is seldom ascribed a moral status. It is rarely involved and when it is, it is interpreted through traditional stakeholders’ schemes of interpretation. Fineman & Clarke (1996, p 728) claim that “in practice, the extent to which the natural environment is treated as ethically relevant rests upon the politicized framing of stakeholders within an industry”. The authors continue:
While stakeholders do set out different kinds of 'oughts' for industry (some explicit, some implied), green 'ethical' stakeholders are rarely afforded legitimacy on environmental grounds per se. Their influence is acknowledged only if expressed through the language of more 'legitimate' interests (e.g. creditors, customers, regulators) or through the effects of irresistible alliances, such as between campaigners and the media. Generally, the environmental ‘conscience’ of industry is constructed within a small network of self-serving stakeholders. (Fineman & Clarke, 1996, p 729)

Bringing the environment, along with a wider spectrum of stakeholders, into the study of greening, different approaches than the established technocentric one are needed. A characteristic of such approaches is that they hold the dominating technocentric approach as merely one part of the picture and not as the picture. Scholars often take things for granted concerning driving forces and assumptions underpinning organizational greening. These processes then become highly simplified, which is partly done in this study too. Alternatives, however, aim at bringing more views into the debate, perhaps opening doors for affected parties to enter and participate. Throughout the theoretical discussion, key words characterizing alternative approaches have appeared, for instance: holistic thinking, simplistic thinking, visionary thinking, spiritual focus, anti-mastering perspectives, moderation, communion, participation, democracy, bottom-up and emotions. They are all traces of paths towards less technocentric approaches. Labeling them would most likely be a contradiction, but there are definitely postmodern (as discussed in chapter two) traits in these paths, pointing at the need to reflect on how and why organization approach greening.

On matters of worldviews, there is a need for particular emphases on harmonious and inseparable relationships with the environment. Ontological movements toward weak anthropocentrism and holism characterize the alternative approach. Holism does not mean considering everything or that there is a superior force out-there. It rather holds that consequences of action, for instance, cannot in their entirety be speculated or framed through technocratic instruments. Knowledge is also not a privilege for a selected few or developed with representational ambitions. It is produced everywhere, not just in the corporate or academic laboratory. Local laypersons’ knowledge must therefore be valued. The corporate ego-centered mindset is regarded as inadequate. The individualistic traits of the mindset are instead sidelined in favor of an emphasis on communion. This means that the individual firm or person reflects on the purpose and the potential consequences of his or her actions on the collective, including the environment.

The organizational actors, in a more reflexive approach, are seen as struggling in the tensions between performing as a profitable business, being a responsible citizen and developing an own identity. They are constructing their identities in a transforming society full of pressures to conform to the mainstream, but also full of opportunities to through self-reflexivity be unique. In these processes, stakeholders and imperatives are played against each other. The technocentric
organization halts their environmental work at conforming to existing legislation or meeting customer demands on product quality. Blame and responsibility is often allocated elsewhere. Through a more reflecting approach, carrying a faith in agency, the processes are not as one-dimensional as the technocentric holds them. Self-reflexivity lies at the core, as more socio-politico aspects are acknowledged. This does not, however, mean that all things can be dealt with in practice, but it keeps the dialogue alive and it enhances the chances of increasing awareness.

In practice, an alternative to technocentrism could very well include EMS, LCI, TQEM and other systems, but such activities are embedded into a weaker commitment to economic and materialistic values and to a top-down view. The management systems are rather organic, emphasizing participation and transparency in the organization's processes. Besides accounting for the financial matters, the organization also promotes accountability in the relations with the environment and with the community in which they are working. A more reflexive alternative is summarized below:

![Figure 3.8: A more reflexive approach](image_url)

The next part of this study targets the empirical encounters. Before indulging in each specific case study, however, a chapter on how they were carried out and analyzed follows. Next chapter is on research methodology.
4 Research methodology

In line with a constructionist research philosophy, case studies were conducted as they explore the complexity of the subject matter. The chapter outlines this methodology as well as how the five cases were encountered, written and analyzed.

Introduction

Every research process is a unique on-going creation and only with difficulties described. The path beaten in this study has a “zippering” (Orton, 1997) character where different sources and ideas, theoretical as well as empirical, have been merged. There has been a “frequent overlap of data analysis with data collection” (Eisenhardt, 1995, p 74), or a continuous data-making (Baker, 1997, p 131). Concepts such as deductive, inductive and abductive have flashed by the research agenda at different times. Each concept frames a specific part of the process without framing the study as such. I see no point in neglecting this study’s path, though, trying to sell a neat and packaged view. Successful studies are often obvious and linear, and consequently attract some kind of limelight. Failures, in rational research design that is, are often neglected (Punch, 1998, p 159), but they are interesting. Through its failures, this study is a success.

One core aspect of this research process is the use of case study methodology. The reasons for conducting case studies based on predominantly qualitative techniques, such as in-depth interviews and participant observations, were at first fairly practical. All my previous studies (one bachelor and one master thesis) were based on this approach. I felt comfortable with it and it also brought me closer to the actors. I did not perceive myself as a constructionist at the time, though, maybe because I did not have such a vocabulary or understanding to frame and categorize in such a manner. Partly due to my methodological interests in case studies and due to further readings, however, I found myself leaning towards constructionism. Qualitative studies and their openness to actors’ everyday life matched a researcher with a moving worldview. I am not sure, though, if my methodology made me a constructionist or if it simply revealed something that was left unspoken. The important thing was that my research philosophy made sense to me and that it aligned with my strivings to study organizational greening.

Aiming at other actors’ world-making means, Denzin & Lincoln (1998, p 3) argue, that we “study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them”. Yin (1989, p 21), however, although a case study advocate, sees the dark side of a case study strategy and summarizes some of the criticisms in three points: a lack of rigor, a poor base for scientific generalization, and it often takes too long and often result in massive, unreadable documents. One part of the critique might be caused by the multi-method approach characterizing case studies. The
methodology could be seen as slippery, as it embraces a diversity of methods, not only in-depth interviews and observations, but also questionnaires, structured interviews and action research. There is, though, a common denominator in this diversity when all methods within this strategy aim at grasping actors' views and processes (c.f. Van Maanen et al, 1982; Eisenhardt, 1995; Hinings, 1997; Denzin & Lincoln, 1998). This diversity might also be this approach’s strength (Yin, 1989, p 20). The scholar is not tied to any specific instrument. Within a case study framework, all methods, qualitative and quantitative, are also qualitative (c.f. Denzin & Lincoln, 1998; Vidich & Lyman, 1998). Despite methods used, the scholar’s interests and values influence them.

Aiming at an intimate understanding is not entirely rewarding. An actor-close method carries misgivings. Yin (1989) pointed out a few, but striving for actors’ perspectives also carries a risk of a researcher lost in particularities, a risk of missing out on a holistic picture (Norén 1995, p 169), or perhaps on the importance of thorough analysis (Fine, 1998, p 152). Van Maanen et al (1982, p 19) label such a lean the insider view, from which the researcher “always run the risk of being carried away by intimacy such that a critical slant on the materials will be lost and a sort of wildly romantic version of the local setting will emerge as a general description”. On the contrary, an outsider view is in danger of working with information that has no link to the actions of the studied. The information is superficial. It is often gathered through official sources where the identity of the corporation looks solid. According to the authors, an insider also tends to use less systematic methods, while an outsider often relies on established data-gathering methods.

There is a thin line to walk between closeness and dissociation, though: Do I dig too deep and miss out on the wider picture (if there is one), or do I never get close and instead find myself on the surface with some (for me) half-interesting generalizing claims? In response to the particularistic critique, some argue that on the contrary, case studies open up possibilities of going deeper and of grasping holistic aspects, especially if a process is in focus (c.f. Pettigrew, 1995, 1997). Yin (1989, p 14) adds that ”the case study allows an investigation to retain the holistic and meaningful characteristics of real-life events - such as individual life cycles, organizational and managerial processes”. Following these arguments, there are opportunities to grasp both holistic and particularistic aspects. This is, however, not really ceased in this study. It rather takes a snapshot-view, but it still aims at both particularities and holistic aspects.

In this study, the two environmental projects, GreenZone and the Green Guide, lean toward an insider view. The studies of the three large organizations; Husqvarna, Duni and FMV, lean toward an outsider view. In other words, the approach to the three latter cases was more formalized than the two projects. This is mainly explained by better access in the two projects.
The cases

The first design set up in this study followed a model developed by Yin (1989, p 56) in which the first step is the development of theory. This should be accompanied by case selection, designing interview guides and subsequently conducting the case studies. Back in the office again, individual case reports should be written, followed by a cross-case analysis and a development of both theory and policy. The linearity of the model is striking and I realized early on that this study would with difficulties be squeezed into Yin’s model. My funding was uncertain, empirical respondents did not follow my time-schedule (to my surprise!), teaching assignments popped up at the worst time and readings kept pushing me onto side-tracks. However, as the process developed, my ambition to squeeze became smaller, but the model still had a modernistic charm and it has influenced the structure of this study.

One of the early steps in the model is case selection. Yin (1989, p 53) argues that the cases should "serve a specific purpose within the overall scope of inquiry". They are either selected on grounds of similarities or differences. Eisenhardt (1995) suggests that extreme situations and polar types make sense when selecting cases. This study is based on all their advice, as there are similarities, differences and extremes among the cases, but the cases were not part of the initial plan. At least two of them, GreenZone and the Green Guide, were not selected to constitute case studies in the first place. They were my choice to study, but they followed from a diversity of other interests too. In GreenZone I approached the project first as a consultant in 1997 and later as a scholar and a customer. In the Green Guide project I was in the beginning of 1998 hired both as an instructor and an evaluator. The access was impeccable, but the cases were not cases in the research design.

Instead, the plan was to follow Eisenhardt (1995) and Yin (1989) more to the point and gather three cases with obvious similarities, but enough differences to make the analyses interesting. The three cases became Duni, FMV and Husqvarna, which by Swedish standards are large organizations. They are all Swedish in the sense that they have their headquarters and main history in Sweden. They are also international when they have well-developed global linkages. They employ thousands and are responsible for developing polluting products in mass. They are also "owned" by another organization, implying that they are in a sandwich situation between several key stakeholders. Duni was at the time owned by two Swedish finance families, Bonnier and Wallenberg (this has changed since then); Husqvarna by Electrolux; and FMV is a public authority, reporting to the Swedish Armed Forces. These three organizations made selection-sense, but I did not want to leave GreenZone and the Green Guide out. They were examples of organizational greening that I knew fairly well. The selected organizations are presented below:
GreenZone and the Green Guide are projects where several firms are involved. They are therefore mentioned under the respective project. The different types of organizations, I believe, vouch for dynamic impressions of organizational greening. Continuing the discussion on case selection, each study is briefly accounted for below in order to give an overview of the empirical encounters.

**GreenZone**

In the middle of 1997 I overheard discussions about a local car-dealer interested in environmental issues. As the firm in which I was working at the time was considered somewhat of a spearhead regarding greening processes, we got involved. The idea was radical and teasingly interesting. A new car-block (dealership, fuel-station, fast-food restaurant) based on the latest environmental technique would be developed. The plans were highflying. We were supposed to equip the employees with “sustainable thinking”. In June 2000 the facilities were inaugurated. There were few compromises from the original plan and I found myself following the process from the start, talking to actors within and outside the project. Friends often turned to me when curious about the project and I brought students to the facilities for study visits. I even decided to lease one of the cars powered by ethanol, which the car-dealer distributed.

I knew I had a lot of information about the project, although I had not approached it as a researcher in the beginning, but as a consultant and an interested by-stander. My access was good and after a year I started doing some formal interviews. It felt weird. A booked appointment, a tape-recorder and main questions prepared on paper. I also started collecting news articles about the project. I had a case study, which I thought I had formalized through some legitimated procedures. GreenZone was included in three research papers, where the first stressed the link between project work and the greening of industry
My argument was that greening processes were well suited for organizing in projects since the process would not be disturbed by established organizational traditions and habits. The second paper discussed the project from a Beckian view on the corporate milieu (Sandström, 2001a), whereas the third viewed GreenZone as a zone for civil entrepreneurship (Sandström & Wåhlin, 2002).

Table 4.1: Info-box GreenZone

| Number of visits: 30+ |
| Number of researchers: 1 |
| Number of interviewees: 10 |

The Green Guide

In 1997, still working at the firm, I was approached by a representative of the municipality of Sorsele, a small rural community west of Umeå. Together with a neighboring municipality they were developing an application to raise funds for a project, the Green Guide (Miljövisaren). The project aimed to assist small firms with environmental management issues. They asked me to participate as an instructor and as a reference in the application. I was at the time entering the university and the idea of me evaluating the project was also discussed. The project started and I was responsible for two seminars. I also received funds from Uminova, a bridging organization between Umeå University and the regional business community, to evaluate the project. My role was to play both an insider and an outsider, and throughout the project a mix of methods was used: interviews, observations, simple and open questionnaires, seminars/discussions, telephone conferences and informal chats. Eight managers from participating organizations were interviewed. The project was closed in summer 2000 and I finished my report some months after (Sandström, 2000, listed under the Green Guide). The report constituted the base for the Green Guide account in this study. I included the Green Guide in two research papers, where the first was the Beckian paper referred to earlier (Sandström, 2001a). The second discussed the firms and their region in regard to the mainstream, often large-firms centered, approach to environmental management (Sandström, 2002a).

Table 4.2: Info-box Green Guide

| Number of visits: 5 |
| Number of researchers: 1 |
| Number of interviewees: 13 |
In 1999 I had contemplated which type of organizations (or cases) to include in the study. The research group I was a part of at our department had an interest in project management and product development. Attention was therefore directed to large firms' environmental and project work. Large firms, especially transnational corporations, are often singled out by environmental critics as especially environmentally destructive actors and powerful representatives of contemporary developments. This means that they are easy targets in the environmental debate, which is one reason for their attractiveness as objects of study. I initially became interested in one of them, the Swedish firm Electrolux. The first step was an interview with a senior manager at environmental affairs in May 1999, which ended with a recommendation to focus on one of their subsidiaries, another well-known Swedish firm, Husqvarna. After the first contact with Husqvarna, they worked out an interview-schedule, which I followed together with three other colleagues. This was in September 1999 and it felt more like the set-up I thought my research would have. I would prepare the interviews, fly to Jönköping, gather my material and head back home to write my report.

In the Husqvarna study, my three colleagues accompanied me at the first and fourth visit. One colleague followed for the second visit. In total we met twelve different people working foremost with R&D, project management and environmental issues, but we also met a purchaser and two product managers. I did most interviews myself and Husqvarna was included in three research papers (Blomquist & Sandström, 2001, 2002; Sandström, 2001c). In all of them, Husqvarna and Duni (presented below) constituted the empirical parts and the papers linked the firms' views on product development and project work to environmental matters. The discussions also focused on comparing the two firms.

<table>
<thead>
<tr>
<th>Table 4.3: Info-box Husqvarna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of visits: 5</td>
</tr>
<tr>
<td>Number of researchers: 4</td>
</tr>
<tr>
<td>Number of interviewees: 12</td>
</tr>
</tbody>
</table>

More cases alongside Husqvarna were needed. By coincidence, my supervisor, coming back from a trip, said he had been sitting next to a representative from Duni, a firm on the Swedish west coast producing disposable products for the laid table. She would send some material about their environmental work and offered to be of assistance if we were interested in visiting. The papers came and we took up the offer. Duni was also a target in the environmental debate as they, in some actors' views, represented a consumer mentality. Having a slight sense of
logistics, the trip to Jönköping/Husqvarna was extended to include Halmstad too. At Duni, I, accompanied by a colleague, initially met up with one laboratory manager and one product manager. The firm was similarly sized to Husqvarna in terms of employees and turnover. They also had people designated to work with product development and environmental matters. They were a very positive group to visit. By September 1999 I had two inspiring cases to work with. Duni was, as mentioned, included in three research papers.

<table>
<thead>
<tr>
<th>Table 4.4: Info-box Duni</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of visits: 3</td>
</tr>
<tr>
<td>Number of researchers: 2</td>
</tr>
<tr>
<td>Number of interviewees: 11</td>
</tr>
</tbody>
</table>

**FMV**

After initiating the studies of Husqvarna and Duni, the emerging strategy of the three cases was about to be realized. I thought about playing down GreenZone and the Green Guide, as they obviously were quite different compared to the large multinational organizations of Husqvarna and Duni. A third large organization was searched for. Similar size, interesting products and good access constituted the criteria. Some of my close colleagues had earlier conducted an evaluation of the Swedish fighter aircraft project, JAS, and they had therefore established some contacts at the Swedish Defense Materiel Administration (FMV). After the first call, they sent some material and together with three colleagues we met two FMV representatives in May 2000. They also had "studyable" product development and environmental segments in their organization. Besides meeting some of the environmental staff I also met up with two project managers representing a new corvette and a new submarine. FMV employed in the thousands and although their turnover was high, around 20 billion SEK, this was, I thought, my third case. At the subsequent three visits at FMV I was alone. FMV's environmental work has been discussed in one research paper (Sandström, 2002b).

<table>
<thead>
<tr>
<th>Table 4.5: Info-box FMV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of visits: 4</td>
</tr>
<tr>
<td>Number of researchers: 4</td>
</tr>
<tr>
<td>Number of interviewees: 6</td>
</tr>
</tbody>
</table>

This was a short presentation of the case selection, as well as the case studies per se. The table below summarizes the quantified information from the five info-boxes:
Table 4.6: Info-box - all boxes included

<table>
<thead>
<tr>
<th>Number of:</th>
<th>Visits</th>
<th>Researchers</th>
<th>Interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>GreenZone</td>
<td>30+</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Green Guide</td>
<td>5</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Husqvarna</td>
<td>5</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Duni</td>
<td>3</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>FMV</td>
<td>4</td>
<td>4</td>
<td>6 / 52</td>
</tr>
</tbody>
</table>

Believing that the big three would constitute my empirical part made case selection sense. There was, though, no question about which cases I knew better. They were the two local projects and they were interesting examples of organizational greening. The five cases were also not as scattered as they first seemed to be. It was rather that the three large organizations had less in common than expected and that the two projects had more in common with the large ones than expected. They all shared common ground in that they had all tried to, with environmental issues in mind develop new innovations (products, markets, management systems, etc.) in order to meet an uncertain future. The focuses on dealing with the environment in their business and product development put them in the same boat.

Also, the cases all had some kind of environmental work. This, however, does not make the population from which cases might be drawn that much smaller. Many organizations have some kind of approach to greening, especially in Sweden, since there are pressures to deal with them from a range of stakeholders, not least from legislators. There are, however, different degrees of commitment to greening and I was interested in those explicitly claiming to be working with environmental matters. This meant that I might have ended up with greener organizations in terms of resources spent on working with the issues, than I otherwise would have been. Organizations not explicitly communicating their environmental work in reports, homepages, through labels, and so on, were, hence, not considered. This means that only one part of the circle is approached empirically. But there is still diversity among the cases, rendering in different positions in the circle being occupied.

The cases, as noted, had a business and product development focus. This was initially also a base for selection and there are several arguments for this. For instance, R&D work is a particularly interesting object of study in greening processes as it has been suggested that environmental issues will specifically affect an organization's R&D processes (c.f. Winn & Roome, 1993; Roome, 1994). The capacity for renewal, or entrepreneurship, is also one of the key aspects when trying to understand the development of an organization in general (Schumpeter, 1914/1971), as well as the process of identity construction in an organization (c.f. Buckler & Zien, 1996). In large firms, R&D departments supposedly house this capacity. If a firm's environmental work should be translated into new environmentally adapted products or services, it has to be
translated in the organization’s R&D work. One way of looking at this is to suggest that the impact of greening is evident from how it is treated in the R&D work, where organizational actors turn talk into action. From such a perspective, there are also opportunities to observe both talk and action (although talk also is action).

The figure below is an overview of the time frame in which the cases were conducted and the time aspect is important. The organizations are not the same at the time of this study’s publication as they were when I visited them. All organizations were also going through major reorganizations. GreenZone was a brand new concept with no real precursor. The firms in the Green Guide were more than before investing in their environmental work. Husqvarna, Duni and FMV were in a process of restructuring their organizations towards market and process orientation. Also, at Duni, since interviewing what I refer to as my three key respondents, one retired, another quit and a third got transferred within the organization. This complicated the feedback process, but it also indicated the time specificity of the empirical studies. Similar stories could be told in all cases, although Duni might be the most extreme example. Below is the case-race:

<table>
<thead>
<tr>
<th>GreenZone</th>
<th>The Green Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Husqvarna</td>
</tr>
<tr>
<td></td>
<td>Duni</td>
</tr>
<tr>
<td></td>
<td>FMV</td>
</tr>
</tbody>
</table>


Figure 4.2: A case-race

Field texts

The case studies are predominantly based on three sources: interviews, observations and secondary material. There are minor involvement of questionnaires and action research in the Green Guide project. Empirical material collected through either method is often referred to as data. This is an established term, in many instances used in a qualitative sense, but it is easily associated with an objective and static view of knowledge. I rather see the data as moving during the interviews and subsequent analyses. Following Clandinin & Connelly (1998, p 161): “What are normally called data - journal entries, field notes, photographs, and so on - are, for us, better thought of as field texts”. Field
texts are, though, not the only content of the empirical experiences since the scholar's memory carries other tacit elements as well. Van Maanen (1988, p 118; see also Latour, 1999, p 172) argues that: “Events and conversations of the past are forever being reinterpreted in light of new understandings and continuing dialogue with the studied”. I experienced this when writing the papers where the different cases were molded. The cases moved, and I with them, between the papers.

Interviews and observations

The in-depth and open interview could be perceived as an interactional event (Baker, 1997), or a social encounter, where information is not merely discovered or conveyed, but also constructed (Holstein & Gubrium, 1997). In this study’s encounters, reality was constructed and these constructions were based on several aspects. Baker (1997) advocates membership categorization devices when working with interview texts. She highlights three aspects: First, members (respondents) draw on their cultural knowledge in the interactions; second, the questions asked “are a central part of the data and cannot be viewed as neutral invitations to speak - rather, they shape how and as a member of which categories the respondents should speak”; and third, the responses are “treated as accounts more than reports - that is, they are understood as the work of accounting by a member of a category for activities attached to that category” (Baker, 1997, p 131).

Miller & Glassner (1997, p 101) also emphasize that respondents are influenced by cultural aspects: “what is always given is a trace of other things, not the thing – lived experience – itself”. Clandinin & Connelly (1998, p 169) state that “all field texts are constructed representations of experience”, which results in that “when we become characters in their stories, we change their stories”. The stories they tell are therefore not part of the organization’s talk, but performed for the benefit of an outsider (Gabriel, 2000, p 137). A warning has therefore been raised regarding the over-confidence in firsthand capturing actors’ experience, i.e. what Denzin & Lincoln (1998) refer to as the representation crisis. It also emphasizes that the encounter is a meeting of two cultures, the interviewer and the interviewee’s. In the encounters, the respondents draw on his or her professional role and I on my role as an academic scholar. As an example, in one of the cases, a key respondent clearly separated his stance on environmental issues while at the firm from that taken when spending leisure time together with his family in the woods. His answers to my questions were most likely taken from the firm-version.

The interviews conducted in this study ranged from 30 minutes to 3 hours. The majority was recorded on cassettes. I took notes on every occasion and within a maximum of four days, usually one or two, I listened to the interviews and made new notes. After this I started transcribing them, which at the most took weeks due to other events demanding attention. Two interviews were not
typed due to poor recording quality, of which one was probably more crucial than the other since it represented a larger share of the total amount of interviews conducted in that particular case. This respondent, however, gave a thorough feedback on my case draft, which might make the description actor-close anyway. The amount of transcribed interviews also meant that I had a large material from which to extract quotes. There is, though, a shortage of quotes in this study, which is explained further on.

Despite the fact that the interviews have been carried out in the field, at the studied actors’ home-courts, I do not claim to understand what the actors’ understand or that I have grasped the dynamics of their settings. I am not convinced either that I have met the actors in their natural settings. Sitting in their office might be their natural physical location when they are performing their profession, but it is not natural for a mechanical engineer to be interviewed by a social scientist, despite where the interview takes place.

Fieldwork is also an awkward term. Van Maanen (1988, p 2) defines it as an answer “to the question of how the understanding of others, close or distant, is achieved”, and such work “usually means living with and living like those who are studied”. In this sense, my fieldwork is superficial. I would have preferred a broader ethnographic approach where I first handedly experienced the organizational talk. Such a method is, though, more time and money consuming. You also have to have access. The case methodology adopted in this study has, however, brought me closer to the actors than I would otherwise have been. It would also have been difficult to get an insight into as many as five cases with a living-with approach. Hence, I have not been in the field long enough to thoroughly compare talk to action. My studies are predominantly snapshots of how of the actors were accounting for how their organizations were approaching greening at the time. The reader of this study ought to take this into account I have done this through, for instance, trying to be open in presenting the encounters.

Another aspect in the interview situation is self-presentation, which influences what is said and not. Miller & Glassner (1997) highlight trust, interest, confidentiality and not being judgmental as important aspects. They also state that: “An interviewer who presents him- or herself as either too deeply committed to those interests and that order, or as clearly outside of them, restricts which cultural stories interviewees may tell and how these will be told” (Miller & Glassner, 1997, p 104; see also Fontana & Frey, 1998). Clandinin & Connelly (1998, p 164) assert that the respondent’s way of telling his or her story “is also dependent upon how the individual is making sense of the researcher’s intentions and purposes”. In the encounters I tried to have a low key and was, as much as possible, quiet.

There were two areas of concern regarding how to present myself. The first one dealt with the fact that the majority of my interviewees, and of the employees in general, were engineers. With my background in social science studies, I acknowledged my lack of technical know-how on several occasions. For instance,
in the Husqvarna study, several technological lines of reasoning were pursued, many of which I did not had enough knowledge to follow. I did not try to straighten every question mark, which was evident when receiving the feedback on the Husqvarna description. The respondents had corrected technical terms, indicating my lack of vocabulary in the area. I did, however, ask "stupid" questions on occasion as the respondents got into their things. The opportunity to ask such questions was probably granted by my self-presentation, but it also constituted a barrier in the encounters. It made it harder to see things from their point of view.

Fontana & Frey (1998, p 68) emphasize the use of language as an aspect in creating a "sharedness of meanings", an encounter based on a mutual contextual understanding. The authors also stress nonverbal communication, such as looks, postures and silences. Altheide & Johnson (1998) mention unarticulated aspects too, such as pauses, humor and nuances. One way of dealing with this blurs together with my second worry. That is, the way environmentally concerned actors were met by industry. There is a stereotype, which mainly hovers around the tree-hugging environmental activist loaded with emotions about the environment's rights and industry's wrongs. I am concerned for the environment (and us), but emphasizing this might have made the respondents feel more accused than invited to share their views. I like to think that my environmental concern was more articulated through my vocabulary and pre-understanding of corporate environmental management. This might have created Fontana & Frey's sharedness of meaning, but how the interviewees perceived me is difficult to discuss. One example is accounted for below, though.

Denzin & Lincoln (1998, p 7) state that qualitative researchers are often called journalists and at one occasion, late in my empirical studies, I was compared to a journalist by one of my respondents. My first impression was that he thought I was searching for some juicy information, or a scoop, that would make my study interesting. I also felt that he did not think I was focusing on the right things. I sensed that he thought I was not objective enough, which probably resulted in restricting the information shared. When running this over in my head, however, I became less disturbed by the comparison. It surely said something about me, my research topic's fuzziness and my methodology, but it also confirmed my impression of him. If given permission, he would probably have written my text. But sure enough, many social scientists have things in common with journalists as we critically investigate our contemporary society. Two differences are, though, the types of texts we write and the methods we use.

Within each case, there were also one or two persons who became a door in for me. In GreenZone and the Green Guide I personally knew two or more of the insiders. This gave me good access. In the three large organizations, the situation was different. In retrospect, there were at all sites someone who more or less took responsibility for taking care of the outsider/s. Fontana & Frey (1998, p 59) point out that: "The researcher must find an insider, a member of the group studied, willing to be an informant and to act as a guide to and
translator of cultural mores and, at times, jargon or language”. The small talk conducted with the insiders during coffee, lunch, walks between offices and telephone calls was important in understanding the setting. As will be noted in especially the Husqvarna and Duni descriptions, however, I did not manage to account for this. This since I thought the texts had to be conformed and formalized according to a descriptive and almost objective type of writing (discussed further on).

Beside interviews, observations are also a part of the field texts. The main observations have been conducted during both formal and informal interviews. Interviews and observations are, however, difficult to separate, at least from the interview perspective, i.e. it is difficult not to observe while interviewing. Observation is, at least in theory, non-intervening, but “many of the data gathered in participant observation come from informal interviewing in the field” (Fontana & Frey, 1998, p 56). The systematic and purposive nature (Adler & Adler, 1998, p 80) of my observations was low in the beginning, but increased with time. Examples of observations were the museum-tour at Husqvarna, the bus-trip and the final meeting in the Green Guide project (accounted for in the respective case).

Interviews and observations are two ways of interacting with the members of the organization. A third actor constructing reality is written (digital and on paper) official material, such as annual and environmental reports, product catalogues and homepages. Altheide & Johnson (1998, p 297) argue that it is not enough to capture the members’ words alone, because if “it were, ethnography would be replaced by interviews”. Hodder (1998, p 113) claims that saying and doing is often very different, and that a full analysis cannot be restricted to interviews. Such an analysis should also consider “material traces”.

Annual and environmental reports

There are ways in which organizations represent themselves and it is important “that our understanding of contemporary society – whether our own near-at-hand, or one to which we are strange and distant – incorporate those processes and products of self-description” (Atkinson & Coffey, 1997, p 45). White & Hanson (2002) argue that these reports are flexible enough to be used in different contexts, but also robust enough in terms of conveying the organization’s identity. Atkinson & Coffey also claim that audit is a particular trait in the construction of annual and environmental reports. Audit could also be seen as a sign of a larger self-reflexive and accountability driven organizational context (c.f. Beck et al, 1994). There are demands on an organization to maintain documents that are open to public scrutiny and also to conform to standardized conventions, or restricted codes, of how a certain document should look like. About the authors of such reports, Atkinson & Coffey (1997, p 54) claim that: “He or she can often draw upon a stock of well-established and well-understood phrases and
expressions. In that sense, such a genre constitutes a kind of restricted code, defined in terms of limited possibilities of choice and combination in composition.”

In other words, an annual report has to conform to the genre of annual reports and the genre is constantly moving. Atkinson & Coffey (1997, p 47), however, point out that annual reports are not “transparent representations of organizational routines, decision-making processes or professional diagnoses”. They are rather framing the organization’s historical performance, speculating on the organization’s future, indicating management’s capability, playing a part in the competition with other firms, and justifying and legitimating the organization to stakeholders. They are probably also the most visible documents originating from the organization. For a researcher they constitute an accessible unobtrusive measure, as they are not particularly written for an academic audience.

The second material trace is the corporate environmental report (CER). It is a recent phenomenon, which is noted by the responses from the research community (c.f. Ball, 2000; Noci, 2000; Kolk et al, 2001; Niskanen & Nieminen, 2001; Wheeler & Elkington, 2001). Among the organizations in this study, the first environmental report was produced in 1995 (Duni), but with a global perspective there are organizations developing such a report already in the late 1980s, such as Polaroid. Sastry et al (1999, p 19), in their study of environmental reports from another early mover, the American chemical firm Monsanto, noted the trend: “The report itself grew in size almost threefold, from 319 sentences in 1994 to 940 two years later”. In Sweden this trend has been enforced by a new paragraph in the legislation concerning annual reports, arguing that every annual report should also include a statement about the firm’s environmental status.

There are, of course, differences between an annual report and a CER. Besides the focus on different issues, there is also a stylistic difference. As Sastry et al (1999, p 9) noted in the case of Monsanto: “While we cannot assume that CERs are free of the biases observed in annual reports [---] we note that CERs are less stylized and less conventional than annual reports, reflecting institutional ambiguity and a lack of shared standards”. With a simple comparison between an annual report and a CER, the language in the CER could be considered more imaginary and literary than the annual report’s often strictly business-oriented language. However, the information in the CER is not less useful. On the contrary, the information might even provide a better and more personal understanding when the report is not guided by any shared standards, yet. The CER plays a part in the firm’s identity construction as it touches on a wide range of aspects in the environmental work, such as ideas, themes, changing boundaries and external actors.

In this study, the three large organizations (Duni, FMV and Husqvarna/Electrolux) continuously develop extensive official reports. Their reports are specifically targeted in this study. The annual reports are established since long, but the analysis is limited to 1989/1990-1998/1999. Their CERs are still in their cradle, though, resulting in all CERs up to 1998/1999, depending on case, are considered. During the completion of this study there have been several
new reports from these organizations, but I have only studied those available at the time of my visits, as they are the ones that should be weighed in together with the interviews and observations.

Photographs

A third material trace, predominantly used in the account of GreenZone, is the photograph. The pictures from GreenZone were taken by the construction firm’s site-manager and downloaded from the firm’s homepage with oral permission from the firm. There were also a couple of images in the account of FMV, sent to me by my respondents to be used in the account. The reason for including photographs was simply to widen the perspectives in these accounts, or “to make kinds of statements that cannot be made by words” (Harper, 1998, p 147). The photos are not perceived as some truth-revealing mechanism, as might be the case in a strict modernistic framework. They are rather constructions that provide an additional view of reality (Harper, 1998). In the GreenZone case, I am trying to explain how the facilities evolved. Pictures are helpful in this case as they invite other senses in the “reading” process. In the FMV case, I write about two product development projects where the products are fairly odd. The pictures serve to calm any eventual curiosity (I was curious).

Writing and representing the cases

Denzin (1998, p 317) argues that: “Field-workers can neither make sense of nor understand what has been learned until they sit down and write the interpretive text, telling the story first to themselves and then to their significant others, and then to the public”. Richardson (1998, p 345) also captures the experience of this study when claiming that “writing is not just a mopping-up activity at the end of a research project”, but “also a way of ‘knowing’ - a method of discovery and analysis” (see also Becker, 1986; Wolcott, 1990; King, 2000). It seems as if thoughts and ideas do not become real until they are typed. To my disappointment at some occasions and to my joy at others, they confirm my becoming way of thinking by transforming while writing.

One issue that demanded attention in this transformation process was how the cases should be written, which was linked to how the respondents should be represented and accounted for. A postmodernist writes multi-vocal texts. Respondents are given space through, for instance, quotes in the field text and an opportunity to influence early versions. They are thereby granted voices, although maybe marginalized voices, in the text. This might still be a sign of a more democratic form of communication in scientific work (Hamilton, 1998, p 127). It is hard to get around, though, that the author sets the agenda. Clandinin & Connelly (1998, p 172) call this a matter “of living on a knife edge as one struggles to express one’s own voice in the midst of an inquiry designed to capture the participants’ experience and represent their voices, all while
attempting to create a research text that will speak to, and reflect upon, the audience's voices" (see also Altheide & Johnson, 1998). Czarniawska (1999, p 107) explains that:

Once it is clear to both authors and readers that our dialog is fictive, we can go further and admit that it can never be a democratic dialog on equal grounds. The author always has an initial advantage over the 'other' voices; the centripetal moves are the authorial device. But this does not mean that we cannot make centrifugal moves, even to the point of quarrelling with these voices if necessary: glossing over paradoxes, otherness, and conflict serves no one. Nor does it mean that the author always wins: a reader might decide otherwise, handling the laurel to the author's creation.

One particular style of accounting for empirical studies is debated in a growing stock of literature on narratives and storytelling (c.f. Czarniawska, 1999; Gabriel, 2000; Boje, 2001). Temporal consensus also needs small and local stories and narratives (Tsoukas, 1992). Following a postmodern approach, as expressed in Denzin & Lincoln's (1998, p 22) fifth moment, the "search for grand narratives will be replaced by more local, small-scale theories fitted to specific problems and specific situations". My view is that the cases in this study are local narratives. They show that although they are part of a larger settlement, their approaches to greening are contextually and time specific. Van Maanen (1988, p 8) writes about writing tales, a term used to stress the "representational qualities of all fieldwork writing" as well as "to draw attention to the inherent story-like character of fieldwork accounts, and to the inevitable choices made by an author when composing an ethnographic work". He singles out three types of tales: the realist, the confessional and the impressionist tale. In the realist tale the fieldworker adopts a passive stance, or an institutional voice, where self-reflection and doubt are sidelined: "Thus realist tales swallow up the fieldworker, and by convention the text focuses almost solely on the sayings, doings, and supposed thinkings of the people studied" (Van Maanen, 1988, p 47). The tale is written based on the fieldworker's interests and categories. One interpretation is pursued and the text is built in order to support it, suffocating other meanings and interpretations. In the confessional tale, the emphasis is reversed:

Often the ethnographer mentions personal biases, character flaws, or bad habits as a way of building an ironic self-portrait with which the readers can identify (See, I'm just like you, full of human foibles). The omnipotent tone of realism gives way to the modest, unassuming style of one struggling to piece together something reasonably coherent out of displays of initial disorder, doubt, and difficulty. (Van Maanen, 1988, p 75)

Such a view presupposes a view of researchers as an elite, beyond regular persons. In this sense, it has an elitist bias. But the confessional tale is also a reaction to a view on researchers as superior actors in knowledge creation. It is, hence, a way to criticize an established view on science. I have chosen to
interpret it as such. The third type, the impressionist tale, is to my reading the most postmodern type. It draws inspiration from the impressionist painters, striving "to capture a worldly scene in a special instant or moment of time" and "its presumably out of the ordinary or unique character" (Van Maanen, 1988, p 102). Both the fieldworker and the objects of study's cultures are open for examination. Interpretations are peripherized in favor of the story and the reader is invited to relive the tale. Truths and accuracy are not central to the audience. The matter is instead whether or not the tale is believable: "The standards are largely those of interest (does it attract?), coherence (does it hang together?), and fidelity (does it seem true?)" (Van Maanen, 1988, p 105).

Of course, there are other tales, such as the critical tale where writers "make it clear just who they think owns and operates the tools of reality production", and the literary tale, which "combine a reporter's sense of what is noteworthy (newsworthy) with a novelist's sense of narration" (Van Maanen, 1988, pp. 128, 132). The three tales discussed, however, illustrate the span of styles and they also assist in accounting for the field texts in this study.

The field texts in this study have been written in different styles to some extent. I repeat, the cases have been written in different styles. This has complicated the cross-case analysis (discussed further on), but it is also a reflection of the research process. The Husqvarna and Duni cases were initially written in a realist fashion, relying on how I thought it had to be done at the time. The first texts were packed with information, as I wanted to capture everything they had said. They were also structured according to categories developed by me, based more on the literature and the research interest than what my interviewees were sharing with me. My field texts also became boring when packaged in such a way and if I thought they were boring, what about any eventual readers? Respondents at Husqvarna and Duni, which were faced by the most descriptive field texts, tried to read them in order to give feedback. One R&D manager at Duni explained his approach to the text: "You know Johan, it is extensive and in English. I started out, but then I fell asleep." This was perhaps one of the most valuable feedbacks. It reminded me that the text should actually be read by someone, but who was my audience?

"All accounts are produced with some audience in mind", claim Altheide & Johnson (1998, p 306; see also Van Maanen, 1988; Manning & Cullum-Swan, 1998). Based on my style of writing, my audience was apparently the realist scientist, who, ironically, was not my collegial readers and just one part of the social science readers (Van Maanen, 1988, pp. 27-30). The Duni manager also illustrated that my respondents were more or less excluded, making practical implications of the study difficult. And what about those colleagues of mine whom eventually might loose interest in the middle of the study (not to say that they had an interest to begin with)? A different definition of the audience, where curious corporate managers and impressionist scholars were included, assisted in shaping the final text (Van Maanen, 1988, p 25). This also made communicating the experiences easier, without losing the way of knowing, or the concern "with
producing texts that explicate how we claim to know what we know” (Altheide & Johnson, 1998, p 306). This also fitted well with my research philosophy.

Pondering the Duni manager’s response, I contemplated alternatives and thought about those studies where stories were told and points made. For instance, within this book’s topic, efforts such as Schwartz (1997) where she used a drama metaphor to illustrate The Body Shop, Tarkett and Volvo’s environmental strategies, and Strannegård’s (1998) study of the environmental ideology at Electrolux in which he abandoned a traditional dissertation structure in favor of intertwining method/case/theory. My interpretation was that there was room for alternative approaches. I also contemplated the assumptions I reinforced through a realist style. Although such writings are useful in terms of amount of information, they have an impersonal and objective character. Richardson (1998, p 347) claims that: “One reason, then, that our texts are boring is that our sense of self is diminished as we are homogenized through professional socialization”. Denzin (1998, p 338) sees a new trend, though: “More than a few researchers expose their writerly selves in first-person accounts, and many are attempting to produce reader-friendly, multivoiced texts that speak to the worlds of lived experience”.

I felt as if I was disappearing in the text and, more importantly, the interviewees were boxed-in as anonymous truth-tellers speaking for the organization. Instead of realist dominance, I leaned towards the other extreme, the confessional. After all, it was only I visiting the organization at that particular time, reading that particular book, having these particular experiences. I really could not conclude anything from my encounters due to all the circumstances. This chapter as well as the chapter on research philosophy, has a confessional tone, a tone that to a certain degree belongs in a qualitative study. The question was, though, if it made the texts better. Denzin (1998, p 321) points out that “engaging or boring writing has more to do with the writer than with the paradigm or perspective that is employed”. The confessional lean, however, made me ponder the boring-issue, which might be the important thing in this context. It made me open to the impressionist tales’ sense of postmodernism, their open-endedness and non-exclusion. One stream of literature, following an impressionist style, is that within narrative and storytelling methodologies referenced earlier.

Narratives and stories - a perspective

Narratives, stories, antenarratives, proto-stories, and other concepts, are all part of this trend and different concepts tend to bump into each other. Beyond such conceptual quarrels is a message conveyed in several writings that storytelling is a reaction to the technocratic, unitary and scientific models of modern science: “Although stories simplify the world, and are therefore useful as guides for action, they simplify it less than the kind of formal models that used to be revered as genuine science” (Czarniawska, 1999, p 23). Gabriel (2000, p 15)
asserts that modernism still is dominating and that: “In all this, modernity does away with the art and craft of storytelling just as it deskills and destroys other old crafts. This is what I shall call ‘narrative deskillng’. Mass entertainment is then to storytelling what Fordism is to artisan craft.” A postmodern approach instead sees stories everywhere and attempts to mark impersonal spaces as human territory (Gabriel, 2000, p 57). Gabriel, however, also emphasizes that stories are not all there are. They are not the only narrative. There are also interpretations, arguments, reports, theories, opinions, protostories, and others, even though the story is central.

What are a story and a narrative then? Sköldberg (2001, p 379) criticized Gabriel on this matter, but sticking to a postmodern style, a pinpoint definition would contradict the points made by Gabriel. Still (I'll have a go), stories are the micro-level, or as close as we can come to others' experiences (Clandinin & Connelly, 1998, pp. 154-155). Stories are a door into organizational actors' experiences and the stories told “frequently moves beyond entertainment, seeking to educate, persuade, warn, reassure, justify, explain, and console” (Gabriel, 2000, p 32). Czarniawska (1999, p 19) even asserts that the main part of organizational learning takes place through storytelling (c.f. Buckler & Zien, 1996; Roddick, 2000, p 80). Narratives embrace stories, but could also include theories, clichés, statistics, and reports (Gabriel, 2000, p 5). Narratives are, to my reading, the binders, adding stories, theories and clichés in the process of “establishing connections between the exceptional and the ordinary” (Czarniawska, 1999, p 15). The cases in this study are narratives, but there are stories within each case.

The storytelling perspective was encountered late in the empirical studies, but it opened my eyes to the stories in the cases. It also pushed me into once more ponder their meaning. When retrospectively thinking about the stories, it was those I relied on when retelling the cases to colleagues. It was already a good way of accounting for the cases. The storytelling perspective also made me perceive my research project as a story to be told. Clandinin & Connelly (1998, p 161) claim that “we [researchers] also tell another kind of story; that is, we try to tell or represent the story of the research project”.

Writing the cases

When writing the cases, chronology was an important part of the structure. There are, however, as mentioned, differences between the accounts. In the Husqvarna and Duni texts, my pre-decided categories ruled the respondents' accounts. Those were the first cases completed and they have not been rewritten as much since the respondents had already gone through a feedback process. They are therefore more along the lines of the realist tale then the others. The respondents in all cases were usually involved in the texts through quotes, which were selected based on what the actors were emphasizing in the encounters as well as which impressions I chose to highlight. As I taped almost all interviews, there were
opportunities to use quotes. There are, however, less of those in some texts. The later in the process I wrote the case up and sent them out for feedback, the more quotes were integrated. Quotes are necessary, though, in order to demonstrate that actors have been heard. If neglected, there is a risk of leading instead of following the respondents. Feedback from them was one way of combating this risk.

Once a first draft was developed, I contacted my respondents and sent them the text. In the Husqvarna study they had several comments on the text of which some constituted basic errors in terms of wrong numbers, concepts and other factual misperceptions. These comments lifted the text positively, but there were also comments that were more related to who said what, making the feedback process a political venture too. There was an obvious strive to make Husqvarna look good, or monophonie (Boje, 2001, p 129), in my text. This moved the text towards a rhetorical device, or a PR report. It was not, however, their eagerness to influence quotes and other retellings that bothered me, but rather the ambition to come out as a united group of actors. They were not, but this is to a large extent left out in the text. The ethical responsibility towards the respondents took the upper hand.

The feedback process in the Duni study is the most troublesome of the five cases. I have not, mainly due to the personnel changes referred to earlier, received a revised version from them. I have received comments by phone as well as comments on an early two-page version of a description of Duni. This situation made me careful when writing this case and the credibility in this text ought to be lower than the other cases. They have not reflected on the text, which means that my voice is louder in this text. Still, the text is not based on make-up events, but on actual encounters!

In the FMV study, some of the respondents gave extensive comments of both factual and emotional characters, both negative and positive. These comments gave the text a new dimension in terms of an explicit co-authorship. Although I decided on a first draft structure and on which quotes to include, some of the respondents altered and developed their quotes. Some even remarked on my general use of language. I did not buy everything since the text had to fit in the overall picture, but it felt much better analyzing these parts of the case knowing better what they thought about it. The same could be said about GreenZone, where the founder of the project gave several useful comments digitally in the text.

The situation was different in the Green Guide since the first draft of the Green Guide account was a mere translation of the evaluation report. The project managers and the project owners had commented the Swedish report. One of the project managers also continuously constituted my link to the project and the participating firms. He explained that both the project owners and the financiers had expressed a particular satisfaction about the report. This made me skeptic since I did not know if they merely felt flattered by the account or if they thought that the account was a credible version of what had happened.
According to the project manager, the latter was the case, but that was his interpretation.

An aspect that cut across all cases is the translation from Swedish to English. All my respondents were native Swedes, but based on the feedback process, the majority seemed to cope well with the English language. Still, nuances and meanings may have been lost in the translations. My priority has, however, been on capturing meaning before correctness.

Towards a research text

Latour (1999, p 43) states that: “For the world to become knowable, it must become a laboratory”. When transforming live encounters, impressions, smells and looks into a research text, it feels as if simplicity and reduction take the upper hand. In the laboratory, pieces of reality are analyzed and linked to construct another reality. In this study, the situation is similar. Trying to follow a strict postmodern style would mean that all packaging of field texts into themes, patterns or categories is a terror attack on multivocality (Boje, 2001, p 11). Still, in a way, I find myself between Latour and Boje. In Boje’s spirit, the cases are their own theories and could stand alone. From Latour’s quote, the matter is derivation and linkages: How can I claim to know what I know? Showing the linkages (how it hang together) is basically what makes the path scientific I believe.

As the early discussion on postmodernism might have indicated, the analyses have not been entirely arbitrary and intuitive. A binding thread throughout the analyses is a further development of the model presented in the previous chapter (see figure 3:1). The model was based on three aspects: the worldview, the organizational actors and in practice, together constituting an approach. In the analyses of the cases, the three parts remains the core, but they are here dissected into key questions:

<table>
<thead>
<tr>
<th>In practice</th>
<th>Identity</th>
<th>Worldview</th>
</tr>
</thead>
<tbody>
<tr>
<td>What?</td>
<td>Who were they?</td>
<td>What did they believe/trust in?</td>
</tr>
<tr>
<td>How?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who?</td>
<td></td>
<td></td>
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</tbody>
</table>

Why?

Organizational approaches?

Figure 4.3: The focus in the analytical process

The first area, from the left in the figure, frames a practical interest in what the organizations did. Did they, for instance, implement EMSs, develop new and
environmentally sounder products, author new environmental policies, or educate their personnel? The interest also lay in how they were conducting their environmental activities. Did they make everybody in the organization work with the issues or did they, for instance, delegate the matters to a specific department or a specific group? In other words, this focus carried a descriptive ambition, mapping out the organizations’ practical aspects of their approaches. There is, though, a deeper interest on my behalf in going beyond the descriptive aspects. The how part of the practical level is a beginning, focusing on the ways the environmental work was carried out. Was it guided by strict procedures or played by ear from occasion to occasion, that is, an ad hoc way? What really sparked a continuance was the question of why they were greening. Which imperatives were identified? What were their driving forces? Did they focus on legislators, competitors, or was it the customer who steered the environmental work? Were they in it for the money, the glory or the self-satisfaction? The practical issues along with the driving forces are perhaps the most tangible parts of the organizations’ approaches. The matters are more intangible in the remaining parts.

The organizations’ identities were defined in the tensions between expectations from others, inside and outside the organization, and strivings for an own belonging. Did they seek the mainstream or did they mark their distance from it? How were they special in the greening process? What made them what they were? Did they reflect on their role in the greening processes? Did they perceive themselves as fully attributed with agency or as a brick in the game, not being able to change the way things developed? Questions such as these helped framing the tensions in which the organizational identities were constructed.

The last worry in the analyses focused on what the organizations believed or trusted in. These are matters of ontology and epistemology, how nature, society and the organization were perceived and integrated in their approach to greening. Which assumptions on the organizations’ relations to the environment did the organizations uphold? How did they perceive their organization in the process? What type of knowledge did they trust and how was this knowledge constructed? There were prejudices on my behalf that held my respondents as fairly uninterested in discussing issues such as these. Due to other circumstances as well, such as the limited time made accessible in the empirical encounters, I did not ask straight out about these more philosophical matters, but I jumped to the occasion when invited. The answers to these questions, however, were therefore, more than in the other areas, drawn from answers to other questions.

The questions where and when are not made explicit in the figure above, and maybe they should be. However, I consider those as practical questions answered in the presenting of the cases. They are also to some extent integrated into the practical side of the figure. When, though, is also sidelined since I did not conduct longitudinal studies of all cases. The encounters were snapshots rather than experienced from a living-with approach.

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The process of analyzing the cases consists of predominantly four steps. The glue holding these steps together is the research questions posed in chapter one and the questions in the figure on the focuses in the analytical process (figure 4.3). The latter figure is the bridge throughout the analyses. The questions asked in the figure have been posed and answered each step of the way. As will be illustrated further on, the aim in the analyses has also been to keep the empirical encounters and the theoretical framework separated at particular steps. But a reservation is due here: it is basically impossible to separate what is entirely influenced by theory and what is guided by the empirical encounters (it is a continuous data-making). Still, the ambition has been to keep them apart during some stages. In chapter three, theory was supposed to stand alone. Chapters five to ten were supposed to involve the empirical encounters only. In short, the analytical process took the analysis from the within-case discussions, directly following each case study, through the cross-case analysis, into a dialogue with theory. In the last step of the process, an alternative approach was singled out.

The within-case analyses

The first step, following the first research question on organizational characteristics, was based on an empirically close reading of the cases. Following each case account, there was a brief within-case analysis. These analyses, labeled discussions in the text, pondered the impressions from each case in order to bridge them to the cross-case analysis. The analyses took a grounded approach to the accounts, which were made possible due to three reasons. First, each case was not more comprehensive than allowing analyses “by hand”. There was little need to integrate a computer-based system, such as NUD*IST. Each case consisted of, at the most, thirteen interviews, of which some were fairly short, together with secondary material, such as annual and environmental reports. Second, the cases were only to a small extent conducted parallel in time. This meant that there was continuously time to reflect upon and get to know each case. I could take notes, discuss with colleagues and make conclusions as they arrived. For instance, all fieldwork in the Husqvarna and Duni cases were finished before I really got into the FMV study. Third, the cases have been continuously analyzed through the research papers I have written. Each paper resulted in a closer understanding of the cases.

This method might sound arbitrary and there is an element of vagueness around this stage when the analytical work is mainly left to the writer’s experience (Clandinin & Connelly, 1998, p 171). I basically searched for meaning and understanding. I did not search for explanations and causality, claiming that A leads to B. The effort was rather to see how A and B together created meaning. Gabriel (2000, p 43) refers to such analyses as poetic interpretations, in which the storyteller is allowed to link events with desires, constructing them in a meaningful way (see also Manning & Cullum-Swan, 1998). Gabriel (2000, p 4) also asserts that: “It is for the pedant or the unreconstructed positivist to
question poetic licence, seeking to convert storytelling into testimony” (see also Czarniawska, 1999). The poetic interpretations are then complimented by analytic interpretations, asking why the poetic interpretations are meaningful and “whether they possess a deeper layer of significance” (Gabriel, 2000, p 43). This study’s analytical process begins with the within-case analyses and ends with a theoretical emphasis. In Gabriel’s terminology, the interpretations go from poetic to analytic. In the last chapter, however, poetics return to some extent.

The cross-case analysis

The cross-case analysis, also following the first research question, attempted to make sense of the empirical encounters. The matter was about linkages between the cases, between how the organizations approached greening and how their experiences could work off each other towards new constructions. The interest, as illustrated by the questions in figure 4.3, lay in finding similarities and differences from what were done in practice to how they viewed the environment, from greening in practice to assumptions on greening. In this way, some characteristics proved to be similar between the cases while different in others. The starting point was, however, whether any characteristics bound them together and whether they were possible to categorize.

At the outset of the cross-case chapter, each case’s characteristics were reviewed though the four focuses, resulting in a set of key attributes for each case. They constituted summaries of each within-case analysis. From such a platform, it was evident that particular characteristics cut across the cases. This made new main categories more justice to the cases and more representative to the impressions of the cases. It should be emphasized, however, that the categories were grounded in the cases and not intentionally influenced by theory. Creating the categories did not mean that the cases were stuffed into the same box either. Each category included tensions, but the common denominator was the attention assigned to that particular area. One example is the focus on environmental legislation. It was a driving force and a stakeholder in all cases (one of the areas in figure 4.3), and even though there was one type of approach permeating the cases, there were nuances and tensions between them. Environmental legislation was still a main category.

Philosophy and theory enter again - answering the questions

The next step housed the first research question, but it also reconnected to the second question on developing the conceptual base. Through bringing chapter two and three, the philosophical and theoretical frameworks, explicitly into the analysis, the cases were reviewed in a theoretical light. Could the main categories developed in the cross-case analysis be taken further through reflecting on potential links to theory? Were there more connections to be made? Was there, as Gabriel put it, a deeper layer of significance? How could theory contribute to
the understanding of the cases and what did the categories say about theory? In other words, the categories were perceived as invitations from the cases to ponder in a dialogue with theory. This also enabled a deeper search for characteristics of, as well as conceptual discussions on, organizational greening. The interpretations became more analytical and new labels for the categories were created out of this dialogue. Reflections on the category on environmental legislation, for instance, led to a new label, regulatory environmentalism, which was based on one of Hoffman’s (1997) historical periods. Having framed the cases, along with theory, into categories, there was also an ambition, following the third research question, to reflect further on those approaches encountered.

**An alternative approach**

One part of the scholar’s task is to go beyond established knowledge, to show that things are constructed and that there is room for alternative constructions (Czarniawska, 1999). This is not the task solemnly for this analytical step, but one of the aims throughout the study. However, this part of the analysis was explicitly designed to encourage reflexive dialogues between and among scholars and practitioners. It was a way to take the main analysis further, of continuing from the cross-case and theoretical moldings. This chapter explicitly answers the third research question on what might characterize alternative approaches to organizational greening. Seeds for this chapter were drawn from theory as well as from the cases. From the categorizing efforts in chapter ten and eleven, there were tensions between and within the cases. All of them could not be addressed, though, but some of them provided starting points for an alternative approach to greening, aiming to widen the approaches encountered in the cases. The figure below illustrates the way the analysis evolved (chapter numbers in parenthesis):

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**Figure 4.4: The analytical process**
Analyzing annual and environmental reports

Throughout the analyses, annual reports and CERs have also been targeted, but I have not been concerned with the quantitative aspects of the reports. This is mainly because such analyses tend to peripherize qualitative aspects, such as the context within which the report has meaning (Manning & Cullum-Swan, 1998). Instead, focus is laid on the more literary parts of the reports, such as the CEO or Director General's introductory and the accounts for each division's operations (c.f. Hanson et al, 1999; White & Hanson, 2002). Examples of questions pondered in the analyses of the reports are:

- What did the CEO or Director General state in his or her introductory?
- What examples of the organization's environmental work were accounted for?
- Were there any other mentions of environmental issues related to the organization?
- Where were the environmental connections located in the report?

What is printed in these reports has been carefully weighed by the organization. Thereby, despite all the rhetoric involved, the messages conveyed are to some extent the ways the organizations want to be identified by the readers. The reports are, hence, a part of the organization's identity construction. Next chapter presents the GreenZone case. It is the first out of the five cases.
5 GreenZone

In early 1997 the Carstedts family, operating a car dealership group in the north of Sweden, received an inquiry from Ford to take over the Ford dealership in Umeå. They already managed it in Örnsköldsvik and Lycksele. The proposal fell on Mr. Per Carstedt’s table and although Per was the main owner and a member of the firm’s board, his time had since the early 1990s mainly been spent on pursuing an interest in renewable fuels for transportation vehicles. He traveled the country lecturing about greening the car industry, specifically about switching to bio-alcohol fuels. Per had also, through the dealership in Örnsköldsvik, manifested his environmental interest in the family firm by importing a Ford model (the Ford Taurus), which was powered by bio-ethanol. Per had also played a part in realizing the first European built car powered by ethanol, the Ford Focus Flexifuel. This was, at the time, developed and introduced on the European market by the Ford organization.

Being responsible for the new dealership Per saw an opportunity to realize some of his visionary ideas on environmental motoring. He explored his ideas and during a seminar in the fall of 1997 Per met the architect Anders Nyquist, whose specialty was ecologically sound construction. As Per wanted an environmental profile for the Umeå dealership, he engaged in a discussion with Anders; expressing his ambition to in some way environmentally profile an existing facility. Anders did not object, sensing that Per’s environmental interest was more than superficial, but he asked Per where he was going with this. In Per’s words (recalled in a meeting in August 1998), Anders stated that “If you want to do this, you have to start with a carte blanche”. A carte blanche it became and between that meeting and June 2000, Per, Anders and others developed the GreenZone project. It became unique and something for the world to see. Below is one version of how it all happened.

The beginning

When meeting Anders, Per was lecturing about sustainable transportation and environmental problems. He argued that the environmental pressure on the car industry was immense. The transportation sector was singled out as the major villain in the environmental debate, especially regarding the greenhouse effect and its link to the use of fossil fuels. Figures flourishing in Per’s lectures indicated that transports alone stood for about 30 percent of the total global pollution. The pressure, especially from legislative actors, was tough, but it was argued that it should not solemnly be perceived as a threat but also as an opportunity. In a seminar in May 1999, Per elucidated the potential in this pressure through some examples. The environmental market had a turnover of almost 4000 billions Swedish crowns (SEK) each year and in California the environmental market was the second largest after the market for information technology. Also, at the time, 75 percent of the car was reusable, but it was estimated that in 2010 95 percent of
the car would be reusable. The number of vehicles sold worldwide, as well as pollution, was also increasing. An overhead transparency, later used in the environmental training in the project, showed that 500 millions cars consumed 780 000 millions liters of petrol each year. In 2020 the numbers of cars might be 1000 millions and the question was how many liters of fossil fuels they would use. On the project’s homepage (GreenZone, 2000), Per stated that:

A hundred years ago the Earth’s population was one and a half billion and around 15 percent lived in urban areas. Today, we are six billion people and half of us live in cities. The urban lifestyle of the western world retains its attraction and cities continue to grow. In fifty years we can expect the global population to be around ten billion with 70-75 percent living in cities. The number of vehicles is increasing at an even faster rate. These numbers are compelling. Our lifestyle is putting more and more pressure on the ecosystem we are totally dependent upon. In the end, our mistakes will be corrected by the forces of nature. We must adapt to the ecosystem, because the other way around is impossible.

Following the context painted above, environmentally profiled motoring is a topic for the future. It also means that there are particular business incentives in greening the industry. Per’s overall conclusion was that the transportation industry has to change its ways of operating. He also emphasized that it should be the actors working within the industry that should head this change process: “Who has the most to gain from greening the car industry? Well, those who work in it and depend on it everyday of course! If they do not do it, they have by far more to loose” (interview March 1999).

Developing the concept

In their discussions, Per started playing with the idea of building a new site from scratch, both regarding the physical facility as well as the staff working at the site. Anders’ initial advice on the physical facility was to get the right piece of land to build on, than the rest could be realized. The land therewith became a sticking point. In early 1997, the Ford dealership in Umeå was taken over and Carstedts rented a facility in an industrial area northeast of town to get it all started. At this time, Per had a tentative program regarding the staff at the site and he contacted Ola Borgernäs, who was responsible for education and training at Ford Sweden. The new dealership needed support for a new type of training, the personal mechanic concept, which was supposed to be implemented in the process. Per invited Ola to a dinner and introduced him to his ideas concerning the new dealership. Per explained that it was not supposed to be a traditional dealership. For Ola, this was exciting since he had been carrying ideas suitable for an organization starting for scratch himself.

The concept Per was developing mainly concerned the mechanical side of the dealership, dealing with customer needs of mechanical services. Normally, the mechanic is in the greasy room in the back. In the personal mechanic concept,
however, the mechanic is brought closer to the customer, as it usually is in the small workshops around the corner in the local neighborhoods. This way of working would now be applied in a larger workshop as well. It was also a matter of putting more credibility into the relationships with the customers. In the concept’s vision, a customer would get his or her own personal mechanic who they could call, ask questions and make appointments. Per wanted to hire Ola in order to implement and develop the concept. Ola later on also mentioned that his and Per’s visions met in a mutual faith in that the future of car dealing did not lie in car sales, but in car ownership. In a later interview (March 1999), Ola’s enthusiasm for the project was evident. His answer to the question about his view of the project rendered in almost six pages, thickly packed, without interruptions, when typed. Ola mainly got hooked to the personal mechanic concept and the basic values underlying it:

The car mechanic, that is somebody who works back there, in the backyard. They get their two-years training and starts working, and then they are worn out. That is how it works right? You can compare it to the mechanic arriving at work, hanging his head up along with his coat and then starts working. He do as he is told, does his services or whatever. Then, in the evening, he puts his head on again. Perhaps he study mathematics on a distance, he may be working with computers, advanced electronics, perhaps he is running a small business on the side or so. But there is no one at his work who demands that he performs such tasks at work, no one has ever questioned it. You just do your work here. Personal development among car mechanics has never been encouraged either, which is why they have had no reason to show their competencies. I think that in the car industry, at least from my experiences, training has been seen as a kind of encouragement for the employee. ‘He has been working with us for two years now, he has been good, let us send him to a training in Stockholm and he will learn something about cars.’ It is wrong somewhere. I have carried these questions with me and I have always wanted to do something starting from the individual instead, the single individual, and really grasp his capacity, his potential to develop, and really do something about it.

In an interview with Per, he gave his view on the ideas exchanged with Ola, especially their mutual concern with the shift from car sales to car ownership in which the personal mechanic concept became a key:

The future is uncertain when it comes to car sales, but ownership is always local. Service... personal relations... You have to have competent and good people who know what they are doing, and the focus has to be on the co-worker and on good professional workers. When you buy a vehicle from us you get a personal mechanic. We have to combine the personal relation you have with “Bob on the corner”. It is just that now Bob works on Carstedts. We have to put trust in people. These are people [the mechanics] who borrow a million crowns and pay rent to live in a house, so they know about responsibility. You have to give them the possibilities and the environment to develop.

The possibility to participate in the ongoing project of developing the “neglected mechanic” was one reason for Ola’s enthusiasm. A second factor was the
skeptical view of the car industry in general. It was often seen as dirty where salespersons and mechanics conspire in order to make a little more money from the car buyer/owner. The media sometimes presented cases where someone had been tricked and the image of the smooth but greedy used-cars salesman was reinforced in the public eye. Ola said that, of course, there was some truth to this, but that it was just another reason to pursue the concept. Speaking for the industry as such, he stated that: “We want to show that we are better than that”. Ola also talked about the dinner he and Per had while visiting Umeå. Ola said about Per: “It was the first time I had ever heard, on the whole, that someone had a vision about a car dealership. Usually one starts the dealership and in the end try to make as much money as possible.” Per talked about bringing the service part of the dealership closer and he also elaborated on environmental issues. Ola listened and got hooked. The third factor was the environment and Ola claimed that:

I got terribly interested since I enjoy environmental issues myself. I have not worked with environmental issues actively, but I have been very active as a private person from the beginning to the end. I have been a bit odd in that sense. Parallel to my engagement in cars, I have, among other things, been a field biologist and it is possible to combine, even though it is basically an impossible combination. There is a conflict. It is the same conflict as when we are selling cars that strains the environment, parallel to talking about environmental issues and trying to better the situation.

Ola’s values matched the concept Per was developing and as Per’s environmental ideas not only needed new technology, but also active change agents throughout the dealership, even in the workshops, they all needed to participate. It would not work otherwise, Per emphasized. Per therefore throughout the project repeated that developing a new dealership according to their ideas was more a mental than a technological challenge, especially in this industry.

A project group for the construction process was at this time under formation. As Per’s basic idea about starting from scratch started to stick on the others, there was a phase where roles were allocated. Per took on a more strategic position and had earlier approached Ola with the offer of being the managing director for the new dealership. Ola accepted the offer. Anders was already on board, as the one technically responsible for the GreenZone project. The technical side was conceptually separated from the development of the personal mechanic concept.

**Financing the project**

In September 1997, a project group had been formalized, but officially, the project was owned by Per’s own firm Ecosystem i Skandinavien AB. This meant that he set the parameters for the other actors to play within. Anders headed the technical aspects of the project work, though, as he was the architect in the
constellation. The group consisted of seven consultants, focusing on construction, electricity, soil and water/drainage, geo-science, and VVS. They were all supposed to work parallel throughout the project and not separately be engaged in each new phase of the project. The holistic aspects were dominating and as they all represented different areas of expertise, they were supposed to stay with the project from the cradle to the grave (figure of speak since a point with the project is that there is no grave). Staying together would also create a hinder for the concept not being watered down. It would also guarantee that the knowledge gathered in the project was absorbed.

The project group also played the part of the construction leader, which was decided upon since the group did not find anyone competent enough to lead such a construction process. Anders later stated on the project’s homepage (GreenZone, 2000) that: “The way we worked has been very significant, perhaps even decisive, in executing the project as intended”. Working together all the time also resulted in a prolonged pre-construction process, which was explained by the unique focus of the project. In a meeting with Ola in late autumn 1999 I needed feedback on my field notes before including the project in a research paper (Sandström, 2000). Ola drew a picture explaining the project’s process compared to a regular construction process:

![Diagram](image)

**Figure 5.1: The extension of the pre-construction phase in GreenZone**

The idea phase for GreenZone as a construction project was longer as the concept never had been realized before. It was not a standardized construction process where experiences from a range of similar projects could be drawn. It was also a matter of coordinating all actors in the idea phase, battling potential problems before instead of during the construction phase. What was interesting with the figure above was that they, according to Ola, probably had saved time in construction due to the holistic organizing strategy applied during the idea phase. In that sense, the construction phase in the figure above should be shorter compared to a regular project.

At the time of my autumn meeting with Ola, the project was well into the idea phase. Together with Per, Anders started applying for financial support to realize the project idea since it would be more expensive than a regular facility, built with mainstream construction methods. They sent one application for government support to Västerbotten’s County Administrative Board where it was
stated that Carstedts Bil in Umeå intended to completely change its operations in Umeå. New personnel would be hired, the firm’s environmental profile would be developed, the introduction of ethanol cars had already started, an extension and reconstruction of an establishment for cars was planned, and the personnel would be trained in environmental issues. Further, the municipality was already very interested, new knowledge would enter the region, new jobs would be created and the strain on the environment would be reduced. Was this something the government could consider to support financially? The municipality of Umeå was also parallel to this developing an application for governmental green money through the government’s Local Investment Program (LIP). The project was interesting and it would fit on the municipality’s list. In the description sent to the municipality from Anders, to be attached to the LIP application, the project’s main purposes were to:

• Reduce the environmental impact
• Render the energy use more effective
• Use natural resources more effective
• Stimulate the use of renewable resources
• Stimulate reuse and recycling
• Train the personnel in eco-cycle technique
• Stimulate exchange of experiences
• Try a new fee-system for energy and water together with the municipality
• Cooperate with Umeå University and Mitthögskolan in Östersund

The description also emphasized that there would be a positive effect on employment, as the construction process per se would generate job opportunities. Also, if the facilities were realized, additional personnel had to be hired at Carstedts. Despite its many proposed advantages, the LIP project did not result in any financial support, neither for Carstedts nor for the municipality. Carstedts was also removed from the list after the first feedback from the government since it was a private firm and thereby ran the risk of making the bases for competition a bit warped. A municipality, according to Swedish law, should not assist a single firm in anyway that places the firm in an advantageous position (see next case study on this issue too). The application to the government sent to the County Board was not successful either. When talking to the representative at the County handling the application, he said that they were positive to project, but when addressed at the governmental level, the project was considered as standing good chances of being profitable without any subsidiaries. With these letdowns, the project turned to other actors for financial resources (see further on). Basically, though, the financial situation was not so “talkable”.

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An attractive piece of land

Still in Autumn 1997, the planning continued and the project, which had no real name at the time, was given a piece of land close to the site that they were already renting. There were some problems with the land, though, as it was fairly small and a power line, hanging too low, would hinder the construction. They searched further and after some processing, the Swedish National Road Administration and the municipality of Umeå decided that the project could be allocated an attractive piece of land at the northern approach to the city along the main road, the E4. This was in September 1997 and since the discussions about this land were initiated, the plans of Per’s project became even more far-sighted. Remember that the land was a sticking point according to Anders, and the land was larger than expected and the location was very attractive, both from an environmental perspective (according to Anders) and from a business perspective. Why limit it to a car dealership only?

According to Per, his and Anders’ discussions about the environmental aspects of the project developed into an ambition to extend the facilities to an entire car-service block based on the latest and best possible environmental technique. “It felt totally right”, Per said in an interview in March 1999. Enthusiastically he continued: “We will influence the industry and the world, people will follow, and it will not be a museum”. In retrospect, the new piece of land became a turning point in the process. Per said that when they realized that the area was so large, they thought that through a car-service block, “we will have both the service and the support structure”. Both the car and the driver would be taken cared of within the facilities, which meant that with the land came an extension of the project.

Besides a car dealership, a car-service block consists of a fuel station and a fast food restaurant. After considering some alternatives, McDonald’s was invited to become the restaurant and Statoil the fuel station. Per claimed that McDonald’s was a better choice then, for instance, the local hamburger franchises MAX and Frasses. This as McDonald’s was a corporation that, in Per’s words, already had a very active and serious environmental program in Sweden. Their sheer size also opened up an opportunity for much greater impact on the international community than the other franchises. McDonald’s draws the public eye. Statoil emerged as an alternative to OK, a large Swedish fuel distributor, which also was the sole distributor of ethanol in Sweden at the time. Statoil, Per felt, gave the project a Scandinavian touch. This group of corporations, Ford, McDonald’s and Statoil, gave the project an international profile and with these actors on board, Per’s eager was contagious:

We want to be recognized in international media such as on CNN, Time Magazine, or why not a documentary on BBC. We want to set a world record! And everybody must do his or her best. It is the same motive as in the ethanol project - we have to adapt. We have to think globally but act locally, and the training that everybody gets is in order to equip the formula-one team with drivers.

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More actors involved

In March 1998 my former employer, Esam, made a first draft of the environmental training program, which the staff of the new facilities would go through. There was a meeting between Esam and Carstedts in August 1998, which I attended. Per started by describing the background of those targeted by the training: The average age was 27, everybody was new, no one had any real study habit and half of them were mechanics. Per wanted the employees to strive for some type of "environmental driving license" and they should understand their own and the car industry's influence on the environment. They should also be able to defend the future car industry, which was not the way the industry looked like at the time. Nobody should be able to work at the facilities without going through the environmental training, as everybody working there had to be environmental ambassadors.

The people at Esam suggested three days of training for each employee, spread over six half-days. The discussions would be divided into three levels: a global, an industry and an organizational level. Per was quick to point out that the main issue should be motoring, though, as an emphasis on the firm would be awkward when the firm only constituted a tool in the process. A core part of the trainings was the systemconditions developed by The Natural Step, reviewed earlier in this book. Per also mentioned that the system approach developed by the founder of TNS, Karl-Henrik Robért, was an eye-opener for him (c.f. Robért, 1992; 1994). The August-meeting, however, resulted in a revised version accepted in September 1998 and the environmental training started in spring 1999. Esam also became responsible for guiding the dealership towards a certification according to the environmental management system ISO 14001.

The university was also involved in the project. Ola gave two examples that had influenced the project (there were more examples they hinted). The first one was in 1998 when the project through a competition at the School of Design at Umeå University received the name GreenZone. The logo accompanying the name showed a road (asphalt) going through a large tree symbolizing that the project was on the way towards sustainability. The second example was when four international students from the School of Design helped the project group and Carstedts' car mechanics in designing the workshops. A third example, by the way, although not mentioned by Ola, is this study.

Per, relying on Anders's 30 years experiences of project management, early on realized the need to have the municipality on board and the response to GreenZone was positive. A representative at the environmental department said that they had tried to get something similar (a good environmental example) started for five years and now Per comes in and actually want to do this! Per was invited to address the politicians and I also invited the chairman of the municipality's technical committee, Christer Paulsson (a social democrat), to talk about GreenZone at a lecture/seminar for Baltic and Russian students at our
university in August 2000. He was one of the politicians who early on argued in favor of supporting the project. Christer mentioned the importance of Per's visionary driving force making him “very convincing" (in Christer's words).

In practice, the municipality not only took a part in granting the project the attractive piece of land. They also reduced the fee for connecting the facility to the municipal water system and developed a solution for how the traffic could easier integrate the site. The decision on the reduced fee became a matter of intense debate, as other local dealerships and the political opposition strongly opposed it. It would make the basis for competition askew, it was argued. The debate was even manifested in a legal process where the role of the municipality was questioned. The municipality was in the end, however, considered acting within their limits, although it had by then become a matter for the press.

Västerbottens Kuriren (VK) published articles on the topic in June, July and September 1999. VK's early article stated that: “A unique environmental site receives support. Carstedts receives a 500 000 crowns reduction on the fee for the connection to the drinking water system." Christer Paulsson was quoted saying that it was because their environmental profile was unique and therefore worth supporting. The opposition, through Lennart Degerliden (a liberal), argued that the reduction was a form of business support, which might make other dealerships a bit confused about the municipality's role. The issue was also highlighted in the July-article following the symbolic first dig with the spade. Here, two competitors were quoted criticizing the municipality's decision. One of them argued that it felt a bit askew to subsidize a business organization as it made competition unjust. The market forces were neglected, but the critic was also quick to emphasize that criticizing the project could easily be perceived as a critique of an environmental project. This was not his intention. No, the project per se was something spectacular and positive.

In the September article the legal process entered its second phase as six car dealers in Umeå appealed and took their case to the County Administrative Court. The topic was whether or not the reduction was a business support. Christer Paulsson, again, argued that the reduction was not a support as the municipality's costs were reduced when Carstedts would not use the municipal day and wastewater system. He was also quoted as having difficulties understanding the competition-argument presented by the other dealerships. "Carstedts have invested millions in this project", he stated, and "the day any other firm is prepared to make similarly unique environmental investments, then we will be ready to discuss their fees too”.

In May 1999 Per visited our business school to head a seminar on the GreenZone project, a project, he said, about making the future mobility sector sustainable. The external pressure, especially from legislative actors, was hard, but it should also be perceived as an opportunity and GreenZone was one way of grasping this opportunity. When revisiting my notes from this lecture, I had scribbled down that making money was not among the top priorities in the project. It came in fourth place on Per's list after the customers, employees and
the community. He emphasized that "it is not only about dollars and cents", although the audience also learned that in order to drive this process the market forces had to be integrated, as in the examples mentioned at the outset (California environmental market, car reusability, etc.). Greening the mobility sector was not only about technology, though, but "more a mental than a technical challenge". This also emphasized the emphasis on knowledge in the project. Per was, for instance, making tough demands on the contractors bidding to build the site: "They have to show me a plan of how the knowledge gained in GreenZone will be used in their organization. This is decisive factor in getting the job". In the end, Peab, a Swedish entrepreneur, got the assignment.

GreenZone is not a Rolls Royce

In his talk at our business school, Per compared GreenZone to other state-of-the-art projects through the metaphor of the Concept Car versus the Rolls Royce. When attending car shows around the world, scanning for the latest in car development, there were always the extreme niche car models, constructed on few compromises, Per said. Rolls Royce does not compromise when it comes to style and quality, or Ferrari when it comes to style and horsepower. However, at every show there were also models that did not aim at any specific target group. They were rather meant for everybody. Per referred to them as the Concept Cars. They were new and based on the latest technology, but still within reasonable borders. In this sense, GreenZone would not be a Rolls Royce, aimed for a selective few. It would be a Concept Site, a model for the masse. GreenZone would be the first one, paying a little extra as a first mover, but followers would not have to go through a similar development process.

Being a Concept Site meant combining things that had not been merged before, but this was a truth with modifications. The solutions applied in the project had been tried out before, although independent of each other. GreenZone was, however, the first time they were combined into one project, or one site, and there were many aspects and solutions integrated in GreenZone. Some of them are listed below:

- All material and energy are renewable or recyclable
- No nails have been used, only screws and bolts
- A dry building method (an open design, quickly covering the site with a roof, etc.)
- Heat recycling (heat-supply is reduced with 75 percent)
- Electricity use is reduced with 60 percent
- Lantern skylights (natural light)
- Living filters (tropical plants as purifiers and oxygen-adders)
- Green roofs (sedum tile roof as climate and surface water management system)
• Reinforced grass, i.e. flagstones with openings where grass can grow, around the facilities instead of asphalt. The grass takes care of the rainwater.
• An own waste water system (eco cycle system, reuses the water after purification), etc.

Constructing the site

In May 1999, I brought the tape recorder to Ola at the temporary facilities in Umeå to get his view on the development so far. We had met at several occasions before, but never under such formal circumstances. We sat down in one of the sales-persons’ room to conduct the interview. Ola hinted that they were a bit careful at the moment talking about the project because they planned to arrange a press conference in the middle of June. They eagerly wanted to tell people about the project, but they had agreed to meet the press at the same time. It was a pressured phase, as everybody at the firm knew that the project was developing and as their present premises were quite small, making them long for the new one. Ola said:

Within the firm you talk as much as you can about the progress of the project, even with pictures, as many as you can get, so they see where we are going, especially in regard to how this place [the temporary site] look like. I work with pictures a lot myself. I still feel that something is missing, though. If you read a newspaper, if we would go to the media now, then the employees would believe it more than if I told them, so editorial text is wonderful and also when there are pictures in the paper too.

Ola’s approach to present the project, with as many pictures as possible, was appealing and since Peab, the entrepreneur, had documented the construction process through continuously producing photos at their homepage (Peab, 2001), I followed the advice. Throughout the project, one of the most frequent reappearing images was the overhead sketch of the premises. It was already on display at the “old” site and would later appear in the local newspapers:
The overview shows the whole site, where the large building on the left, facing the pond, is the dealership. The T-formed building at the top right corner is the fuel station, and the lower right building is the restaurant. On the sketch, the E4 road is not visible, but it runs to the left of the facilities. The roundabout (bottom right corner) is a part of the municipality’s new traffic solutions to ease the expected traffic flow around the area. Opposite the site, across the road running at the bottom on the sketch, lays a very popular shopping precinct with well-established and branded firms in the areas of clothes, groceries, and audio and video. One of the government’s outlets for alcohol is also located in the precinct.

To give an overview of the site when it was completed, the pictures below show the dealership from the roundabout (on the left) and the whole site, although covered by a birch (Umeå is the city of birches), from the E4 road (on the right):

Things did not go from a potential construction site to a ready GreenZone over a day, though. The official start of the construction process might be referred to the next picture where representatives from Ford, McDonald’s, Statoil, the
municipality and Peab, together with Anders, Ola and Per cut the first sods. This was on the 30th of June 1999 and the local daily newspapers, Västerbottens Folkblad (VF) and Västerbottens Kuriren (VK), covered the event and published articles the following day. VK focused on the creation of new jobs and the debate on whether or not the municipality was interfering with the basis of fair competition. "Environmental building gives sixty new jobs", was their headline. Per was quoted saying: "We [the car industry] have not been role models in this area before, but now we want to show that problems could be perceived as challenges". A reader also finds out that the facilities were expected to inspire other actors, mainly through the three multinationals’ 50 000 other sites worldwide. GreenZone would also attract a million visitors each year. In VF’s account, the project per se was more in focus. Their headline was: "It is a unique environmental project", which was accompanied by the overview sketch of GreenZone, presented above. In the preamble it was also stated that this was no April fool’s joke. No, this was a world-unique environmental project. Per was quoted claiming that earlier it was about talking whereas now it was time for action.

![Picture 5.4: The first dig(s) with the spade(s). © Peab](image)

During the construction process, there were some obstacles to overcome for the project group and the entrepreneur. One example was when preparing the road between the dealership and the pond, there were trees blocking the original design of the road. Keeping with the environmental profile and with the ambition of maintaining biological diversity, the road was eventually re-drawn to some extent, as several pines housed an endangered beetle. One tree, though, an old oak, had to go, but after some consideration the tree was moved to a new location at the site (pictures below). It took three hours and the tree is now prospering in its new location:
Also, as the site would be based on the latest environmental technique, it was not possible to use nails in the construction work. Only solutions that were based on reusability would be applied. This meant that the workers had to use screws and bolts instead of nails. On January 17th 2000, VF ran a story about the carpenters’ working environment. As the carpenters were not allowed to use nails, the work became too monotonous and three of them developed so-called tennis-elbows. A Peab manager stated in the article that it surely was an unusual construction, but it was all worth it if it saved the environment. He was also quoted saying: “It has been a project without compromises and with exceptionally tough demands from the orderer”.

Well into the construction process, in the middle of winter, the facilities started to take shape. The building on the left-hand picture below shows one of the short sides of the dealership. Lantern skylights are visible on the roof, which in turn is covered with snow camouflaging the grass roof. Windows are also placed in order to maximize the natural light and heat intake. The picture on the right is from within the dealership and shows the car display room. The glass boxes were later placed just beneath the roof, housing the so-called living filters. The picture also shows the wooden constructions (glue-laminated wood) and the bolts holding them together:
The other two facilities, displayed in the pictures below, are the restaurant (McDonald’s) and the fuel station (Statoil). According to a statement by McDonald’s environmental manager in Sweden on the project’s homepage (GreenZone, 2000): “GreenZone means that we take yet another step in our environmental work and the restaurant here will function as reference for the future”. Also on the project’s homepage, Statoil’s station manager claimed that: “The difference between this station and our others is that we have taken even greater consideration of the environment instead of being satisfied with compliance to established norms”. The building they operate in is unique, but they have also focused on their product supply. He continued: “We have a larger selection of environmentally-labeled products than is normal but we do not try to tell our customers what they should buy”. The fuel station has also invested in an environmentally adapted car wash and also placed the ethanol pump (E85) closest to the register (the picture on the right, closest to the entrance), as it should be convenient for those driving the ethanol cars:

![Pictures 5.9 and 5.10: McDonald’s on the left and Statoil on the right. © Peab](image)

The facilities were opened in April 2000 and it was time to move in. Beforehand, Per had negotiated the contracts with the attendants and there were some special demands on Per’s behalf. The three attendants, Carstedts Bil (and thereby also Ford), McDonald’s and Statoil, had to agree to leave some control in Per’s hands. This resulted in the leasing contracts including a paragraph on a minimum of 16 hours environmental training for all personnel working in any of the firm’s facilities. The firms also had to implement an environmental management system within a certain time. Statoil had to supply ethanol and they all had to have plans on how to spread the environmental knowledge gathered in the project within their respective organization. There were, though, economic ties in the GreenZone project as the project was also co-financed by Ford, McDonald’s and Statoil. It has been appreciated that GreenZone was approximately 30 percent more expensive than an establishment built according to mainstream construction methods (c.f. VK 000125). Figures flourishing in media speculated on a total cost of about 80 million SEK. In VF’s article after the first dig with the
spade, it was mentioned that the participating firms together had invested between 60 and 70 million SEK.

The economics of it all changed the conditions for the firms operating at the site, however. Normally, the increase in investment (capital costs) would be too much for, at least, the dealership to endure. The rent would simply be too high. This led Per to decide that the rents should be comparable to the rest of the market. Carstedts Bil, for instance, therefore pays a similar rent as their competitors, but the question lingers: Who pays the difference? Well, Per expected to get a return on his investment from predominantly two sources: the reduced costs of running the facilities due to the environmental solutions implemented and through selling the knowledge gathered in the project. When talking about this, Per sensed that I, in my turn, sensed some naivety. He claimed that: "There are people in our society that demand implemented visions. Role models! This is going to be a state-of-the-art project, which is why you cannot compromise when it comes to knowledge. It will be more expensive, but…"

Per continued, explaining that the "environment must become opportunities, not problems". He also stated when speaking about environmental issues and the car industry that: "If I had worked as a stockbroker or in the capital industry, I would be classified as an insider". There was, hence, a particular trust in GreenZone paying off in other ways than through rent collection. Per also emphasized the potential in the Eastern hemisphere, especially China, as well as the Baltic region.

A curious reader might also wonder (at least I did) why the dealership in Örnsköldsvik was not targeted by Per's environmental interest. It was after all the family's traditional seat. During an informal chat, Per mentioned that implementing these ideas in the dealership in Örnsköldsvik, the family-darling since 50 years, would be difficult. The organization was established and Per argued that: "It is difficult to indulge in such a change process when moving a desk is revolution". Implementing GreenZone required a carte blanche on how the firm should look, but as GreenZone has been realized and visited by different representatives every week, Örnsköldsvik might become a future target. This because they have shown in Umeå that it could be done.

The 16th of June 2000 GreenZone was officially inaugurated and I visited the site several times after its inauguration. A chief mechanic is an old friend of my dad and we had lunch on a couple of occasions. I also had to do service and maintenance on my own ethanol Ford. I even convinced our department at the business school to lease an ethanol Ford from Carstedts instead of renting petrol cars to the left and right. I was obviously swept by the project's environmental force myself. Through my visits, it was also evident that there was a core of persons working at the site, but there was also a turnover in personnel. Reasons for this turnover were only left for speculation, but what was not speculated on was Carstedts' focus on showing that even a green establishment, such as GreenZone, could be a profitable enterprise. They had showed that it could be done in line with the latest environmental construction techniques, but it had to
make business sense too. This would be accomplished through pushing car sales and in the words of Ola: "Now, we have to sell cars like never before". According to a sales manager, however, this also meant promoting the Ford Focus Flexifuel before the "regular" Ford Focus. He stated that if a customer wanted a Focus, he strongly (although he used a stronger word than that) recommended he or she to buy the FFV.

At the time of this study, the dealership, according to the same sales manager, was well above average in terms of sales when compared to other Swedish Ford-dealers. It was also estimated that Carstedts had increased their market share in Umeå with 50 percent since GreenZone was built.

Discussion

The automobile industry is a controversial actor in the greening of industry. It is often framed as a major villain and in this project, one of the giants in the industry, Ford Motor Company, is involved. Their engagement in the FFVs and in GreenZone could be perceived as a genuine effort to take a step towards sustainability. It could also be an effort to control the speed and the content of yet another automobile infrastructure. This might result in an even more inert greening process, developed in such a pace that the last dollars from the existing system are extracted. Investing in ethanol-powered vehicles while increasing their sales of "regular" vehicles might be an awkward combination, an ethical paradox, and maybe even greenwashing.

GreenZone is a promoter of automobiles. Their sales have risen dramatically since the new establishment was up and running, and it is not only FFVs that are leaving the dealership. As one of the sales managers told me, however, if a customer wants a Ford Focus, he tells the customer that there is really nothing to ponder. He or she should buy the FFV Focus. Increasing car sales, a trend in Sweden on the whole, is not unproblematic, though. Also, with eyes directed to the developing world, as Per pointed out, a growing global population will most likely continue to demand cars as well as the freedom of mobility that comes with them. The question is, however, if the car itself is the subject matter? That is, if newer and better cars from an environmental point of view are a sticking point? It may be the use of the car per se that is a key to sustainability. Cars could in many cases be replaced by increased use of train and bicycle, to take two examples, especially in and around larger cities. Other examples would be videoconferences, telephone conferences and the Internet.

Ford and other manufacturers are at the time, maybe because of this, shifting their focus from the specific vehicle and thereby detaching themselves from a main part of the problem, to the role of creating new transportation systems. This was, for instance, together with an emphasis on "action now", the main point in Leif Johansson's (CEO of Volvo) speech at the 10th Greening of Industry conference in Gothenburg, June 2002. However, such a transformation of the role of these businesses would give them an even greater part in the
process. This also comes with both opportunities and threats. There are opportunities when the size and financial strength of these actors quickly could infuse less unsustainable solutions in their global networks. There are threats when these solutions might just as quickly become inert and leave us with the same problem we began with, that is, with a large, complex, corporate-dependent and environmentally destructive infrastructure.

Another actor enrolled to GreenZone is Statoil. From one view, their involvement is dubious. They are connected to this green site, committing to sell ethanol, installing a greener car wash and increasing their supply of eco-products in their shop. Parallel to this they are basing their main existence on distributing gasoline and diesel, i.e. fossil fuels. It is even in the name, Statoil. From another view, however, this is start and along with the third actor, McDonald’s, they have also committed to using GreenZone as a role model for future sites worldwide. Similar opportunities and threats could be emphasized as in Ford’s case, though. McDonald’s then, is often linked to a consumer mentality, a mentality identified as one of the core problems of the inefficient use of resources in the Western hemisphere. Other criticism coming McDonald’s way is based on the corporation’s growing influence over markets and society, a sort of homogenizing cultural and economic globalization. Their involvement in GreenZone makes the project team’s efforts skeptical to some extent, but as Per emphasized, choosing these TNCs was a deliberate strategy. Transnational firms get attention. Local and small firms do not.

Albeit the tensions arising from the actors involved, there were aspects of the project that would also charm the environmentalist. The discussion now turns to the questions focused in the analytical process.

**Greening in practice**

GreenZone was indeed a “green zone”, at least when judging from the concrete activities undertaken in the project. The site itself, with all its environmental ingredients (grass roof, living filter, water system, armed grass, no nails, heat recycling, etc.) probably constituted the most obvious green signs. There was, however, more than the building to the practical side of the project. The car dealer imported and distributed cars powered by ethanol, first the Taurus, then the Focus; implemented ISO 14001; hired and environmentally educated new personnel to work at the site; made demands on the constructor and the other participants to integrate the environmental knowledge shared in the project; developed new ways of organizing better suited for the issues dealt with; changed the way the mechanics worked in order to bring them closer to the customer; and even changed the municipality’s system for charging organizations for the use of the municipal water system. In other words, there were traces of greening all over the project.

The project could also be seen as divided into two parts, one technical and one mental. The mental elements hovered around Per’s vision of the project,
posing a challenge to the industry's conventional thinking about its relations to the environment. Per and other actors were continuously sharing information, attending/arranging seminars, arranging educational sessions, meeting the press, or in other ways inscribing the vision into the site. The technical part referred to the actual construction process, in which Anders, the architect, was in charge. It meant the physical realization of the idea, or the hardware side of GreenZone. Judging from the ready state, they did a lot, because, as Anders stated: "If you want to do this, you have to start with a carte blanche". In other words, there were no immediate restrictions on what should be done. There were also no previous similar sites to build further on, or existing buildings or solutions already implemented, working as a role model. Environmental concern therefore came to permeate the project. It started with the allocation of the right piece of land, which became a sticking point in the construction process. The land did not only alter the idea from a new dealership to a whole car (and driver) service block, but it also traveled from a local initiative in a local community to a "giocai" project for the world to see. The size and location of the land also made it possible for the facilities to integrate their own compact eco-system. The best example was perhaps the own waste water system.

The technical part also demanded some software. Anders claimed that: "The way we worked has been very significant, perhaps even decisive, in executing the project as intended". Traditional mainstream construction methods, both organizationally (functional organizing) and physically (the use of nails, for instance), were not sufficient. Such methods would most likely result in a traditional construction. This was not the case in GreenZone. Instead, a new site demanded new methods. A greener construction meant integrating environmental issues' multi-disciplinary, holistic and complex character in the working organization. Time and money were also important ingredients in GreenZone, as in most other projects, but they seemed secondary to the concept. Environmental issues steered and altered the process.

The process also sparked reactions from actors outside the project group. One example was the competitors' initiative to take the municipality to court on the issue of granting a business support to the site. In this case, the project actually led to existing legislation being questioned on environmental grounds (so to speak). The competitors did not aim at the environmental profiling, though. The site was something to be praised, they argued. Instead they aimed at the role of the municipality. The heart of the matter was that once environmental issues were on the municipal agenda there was suddenly room for biased interpretations. In the competitors' opinion, this meant an opportunity to sideline existing legislation in favor of a particular project. In the process, Peab also took a swing at the environmental profile when three of its carpenters developed tennis-elbows. They also argued, though, through the site manager, that if the environment demanded it, it was all worth it. Statoil increased its supply of eco-labeled products and started to supply ethanol. They also placed the ethanol pump at the most convenient location and invested in an environmentally
profiled car wash. McDonald’s claimed that their restaurant at the site would constitute a role model for future sites.

The technical side demanded new ways of doing things, but so did the inside of the site too, at least according to Per and Ola. The GreenZone Concept Car needed drivers. All GreenZone personnel had to participate in 16 hours of environmental training, which was basically based on TNS’ training package. In the process, the mechanics working at the dealership were brought in from the back through the personal mechanic concept. This concept meant putting “trust in people”, Per said. With such an ambition, one effect is that a long-term perspective and engagement is emphasized in the organization. If relations between customers and mechanics are important, they need time to build them.

Driving forces and stakeholders

Linking the practical aspect of GreenZone to the question why, or why GreenZone, the arguments were made up of two elements, one awakening and one opportunistic. The awakening part was highlighted by Per’s reference to the urbanization trend and the environmental influence caused by the transportation industry. “We must adapt to the ecosystem, because the other way around is impossible”, Per argued when accounting for the environmental troubles, especially the industry’s contributions to the greenhouse effect. The opportunistic part meant perceiving this situation not as a threat, but as an opportunity. Obstacles were turned into possibilities. The project was marketed as a way out. In this sense, the project was also pedagogical, Per claimed. The key was in making a mental change, from resistance and obstacles to pro-activeness and opportunities.

Per had already embarked on an environmental path before envisioning GreenZone through his engagement in bio-alcohol fuels. He was often addressing others on how the mobile industry could meet this challenge. He held a seminar at our business school. He lectured to the Carstedts’ employees in Umeå about the importance and the challenge of the project. The conservatism flourishing in the industry was, however, a dilemma, he claimed. This was also a part in labeling GreenZone as “more a mental than a technical challenge”. This was also noted in the way the personnel working at the site were framed. They did not just do a job (served hamburgers, sold cars, supplied fuel, etc.), but also joined an environmental Formula One team where they were the drivers. They were environmental ambassadors.

One issue is, though, what type of F1 car (strange choice of metaphor considering the green focus) they were driving. Also, were they driving towards sustainability, as in the GreenZone logo, or were they promoting a different way of getting into pole position? Should they not drive at all or at least change the type of vehicle? These questions are some of the tensions in the project. They made the money-making aspect evident in the project, but this aspect was also challenged at the same time. Customers, employees and the environment were
the key stakeholders according to Per, but they were not all green drivers. Much originated from Per himself as the founder/owner. The GreenZone process was, to a large extent, about enrolling actors to his opportunity-loaded vision of a unique environmental site for cars and drivers. It was a vision, as it had never been realized before. It also imagined a desired state, or a desired site at least, a site that would change the world according to its team leaders. One part of the vision was inclusiveness in the sense that the project was not only for a selected few. It was not a Rolls Royce addressing a well-dressed minority, but a Concept Car. Thereby it was something for every actor, region and nation. Once this vision was clear, it also became a driving force in the project.

When meeting Ola, employees, the municipality representative and others, it felt as if Per's enrolling process resembled a politician's election campaign. He did not draft voters, though, but he enrolled an architect (If you want to do this...), a Ford-manager from Stockholm (I got terribly interested), employees, the municipality of Umeå (and now Per comes in and actually want to do this, he is very convincing), three transnational corporations, a constructing firm (it was all worth it if it saved the environment) and maybe also the general public. "There are people in our society that demand implemented visions", Per argued. He came to represent the vision and the main driving force in the process.

Identity

On the matter of identity, the respondents conveyed three aspects. First, the automobile industry, and thereby the project, was environmentally destructive. Based on this, secondly, they argued that they should and could do something about it. Hence, they were change agents. Third, they still had to legitimize the project on the traditional market, complying with written and unwritten laws of business. In this sense, they were adapters. These aspects partly illustrated the dynamics of the project's identity construction.

Per and others argued that the transportation industry played a part in creating environmentally destructive patterns. Reflexivity on this situation was, as mentioned, an important driving force in the project. This is not, though, a remarkable fact, suddenly emerging to enlighten a local car dealer. These findings have been around for a while. They are established. What is a bit remarkable is that Per made a great point out of it when creating GreenZone. He argued that GreenZone was based on a reflection of current unsustainable patterns, patterns of which they were a part. If only everybody could realize the importance of action at this stage. In this sense, GreenZone became an alarmist's signpost. One part of the identity is, hence, the project being linked to this, a businessman's awakening. In this way, the project is framed as an actor taking these issues seriously. It might, however, also be a way to make the link between environmental destruction and the actors in GreenZone less clear. That is, as they are the positive example in an unsustainable industry, the other firms come
to represent the villains. GreenZone is an exception. This also leads to the second aspect.

Per said: “Who has the most to gain from greening the car industry? Well, those who work in it and depend on it everyday of course!” Together with highlighting their own part in creating the greenhouse effect and other environmental problems caused foremost by pollution through the use of fossil fuels, they also attributed themselves with agency. As they were a part of the processes, they could also change them. Per continued: “We will influence the industry and the world, people will follow”. A second aspect of the project’s identity is therefore the inscription of action being possible. Action is an opportunity. GreenZone has proven it. The project is one example of how an entrepreneur through a networking process made a difference in the industry. Per and his teammates did show that it was indeed possible to in some cases be radically green while running a highly competitive business.

Being an environmentally destructive, yet positive organization as well as a change agent was not the only major aspects of GreenZone’s identity. They were also victims of greater structures out-there. They had to adapt, Per explained when motivating the project. They did not negotiate with natural laws, for instance. Mother Nature sets the frame. Adaptation was, however, also a theme when it came to laws of the market. They had to adapt to these mechanisms. For the project these aspects constituted the social norms with which they had to conform. Their identity came down to being a socially responsible business, but also a profitable and modern one. This leads this discussion to the next level.

Worldview

The environment set the framework and there were hard objective scientific facts supporting the GreenZone case. In other words, one sticking point in arguing for the project was the undisputable fact that the environment, and thereby society and more specifically the transportation industry, was in danger. Action had to be taken and the project was one way of approaching the situation. This view had the environment as out-there. The environment was not negotiable. The use of TNS’ systemconditions in the trainings and in Per’s lectures were two indications of a faith in this duality.

GreenZone also represented a faith in the market forces. The project started by questioning the industry’s ways of doing things and priorities were supposed to be straightened. But the burning issue is that just as the project had a faith in a dualistic view, the project took a clear stance on businesses’ role in society. “Usually one starts the dealership and in the end try to make as much money as possible”, Ola said about the traditional car-dealing project. GreenZone would be different. It was not like any other project, as it challenged those very foundations. Money-making was in fourth place on Per’s list, but Per also emphasized that the market forces had to be involved in the process. There was even a particular economic incentive for indulging in a project such as
GreenZone. He claimed that: "If I had worked as a stockbroker or in the capital industry, I would be classified as an insider". The market was always there, but it was less clear at the outset, in the visionary stages of the project. Ola said when the site was up and running: "Now, we have to sell cars like never before". They did and they ended up with a 50 percent larger market share than before the project.

The focus on underlying assumptions on business and environment raises an interesting quandary here. Take another quote from Ola: "Parallel to my engagement in cars, I have, among other things, been a field biologist and it is possible to combine, even though it is basically an impossible combination". Through his statement, Ola indicated that he thought GreenZone was an example of how this combination was possible. The issue is, hence, whether greening and making money from selling fossil fuel powered cars are compatible or if they are an odd couple? Could you support the industry's strive for profitable investments, market and products while simultaneously claiming that the way it is acting is a key factor of an unsustainable development? My interpretation is that this line of argument is vague in GreenZone's case. The project never really questioned the underlying corporate money-making aims to start with. It rather focused on the solutions money were made of, as in traditional car service sites and cars versus a site like GreenZone and the FFVs. The project, however, through its challenge of the mobile industry still invited the assumptions of the market being pondered. In other words, there was some degree of rocking the cradle.

A question still is if the environmental profile was merely a marketing gimmick? Focusing on the technical side, or the physical environmental traces at the site, the answer is no. The GreenZone site influences the environment less than an ordinary one, but the challenge might not be as radical as one might have thought at the outset. Per leaned on TNS' systemconditions, which besides promoting a dualistic view in its quest for sustainability also, to some extent, render the technocentric approach incompatible with a more ecocentric one. This incompatibility comes down to the corporate emphasis on economic growth, profit maximization and free trade. These mantras have their downsides as they are often accompanied by environmental destruction and social inequity. The project was, however, promoting environmental problems as business opportunities. There was money to make when an actor, as a first mover, decided to develop and promote environmentally adapted solutions. GreenZone was one example. One way the project would be paid off was also through marketing the Concept Car to the world, partly through the TNCs Ford, Statoil and McDonald's. GreenZone was for sale.

But maybe there was no major difference between the critique of the corporate approach and the faith in turning the environment into business opportunities. Maybe they could work hand-in-hand. Maybe GreenZone stood with one foot in each camp. But if TNS and the win-win economy-ecology messages are stretched, there is a significant difference between these stances. A
difference as evident as those in the science wars referred to earlier in this study. They cannot be merged - collectivism through social and environmental responsibility on one side, and the quest for individual monetary gain on the other. Sure, there are several hybrid combinations, or in-betweens, but they are basically opposites. What was interesting in the GreenZone project was that although the market was always there, the emphasis shifted in the project. The initial brainstorming and visionary phase was characterized by less anthropocentric and econocentric values, whereas the latter phases pushed the project into a more technocentric mindset. The one-bottom-line was clearer at the end compared to the beginning.

From one perspective, there is a sense of betrayal as one of the unique aspects in the GreenZone Concept Car was the blurring of traditional business borders - economy/ecology and money-making/citizenship. It was an example of how a future and more sustainable business might look. Reflections at the outset held the industry responsible to a large extent. Movements toward ecology and citizenship had to be made. GreenZone was one way. But the dealership had to legitimate itself as a business enterprise and not as a NGO. The spread of the concept was accomplished through showing that the project was good business, making other investors interested in embarking on similar ventures. This was Per's intention. A business emphasis in GreenZone could not, however, be framed as a kind of failure, i.e. business as usual continues. A spread of the concept might lead to better environmental solutions diffusing nationally and globally. It may, though, be of little help if the general pattern of increased production and consumption continues. In that sense, a profitable GreenZone might even contribute to an unsustainable development.

Targeting the worldview level, there was, as mentioned, a dualistic emphasis. But occupying another position in the circle, there were also signs of a less dualistic view. The respondents invited this. For instance, listening to Ola talk about the bug and the trees blocking the projected road between the pond and dealership, his eyes became bigger, he smiled and there was an obvious pride in the way they had dealt with the matter. This was easy to understand. They had saved an endangered bug and an old oak. The fact of the matter was, however, that the bug and the oak had also altered the project's outcome. The road could have been realized according to the plan developed in the idea phase. There was no mention, at anytime, of someone or something protesting the original design of the road. The project group eventually considered the bug (or the bug them) and the bug became a part of the GreenZone network. The road would not be the same without the bug. The bug would not be the same without the road.

A similar example was the dealership's marketing of ethanol-cars. The salespersons promoted the FFV. They helped customers, with or without an environmental interest, to consider leasing or buying a car that was powered by ethanol instead of one powered only by petrol. I experienced it when I traded my Mercedes-88 for an American-made 3 liters V6-engine ethanol car with all comfort (AC, automatic, etc.). Another marketing "actor" was, however, the
ethanol pump at its location outside the fuel station. Everybody fueling his or her car with fossil fuels had to pass this pump on his or her way to the boutique in order to pay. Although I have no surveys to lean on or other observations enforcing this point, the ethanol pump is probably a solid marketer of ethanol cars. Placing the pump at such a strategic location meant that a concern for the environment was inscribed into a nonhuman actor, which subsequently became a part in influencing our choices and attitudes. Those choices could of course be environmentally destructive choices if we become annoyed by having to walk by the ethanol pump, taking out our revenge by picking regular milk instead of the eco-labeled milk from the station’s eco-profiled supply of groceries. The point is still made. It influences our actions.

A third example, where ontological dualism was shaken was the restriction on using ordinary nails in the construction process. Nails were not allowed since they were perceived as conflicting with the reusability-thought permeating the project. Instead, the products used should make the facilities easy for future generations to dismantle. In other words, the nails had to be “liquid” nails, such as screws or bolts, making it possible to reuse the planks and beams. This meant, from this alternative view, that the project basically inscribed that once a plank was nailed it was not the end of the plank or our relationship with it. The plank was a living thing, moving along with us.

These types of examples could continue, focusing on solutions where our often dualistic view of the environment is questioned. Take, for instance, the grass roof and the living filters. The borders between nature and society might not be so clear after all. GreenZone made this explicit, even though the respondents did not address it in these words.
6 The Green Guide

The Green Guide was initiated by two rural Swedish municipalities and aimed at assisting small and local businesses in their environmental work. The project reached more than a hundred firms, although this account predominantly targets eight of them, selected by the project managers. My engagement in the project was ambiguous as I was both an instructor in and evaluator of the project.

A rural context

Calmly placed at the entrance to the high-mountains, more than 800 km north of Stockholm, the ambitious tourist finds the municipalities of Malå and Sorsele. Statistically, they are next to invisible, as the inhabitant per square kilometer figure requires a decimal. The largest and most population dense places in these municipalities have no more than a couple of thousands inhabitants. With the current urbanization trend, the population situation is not improving either. Young people move to the more dynamic and growing coastal regions such as Umeå and Stockholm. This has created a population gap. Once gone, many never return from their urban adventure. Some, however, do come back to where they spent their adolescence in the quest for a comfortable and secure place to raise their children. In both Malå and Sorsele, the supply of trained labor is scarce and the customer base for local dealers is diminishing. Large firms enter and take over small firms’ areas, and the municipalities’ base for taxes is reduced. From this perspective, pessimism lies closer than optimism.

Earlier, the region was kept alive by a fairly diverse infrastructure. Trains used to visit the area by the inland railway line, but it was shut down due to low economic vitality. Nowadays the majority of transports are handled with cars, busses and trucks. From an environmental perspective, this is a dilemma since the transportation sector, as indicated in GreenZone, is often singled out as a major environmental villain. The need for transportation in this region is also, besides strong, not viable in strict economic terms. Every year there are complaints about the poor standard of the road network system and the debate is intense on where the government’s money should be put to work. One sign of people’s dependency on roads in this region becomes visible when traveling with public transports from Umeå to Malå. You step on the bus taking you from Umeå to Lycksele, which was expanding its bus station at the time. Then you take another bus to Björksele where a preordered taxi is waiting for you, which is included in the bus ticket. The taxi brings you the final kilometers to Malå. In my case, a grandmother and one of her grandchildren, who worked as a “co-driver”, drove the taxi from Björksele. They happily took us around Malå when the two taxi sharers and I did not have the same destination once in the village. I stepped off at Düngers, the local cafeteria, for my first meeting. The total travel-time was about four hours and it is less then 200 km.
For the member of this community, there is seldom any alternative to the car and the bus either. This is mainly due to the distances between different utilities. The distances, however, is also a particular reason for why people feel at home. During summertime they enjoy the silence, the fishing and the cloudberries. During wintertime they travel smoothly over the snow-covered landscape on the scooter. The environment in this region is also an issue for Sweden as a nation, as it is characterized by, albeit not always perceived as such, a richness of resources in its purest meaning: the endless forests, the fresh water, the acres of farmland and the constant presence of wildlife. The government sometimes wants to preserve it, firms usually want to exploit it, members of the local community both cherish and explore it, and Non-Governmental Organizations aim at protecting the natural reserves. The stakeholders are many and the issues are often complex.

Scanning the business communities in the two municipalities, the firms are predominantly small and linked to the regions' natural resources. Malå is located in the middle of “the mineral belt” and has traditionally been associated with different kinds of mining. There are also, however, several sawmills in both Malå and Sorsele, although the numbers are decreasing. Linked to the forest industry, there are firms processing wood, such as manufacturers of cabins, houses, furniture and even coffins. There are also firms operating in the food industry, focusing on reindeer meat and other north Swedish delicates. There are also firms taking advantage of the rich environment in more tourist terms. They guide Japanese, Germans, Scandinavians and others on wildlife safaris, taking them out on different adventures, housing them in cabins, often lakeside, letting them fight the mosquitoes in the summertime and the mere cold in the wintertime. Another large industry in these areas is the road carriers. They are usually very small, often micro-enterprises, employing one or two at the most. Summertime they drive their trucks around Sweden and Europe. Wintertime they add snow-clearance to their schedule.

The project

Between 1995 and 1996 the environmental offices at Malå and Sorsele municipalities started discussing how the local firms could deal with what seemed to be a growing environmental trend. The firms should not, they thought, be surprised once the environmental talk was translated into concrete actions affecting the conditions for running a business in the region. Large firms in the south were already asking their small suppliers in the north for environmental investigations and reports. The government had also demanded that all Swedish municipalities (289 in total) should develop a local Agenda 21 program and that it should include how the local firms would be involved in the change processes. These developments became incitements for taking action towards, or together with, the business community. Also, it was no disadvantage that the area of
environmental management in small firms was of keen interest to two environmental inspectors, one in Malå and one in Sorøl.

During 1996 the two municipalities turned to the Swedish National Board for Industrial and Technical Development (NUTEK), the European Union’s Small Business Initiative, and Västerbotten’s County Administrative Board for financial support. The base for the application was a project proposal entitled “Environmental management in rural districts”, authored mainly by Erik Sundkvist from Sorøl, one of the inspectors referred to above. Erik had also played a part in the municipality of Sorøl winning the second prize in His Majesty’s environmental competition the same year. This became a factor built into the credibility of the application, as it proved that they had a thorough environmental work going already. In the description of the project, the already encompassing environmental work in the municipalities where schools, households, associations and villages were involved, was to be strengthened through targeting the business community. The link between the different parts of the community also vouched for a long-term and democratic development. Erik later became one out of two project managers in the project.

The basic idea with the project according to the application and the project managers were to assist small firms with environmental management issues. There was an emphasis on small firms as a belief in the project was that small firms operating in rural districts had different prerequisites and required different solutions than large-scale corporations in urban settings. Of course, there was almost nothing but small firms in this region, but the environmental management work, they argued, had to be situated in this specific context. As formulated in the application, the main purpose of the project was to “provide solutions for environmental management in small firms localized in rural districts”. This ambition was broken down into six specific targets:

- To create networks between firms and the rest of society
- To inform 100 firms on environmental management systems
- To support environmental audits at 25 firms each year
- To educate five local resource-persons
- To develop and carry out a college-course on environmental management
- To certify/register five firms according to ISO 14000 or EMAS

The target audience was small firms situated in the two municipalities and in a first step they would be informed through different information meetings. This would be followed-up by initial environmental audits, which in their turn would constitute a platform for the development of individual goals, visions and action plans. Those firms that signaled a particular interest in the project should be supported more intensively in order to push them towards certification/registration according to one of the two established environmental management systems (ISO 14001 and EMAS). Overall, the actors behind the
application thought that this would enhance the competitiveness of the local firms, increase the concern for environmental issues, lead to a development of new and environmentally sounder products, and to a strengthen municipal Agenda 21-work.

In the early phases of the project, before funding was guaranteed, the group of actors influencing the project hesitated around the project name, “Environmental management in rural districts”. First, they thought, it associated to the established environmental management systems. It was suggested that the project was better off avoiding such linkages as the reality for the majority of small firms do not contain environmental management work in terms of ISO 14001 or EMAS. Their reality was more related to a less bureaucratized environmental work and firms representing such a reality should not feel excluded by the title of the project. It was after all those firms that represented the basic target audience in the project. Another downside of the title was the emphasis on rural districts. It was a fact that the project and its participants were situated in a rural area, but making this explicit in the title, the participants were firmly placed in the boondocks. Instead, “the Green Guide” (Miljövisaren) was proposed and approved.

According to the project’s original time schedule, the preparatory work would begin in 1997 and pick up speed during the premier parts of 1998. The project time was two years, formally between the 1st of January 1998 and the 31st of December 1999, but as for several other business developments projects, the plan did not match reality. The initial information meetings were arranged in March and April 1998, and the project was officially closed in July 2000. According to Erik, this delay had predominantly three explanations:

1. The project ownership changed twice due to personnel changes at both municipalities.
2. Early on, one of the financiers decided to support the project and things started to move, but the other financiers were not so quick in their decisions, which placed the project in the starting blocks for a long time.
3. The most decisive delaying factor was, though, the participating firms. They needed time to decide if they would participate in the Green Guide.

The first formal activities consisted of bulk mail sent to more than 300 local firms where a letter described the project in brief and invited the firms to an initial information meeting. The response was not impressive, but in total, four meetings were arranged during spring 1998, one in Sorsele and three in Malå. One planned meeting, in Ammarnäs, a neighboring village to Sorsele, was cancelled when only two firms signed up. They received personal visits instead and this points at a dilemma facing the project managers throughout the promoting process. It usually took a personal telephone call from one of them to get a firm to attend. Also, according to the plan the meetings would be carried out between the 17th and 19th of March. It was, however, difficult to get the firms
to unite around this period and it was instead extended to include a large portion of April too. This was despite the project managers’ strategy to tempt firms with breakfast and evening meetings where complimentary sandwiches and coffee were served. In total, 38 persons representing 27 firms attended the meetings. Four of those persons represented groups of firms, which meant that a wider range of firms indirectly got in contact with the project.

The information meetings were also good opportunities for me to get an initial contact with the small firm managers. I did not bring a recorder to the meeting I attended in Malå since it might have had deadening impact on the participants. I had, however, developed a very simple evaluation form asking the participants to evaluate the meeting, which was distributed after all meetings. At the meeting in Malå I did no more than present myself, listened and distributed the form. During the meetings the participants had the chance to listen to a short lecture on environmental work and environmental management systems. Staffan Åsén, environmental inspector in Malå at the time and the second project manager, did the main lecturing. At two occasions, however, a consultant was engaged to talk about environmental purchasing. The meetings lasted from one hour up to three hours and at the end the participants received my form together with a form handed out by the project managers. This form asked for indications of the firms’ interest in the project. The small firm managers were asked whether they wanted to participate in the Green Guide and when they would like to be contacted by the project managers (two weeks, within a month at the earliest, another time, not interested). Among the information received from the two forms were:

- 59 percent of the 27 firms employed 10 persons or less
- 22 percent employed more than 20 persons
- The smallest firm had no employees
- The largest had around 50 employees
- The absolute majority attended the meetings due to a personal call from one of the project manager
- 63 percent wanted to be contacted within a month or sooner
- 11 percent were not interested
- On a scale from 1 to 11 (bad to good), the participants rated the four meetings between 8 and 10.4.

During the meetings, the participants also had the chance to ask questions, discuss and in other ways (in the evaluation forms, for instance) express their thoughts on the meeting and on environmental work. Studying the feedback on some of the more open questions gave me hints of where the participants came from. One of the questions dealt with the reasons behind attending the meeting. The majority answered that they were interested in environmental issues and generally curious about them. Their curiosity, however, also indicated some
uncertainty and even uneasiness concerning the potential influence environmental issues might have on their firm. There was especially a concern for how their own firm and its operations fitted in the picture. The importance of an environmental work was never really questioned, though, which might be exemplified by some of the commentaries made in the evaluation form: "the environmental work is not something we can neglect" and "the idea of working environmentally correct affects us all". Others were closer to their own firm's operations: "curious about the customers' demand for environmental work", "the firm is interested in implementing ISO 14001", "environmental management system is already in progress", and "it is important to the firm's survival". There were also less enthusiastic comments about why they attended: "a personal invitation through the phone plus the sandwich, but mainly because the environment is a sign of the times" and "the boss sent me".

Another question was whether or not (and why) the meeting answered up to the participants' expectations. 27 of the 38 persons made it simple and wrote "yes". My first reaction was that short answers were expected since the typical member of a northern and rural community does not overuse words, especially exaggerated positive ones. A "yes" in the north of Sweden could in the south very well be translated into a "lovely" or a "great". There were, however, responses expressing dissatisfaction. These predominantly indicated frustration concerning the lack of links between environmental issues and their own firm. How did the issues affect their particular organization? Among the quotes were comments like: "I could not decide whether this was interesting for a reindeer-business" and "I missed the concrete information of how to produce the documents".

Questions from the conversations that I picked up during my attendance at one of the Malå-meetings were also fairly practical: "how do the trainings look like, I mean, concrete that is", "are the trainings directed to the specific firm and its environmental audit", "could we calculate our own time [participating firms had to co-finance their participation and this question was about whether they could monetize spent time into the project]", "how much time will this take", and "what are the costs". Other negative commentaries were: "information about the environment is difficult to listen to for 50 minutes", "there are no examples of firms that have carried out similar projects and what the consequences have been for them", "it was a bit slow", and "too little time on environmental purchasing". There was a concern for the lack of balance between theory and practice too (lack of good examples). The attendants suggested that a bank of examples should be put together where managers could study cases before, during and after similar meetings.

Parallel to the meetings, the two project managers, Erik (Sorsele) and Staffan (Malå), conducted personal visits at a range of firms. Questions pondered during their visits were: What were the firms interested in? How could the project help them get started (or continued) in their environmental work? Some of the firms encountered, either in the meetings or the visits, were more eager than
others. The eager ones got a jumpstart compared to the others as the project managers immediately assisted them in their work. They helped them conduct simple environmental audits and with short, from a couple of hours to full days, trainings of the personnel. As the project developed, more and more firms boarded the train and the majority was assisted with initial environmental audits. The method and structure for many of the audits were a simplified version of an EMS process:

- Background to the firm, its location and facilities, its products and processes, its organization and economics
- Reasons for conducting the audit
- Presentation of the firm’s environmental policy and overarching targets
- An analysis of the firm’s use of resources (for instance: procurement, pollution, chemicals, waste, energy, transports, working environment, investments, training)
- An environmental program, an action plan for the future environmental work (immediate, short-term and long-term actions)

In the Green Guide, two targets were to train resource-persons, making sure that competence stayed in the region post-project, and to initiate a college course on environmental management in small firms. Both targets emphasized the link to the university, which to some extent became a natural part of the project due to Erik’s engagement in Umeå University’s Environment and Health Program. Also, in earlier initiatives, a course on environmental management in small firms had been discussed and there was already an Environment and Natural Resources training in Storuman, a neighboring municipality, which Erik was involved with. There was also a cooperative effort between Umeå University and Norsjö (another neighboring municipality), where a specific, although more practical course, the SPETS-training, was developed. Three persons from participating firms in Malå took the chance of becoming resource-persons in the Green Guide through attending the SPETS-training. I was involved as a lecturer on two occasions. The Storuman training was also integrated in the project, particularly through the use of students from this training as resource-persons. They predominantly helped firms participating in the Green Guide with a review of the firm’s influence on the environment and an accompanying action plan. In addition to the Storuman students, two students from the Environment and Health Program also assisted the project in the role of resource-persons, mainly by carrying out environmental audits.

If the SPETS-training was a mixture of Norsjö and the Green Guide, the following university project was a pure Green Guider. This was a brand new ten points university course labeled Environmental Management in Small Firms arranged in Lycksele and Sorsele from fall 2000. At the time of this study, the university had accepted 39 persons whereof 15 were from Sorsele and Malå. Some of the
resource-persons would attend and according to the project managers they were especially pleased about the local participants. The competence in the region was enhanced and when local actors were trained in these issues, perhaps the knowledge base from which local firms could draw would be localized in all its meanings. The region would not be dependent on people from other parts of the country.

In the Green Guide, sixteen persons in total had been trained and utilized as resource-persons excluding the two project managers. Beside those mentioned, a number of other persons already committed to environmental issues, living in the region, were asked to assist in the project. One of them, who also represented one of the participating tourist firms, even joined the students for their preparatory day in order to equip himself for the project. During 1998, the Green Guide also planned a get-together with potential resource-persons, but only four applied. Instead of arranging the seminar, Erik and Staffan made personal visits at each of them. I met with three of the resource-persons, where two also managed participating firms. The one that did not manage a participating firm was Rune Linder, an inventor and long-time environmental enthusiast. He had some ideas about the environmental work in this area.

His main area of concern was with those firms and households that, according to him, had invested themselves into inertia when it came to the use of electricity. Often they faced high short-term costs when reinvesting in this area, which made the issue more a money-issue than an environmental issue. Rune had helped several local firms in seeing both sides of the coin. There was money to be made and environment to be saved in, for instance, replacing “direct-working” electricity with pellet-burners, but change was difficult. The hindering factor in Rune’s account was money, but this was not the whole explanation. People in this region sometimes spend almost 60,000 SEK on a new snow scooter, he argued, so the money is to some extent there. Rune claimed, a bit ironically, that it came down to how you perceived the issues, that is, the cultural aspects of it all: “Just compare the symbolic value of the boiler room with that of the scooter [snow-scooter]. Perhaps you should put glass around the boiler room and put it in your garden. It would be different then.”

Examples of participating firms

The participating firms operated in a wide range of industries, from farmers to high-tech firms, and the majority was small. In sum, over a hundred local firms had in some way come in contact with the project. The level of engagement differed, though. For those managers taking their firms beyond the information meetings, some went on to conduct simple audits of their firm’s environmental impact whereas others went all the way in implementing an environmental management system.

One large group of those firms moving beyond the meetings and which characterizes the region is tourism. Eight such firms conducted environmental
reviews and developed action plans (or more) within the project. The firms ranged from holiday villages to safari-firms. Another line of business was agriculture and the really small farmers were finding it harder and harder to survive. Three of them participated in the project and conducted the farmers’ counterpart to environmental audits, a prescribed inspection of the farm’s environmental influence (miljöhusesyn). Traveling in the north inland of Sweden, there is an exciting and sometimes even frustrating range of trees, more trees, and then some trees. Naturally, the forest industry and its related businesses are important operations that the members of the rural community derive their livelihood from. Six such firms developed action plans based on initial environmental audits within the Green Guide. Also, when traveling the inland one is at first excited by, later frustrated by, the ever presence of wildlife close to the roads, especially reindeers. The wildlife constitutes a base for another line of business, the food industry. In the Green Guide, four such firms conducted environmental investigations.

As mentioned in the beginning, large distances and a relatively poor infrastructure characterize the reality for the member of this community. Transports are predominantly carried out by cars and trucks, which means that road carriers (truckers) is another important base for living. Four such firms, representing twelve in total, developed environmental programs and even became certified by their industry association within the scope of the project. In Malå, a more specific line of business has found its place. This industry is based on recycling and tires, and could be labeled a rubber industry. Four such firms participated in the project. At the time, they were the firms being closest to receiving EMS certificates. Fourteen additional organizations received support from the Green Guide to conduct environmental audits and action plans. I write organizations here instead of firms when one of the fourteen was the municipality’s road department. The other firms were active in a wide range of industries, such as consultants, information technology, retailers, gas stations, mechanics and electronics.

In late June 2000 I traveled the region in order to meet up with some of the participating firms and also to participate myself in the final gathering at Sandsjögården (also one of the tourist firms in the project). The selection of which firms to visit was made by the project managers and their premier aim was diversity. The interviews gave me a good idea about the project, but more importantly an insight into how the firms were approaching greening. As a base for this description, I have had, besides the interviews, every audit/investigation carried out within the project sent to me. The audits were, to my reading, adjusted to the particular firm. On the average, they were six pages long and went directly to the heart of the matter, the firm’s environmental impact. My first stop was with one of the firms recycling tires, Malå Gummiverkstad AB. I arrived together with Staffan.
I learned that MGV based its operations on reusing and recycling rubber and plastic, providing MGV with a natural link to the project’s topic. The firm was responsible for an additional five firms within the same area and you could consider them as a mini-group as the owners were the same. At the time, MGV’s operations demanded approximately twenty man-years, but it was an expanding group. Already in 2001 the firm expected to employ an additional 25-30 persons in a new firm. Due to its profile, or line of industry, it was argued that there was a potential in creating an environmental profile. In a summary of their environmental work, handed to me during the visit, it was stated that: “We are convinced that an active environmental work will strengthen our customer reputation. That is why the environmental work is a part of our total quality.” The environmental targets were about reducing energy use, waste to deposit, use of chemicals and oils, and more. An important characteristic of their quality targets was also that they had to be measurable. Despite the firm’s fairly small size it had decided to go for an EMS certificate, which was received in September 1999.

MGV’s relation to the Green Guide had mainly been maintained through Peder Linder, who was responsible for the organization’s quality and environmental work. He was also the son of the founder/manager and it was Peder whom I met up with in his office. I had met him on an earlier occasion when he participated in the SPETS-training in order to become one of the resource-persons in the project. Through the project, the firm had received assistance in training the personnel and in implementing the EMS. The project managers perceived the firm as one of the most active ones, placing it under the project managers’ loop. According to Peder, MGV had rushed past the project, but it was still rewarding, especially regarding the way of thinking surfaced in the project. Many of his prejudices about the environmental stuff had been dashed to the ground in a positive sense: “The way of thinking in the project is sound. It is important to make money. Environmentalists have a tendency to lean a bit too much towards the other end. They often lack an understanding of the market mechanisms.”

The firm had also acted quickly in their environmental work. Peder started his work in May 1999 and although the environmental work had started in 1997, it was at this time that it picked up speed. Staffan entered the picture and in the beginning it was mainly about “help to self-help” through education and training. Peder argued that for him to participate in the project was a good investment for the firm as they strived to implement EMSs in the other firms in the group as well. He also claimed that their pro-activeness was good for the region as such, as their products were environmentally sound and they created new work opportunities for people in the region.

Talking about the project in general, Peder considered the level of the project as quite low and suitable for firms that had not come as far as they had in
the environmental work. He pointed out again, though, that the way of thinking about these issues (the win-win possibilities) emphasized in the project was rewarding. But there were also some critical remarks in his account. For instance, he would like to see more network-based relations and during the project, he and some other participants received some information about the so-called “Hackefors-model” (c.f. Ammenberg et al., 1999). This model was based on the idea that small firms should work with EMSs in groups in order to save costs and create networks. Hackefors is a Swedish village outside Linköping and the place where a structured model of this was tested. It was successful and at the time, a similar project was carried out in Umeå with similar responses. In his account, Peder was therefore leaning towards a future Malå-model.

**Bebos Trä**

Leaving the rubber firm, the next stop was at one of the local carpenters, Bebos Trä AB (Bebos Wood Ltd.). Bebos manufactures furnishings and I met with the managing director, Anders Lundgren, in their conference room. The facilities were similarly structured to MGV’s with an entrance, offices and then a factory in the back. Anders did not fit in the administrative milieu, however. He seemed to be a man of practice. He also indicated that the environmental work to some extent was administrative when he quickly pointed out that Stellan Wänstedt mainly conducted the environmental work at the firm. Stellan was a resource-person in the Green Guide (I met him at the SPETS-training), a manager of a participating firm in the project as well as a member of Bebos’ board.

Bebos had customers throughout Europe, which were a mix of buyers, from wholesalers and hotels to small private buyers. Anders said that the majority of customers never asked about the environment or made any demands in that area. The firm had still made an environmental audit and considered themselves as having a problem with foremost chemical substances used in the surface treatment of the wood. They had tried water-based substances, but it did not go very well. Instead they invested in a catalytic cleaning of the pollution they caused due to the surface treatment, but as Anders claimed: “To clean costs a million and nobody is ready to pay the additional costs”. This reality was one reason for participating in the Green Guide. Another one was that larger construction corporations such as Skanska, NCC and Peab were making inquiries into Bebos’ environmental work. Bebos was also a member of an organization coordinating several carpenters in the region, Centralsnickerier, and they had started making environmental demands as well on their members. Preferably, all members should be certified or registered according to an EMS. Anders was also a bit worried about the impact of the new Swedish Environmental Act. He stated that “with the right prosecutor, you can bring down a lot of companies”.

Stellan and Staffan had carried out the activities at Bebos within the Green Guide, as the firm, it was argued, lacked time and money to indulge in these matters. They had, however, despite of this, done some things in the area. Anders
talked about how they through a number of simple measures regarding waste handling had saved some money. For instance, they bought a waste disposer and waste going to deposit was therefore continuously reduced. At the time, they chopped the rest-products into chips and sold them. Earlier, Bebos sent away, on the average, two containers of waste (10 cubic meters/container) each week. At the time, they sent away one each month. The project had also led to a better understanding among the employees and they had, for instance, started car-pooling much more. Basically, though, Anders said that they were not so keen on environmental work and he argued that they would like the initial environmental audit that Stellan and Staffan conducted to settle down before taking another step. When asked about his overall impression about the project, Anders felt that foremost two things made it useful. First, they needed help as neither he nor anybody else at the firm mastered these issues. Secondly, they needed a catalyst in order to get started. The project filled those gaps.

Samhall in Malå

Moving on, the next firm was Samhall in Malå and Samhall was a bit special. Their purpose was not comparable to traditional firms. They were owned by the Swedish Government and served to provide meaningful work for work-disabled persons, those who found it difficult getting a job on the open market. Samhall in Malå was at the time predominantly manufacturing coffins, but it also produced some of the accessories, such as grave clothes and wooden crosses. Their market stretched from the county of Dalarna and up north, but they also sold to Stockholm, Gothenburg, Malmö, as well as to Finland and Norway. The market for coffin manufacturers was relatively large and demographically productive. In Sweden, approximately 94000 coffins are “consumed” each year. Samhall in Malå delivered about 7000 of those. They had 50 employees of which all were work-disabled in some sense.

I met with the foreman, Lars-Gunnar Boklund, at the plant in Malå. His office was in the middle of the factory, which was arranged in different workstations following the coffin through the manufacturing process. Lars-Gunnar first came in contact with the project through a personal visit from Staffan in 1999. During the visit it came to the fore that Samhall had already in 1995 initiated a quality process, following ISO 9002. In 1996 they began an environmental process, following ISO 14001. Due to a diverse set of reorganizations, the environmental work was delayed. At the time of Staffan’s visit, they had just had their environmental work audited and there were several remarks. Lars-Gunnar felt that the environmental work was difficult, as it was hard to receive support from both employees and management. The customers did not make any demands in the environmental area either. At the time, however, information about the environmental work reached, through Staffan and Lars-Gunnar, both the employees and management. The environment had also become a recurrent paragraph at the workplace meetings.
In their efforts, they had tried to make the production process less dependent on different solvents. Earlier they used twelve tons of solvents, but they had managed to replace a large amount with water-based solvents. At the time they were down to three tons. They still had some dangerous agents in some products as they, once at the retailers, risked segregating certain agents when cooled. Besides the surface treatment, Lars-Gunnar singled out transports as their largest environmental influence and they had one road carrier working intimately with the firm. Generally, this truck did all the transports and it often came back empty after delivering the coffins. They had therefore made some inquiries in the area of logistics, trying to reduce packaging. Also, as part of the environmental work, when giving me the tour of the facilities, Lars-Gunnar presented one of their products, an environmentally profiled coffin. The coffin had no metallic fittings, was glued with wooden plugs and the lid was locked with a leather strap. The coffin constituted one out of seven or eight (Lars-Gunnar hesitated) basic products in Samhall’s assortment. During the last couple of years it had increased in sales. At the time it represented more than 10 percent of the total sales.

When asked about the general impression of the project, Lars-Gunnar first mentioned that he felt a little bit as an outsider in the project as they were engaged fairly late. He missed the opportunities when he could match experiences with other firms. He also stated that: “It is not so easy for a regular person”, referring to the complexity of environmental issues. Staffan was mentioned a couple times, especially when it came to linking the environmental management standard to the firm's operations.

Malå Järn & Färg

Heading down to Malå village I was guided to a small hardware retailer, Malå Järn & Färg AB (Malå Hardware & Paint Ltd.). It was mainly selling products for those aiming to paint their house, work in the garden (summer and winter), fix their boats or go fishing. It was really an all-in-house store, despite its small size. It was one of those stores that could only survive in a small village. I visited it during the most hectic time of the year, early summer/late spring. People were buying a lot of paint for their summer cabins, as the weather allowed for such activities. I met the manager on the run in their lunchroom. He told me that their biggest customer was the municipality, but the households were of course a major group too.

Environmental issues were basically up to the customer to decide about. The store tried to supply some eco-labeled alternatives in case they would be demanded, but other than that, the store did not find time for greening. The environmental work that had been undertaken was mainly about sorting waste and finding some eco-labeled alternatives. The store was, however, a member of the Hardware Industry Association and they had started to consider environmental issues. This had resulted in some pressure on the dealers. Järn & Färg was a bit disappointed, though, by the way the association worked with the
issues. The approach taken in the Green Guide appealed more to them: "It is much easier with Staffan. He can help you direct, on the spot." Also, as mentioned by the manager, they considered themselves too busy to do the work. In the short run, he claimed, it might run the risk of becoming a consultant-thing, a binder in the bookshelf, but not in the long run.

Öjeryds Lantbruk

Leaving Malå village, I drove towards Sandsjön and the farmers, Carina and Kjell Öjeryd, who managed Öjeryds Lantbruk AB (Öjeryds Farm Ltd.). The farm was located on a slope, 30 to 40 meters above the neighboring lake, Sandsjön. At the time, they had 28 milk cows and their farm was about 49 hectares. They also had 350 hectares of woodland. The interview was carried out in their home, in the kitchen, with home-baked bread and coffee. The environmental work at the farm started five or six years ago when they joined a study circle about the environment together with a range of other farmers in the area. This resulted in 1998 in an, among other things, economic association called the Sorsele Farmers. One reason behind this initiative was a poor price on beef, but the major reason was that "we are fewer farmers today and we need to cooperate". According to Carina and Kjell, they saw no acute environmental problems. Working with environmental issues was instead seen as preventive. They expected larger demands from customers and legislators in the future, but there was also the matter of a basic responsibility towards the environment. As farmers, they argued, they live naturally closer to a sound environmental operation. They knew how to act environmentally responsible, without saying that they did not need help in their environmental work.

Carina and Kjell explained that their farm’s largest environmental effect was the mineral fertilizers, even if they “used it minimally”. They did not use any pesticides at their farm. The biggest purchasing post was concentrated feed and the price was the most important thing considered in the contacts with the suppliers. They also bought plastic, but they claimed that they could return the majority to be reused once they had used it. The largest customer was Norrmejerier, a large economic association buying milk from farmers throughout the north of Sweden. They made environmental demands on their suppliers. Carina and Kjell appreciated this, as it was one way of receiving a reward for their environmental work.

In their environmental work they had so far conducted a prescribed inspection on the farm’s environmental influence, which was the farmers’ counterpart to the ISO certification. The inspection was done together with Erik and they did not hold back on the satisfaction of Erik: "He has become a mentor in everything". A lot of things would have fallen between the chairs if it was not for him, they claimed. The inspection included a first step, an environmental audit, which would be used in the contacts with Norrmejerier, the Sorsele Farmers and in the relations with schools and households. The firm’s
environmental policy was based on the definition of quality that the Sorsele Farmers had developed. It emphasized healthy provisions produced on clean grounds and with consideration, cooperation, trust and transparency in the relations with distributors and customers. Their action plan was based on three levels: what already worked OK (and thereby constituting good examples that should be highlighted); weaknesses that could be attended in the short-term, both easy and cheap; and long-term targets that demanded time and closer investigations. An example of the first level was the established cooperation with other farmers. At the second level, one example was to establish a routine to always make environmental demands on suppliers. At the third level, one example was the ambition to conduct an environmental audit for their woodland.

During the interview, Carina and Kjell also showed me a paper from Umeå University regarding the new course on environmental management developed in the Green Guide project. They aimed to follow this course and in the same breath argued for the necessity of a university going rural. At the end of the interview I got quite surprised when I, taken it for granted earlier, realized that they were not aware of the fact that they were a part of the Green Guide. They had not been to any of the meetings and Erik had visited them personally.

**Baseco Golv**

Leaving Malå all together, a couple of kilometers along the Ammarnäs-road from Sorsele, the floor-manufacturer Baseco Golv AB (Baseco Floor Ltd.) had its factory and headquarters. The firm had sixteen employees and their products were predominantly made out of pinewood. A small exhibition met the visitor at the entrance and from my view they were quite massive pieces of wood. The interview with Baseco was conducted at their headquarters. I got the opportunity to meet with the administrative manager Monika Abrahamsson, who was also one of the part owners and whose husband was the managing director of the firm. Baseco’s customers were wholesalers, builders’ suppliers, building contractors and households, although the ambition was to niche their products towards building contractors. It was also the demands from them that had sparked an interest in greening during the last couple of years. The firm did not cause any acute environmental problems, Monika argued, and the environmental work was seen as preventive.

About the environmental work, Monika said it was difficult to allocate resources, especially man-hours, for it. It was in this context that Erik entered the picture and started dealing with their environmental work piece for piece. Erik had conducted a training for the personnel that stretched over three meetings. In June 1997 he developed an action plan for the environmental work at Baseco. Until that time, Baseco’s environmental work had, for instance, been about sorting waste (cardboard, steel bands, plastics, etc.), which earlier was a problem for the firm. The firm was also a member of REPA (see the Duni case also), which administrated used packages. Transports were also reviewed when, as
Monika stated: “We have to carry everything and that means carrying by truck”. Raw material was usually bought on the way back, which meant that the truck seldom returned empty. Baseco also used oil in their processes and they treated the wood with lye, although it was “very diluted” in Monika’s words. The actual raw material was not a problem for Baseco and massive wood was seldom associated with any dangerous substances. Still, the raw material purchased, the pine in this case, was preferably eco-labeled. One of those labels was the Forest Stewardship Council’s label (see next firm, Sorsele Trä) and it was mainly the large forest industry, such as ASSI Domän (a state-owned corporation) that could handle such labels. Baseco was also, though, buying local timber from their neighbor Sorsele Trä. In those instances, the timber was transported merely 300 meters. In their environmental work, the firm had also been working with the so-called Green Trade, an environmental organization for exporting firms, issuing its own environmental diplomas. This was an effort to try to use environmental arguments in their market relations and Green Trade was good since Baseco exported more than half of their total sales.

The environmental work at Baseco was, according to Monika, mainly about enhancing the credibility in the contact with stakeholders through displaying a consciousness about the environmental influence their operations and products had. Baseco therefore continued their environmental work in the Green Guide and during 1998 Erik conducted an environmental audit. This was, in spring 1999, followed by a thorough review of all their purchases with accompanying recommendations. Two students from Storuman carried out the review. Erik’s audit was used to obtain the Green Trade-certificate and in spring 2000 two students from Umeå University reviewed it again (Svedberg & Sjöström, 2000). The environment was also, as one part of the credibility aspect in the environmental work, one section in Baseco’s product-binder. This binder had been distributed to about 200 architects and entrepreneurs. The homepage also had a link to their environmental work, which “shows that we are working with the issues”. Monika also mentioned their product sheets, which declared the particular product’s environmental profile.

On the question of what was next in Baseco’s environmental work, Monika claimed that it was mainly to keep up to date with current developments and to make sure they followed the action plan established in the Green Guide. They were pleased with their raw material, which was local, renewable and long lasting. They had no measurable discharge of unnatural substances and very small amounts of dangerous waste. Their short-term targets hovered around making environmental inquiries during procurement and around documenting their procedures. The long-term targets focused on conducting an overview of the FSC and ISO demands, as well as developing an action plan for how to handle the transports. There was, however, a hype around the environment at the time, Monika thought, just as it was with the quality system ISO 9000 some years back when “you had to have ISO 9000, otherwise you were out”. This made Baseco a bit skeptic about diving head first into ISO 14000. She expressed her satisfaction
with the way Erik had approached them and asserted that they got the chance to participate in the project on their own terms. Within the project, Baseco had not had any exchange with any other firm, except for its neighbor Sorsele Trä AB (Sorsele Wood Ltd).

Sorsele Trä

I met the managing director of Sorsele Trä, Roger Linder, twice in June 2000, first at the final meeting at Sandsjögården, where he had a presentation, and then at his office at the sawmill. At the time, the sawmill had more than twenty employees and a turnover of approximately 50 million SEK. They had a demand of about 67000 cubic meters timber for the year. The managing director was a man with many irons in the fire, and a man with fire (figure of speak), which was evident from his engagement in the eco-labeling debate in the forest industry. He was mainly focused on ISO 14001 and the debate on the forest industry’s development of a certificate of origin. The Forest Stewardship Council (FSC) had developed some directions for this, but Roger was very critical towards them as he felt they excluded small sawmills and benefited large forest owners: “Certification has become a pawn in the game to hinder competition... and all this was supposed to favor the environment”. Sorsele Trä had therefore worked with an alternative, PEFC (Pan-European Forest Council), which they felt was more reasonable.

At the time, customers had to deal with large forest owners if they were interested in FSC-labeled forest. According to Roger, this made transports longer and the share of processed wood in the region lower. Roger emphasized that “timber should be processed as close to the stump as possible”. Sorsele Trä had an average length of their timber transports of 45 kilometers, as their timber was taken from the immediate surroundings. This made him conclude that: “I dare to stand up and say that we are the most environmentally friendly sawmill around here, but we do not have any certificate”. Roger continued by arguing that logically, ”the larger the turnover of a sawmill, the longer the transports”. A large sawmill therefore had considerably more miles by truck in order to get the timber to the sawmill. Keeping in mind that transports were one of the single most destructive environmental villains, the effects on the environmental friendliness of the FSC-label should be questioned, Roger asserted.

Sorsele Trä was a small sawmill and also a member of an association for small sawmills in the north of Sweden, Sågab (SawLtd.). In total they were 25-30 sawmills in this association. Roger also added that the small sawmills in Sweden were combined larger than the large ones. Reality was, though, that small sawmills in rural districts were closing down or standing still. For them, these issues were about survival and Sågab was one forum to influence the direction of the developments.

About the Green Guide, Roger mentioned that they were very satisfied with the project and Roger perceived this from two positions. One as a managing
director of the sawmill and the other as a member of the board of Sorsete Allians, which eventually became the Green Guide’s owner. Roger even stated that of the total 21 projects he had got an insight into through his engagement in Sorsete Allians, the Green Guide was the best. Sorsete Trä’s engagement in the project was based on identifying environmental issues as issues for the future. The environmental work in the project had mainly been a contact with two students from Umeå University, which conducted a review of the environmental influence of the sawmill (Svedberg & Sjöström, 2000). The students were well prepared and made a good impression on Roger. They were partly financed through the Green Guide and became a good example of how the academic community could be utilized in such a project. Roger was also very satisfied with Erik, who supervised the students, when “he deals with the environmental issues in a way that you can actually talk to him”. He helped the firm in recognizing the practical consequences of greening. The audit that the students conducted also constituted the platform for the sawmill’s ISO 14001 work and Roger estimated that they had between 12 and 18 months until they were certified. Roger also squeezed in a comment on the FSC, stating that “ISO 14001 is at least open for everybody, which is not the case of FSC”. In the ISO 14001 work, Roger hoped for an additional Green Guide where they could, together with other firms, work towards a certification.

Grundnäs Kött

Grundnäs Kött (Grundnäs Meat) was a butcher firm located on the way towards Skellefteå from Malå. During peak season the firm had approximately fifteen employees, but for the whole year the firm had seven employees. The raw materials going into the butcher’s house were local reindeer and the firm had customers all over the northern parts of Sweden and also some wholesalers in the south of Sweden. The customers did not make any demands in the environmental area, but according to my interviewees, the brother and sister Fredrik and Jenny Eklund, it was an issue for the near future: “It is growing, this thing with environmental thinking, and it could develop into a requirement from the big ones [large firms/customers]”. The municipalities had started making demands, but in Fredrik’s experiences it always came down to the price of the product: “It is the price, the quality does not matter”. Focusing on quality was both a problem and an opportunity as Grundnäs’ biggest competitive advantage was the quality of the product, which meant that their price was a bit higher.

As for many other firms, Grundnäs’ largest environmental influence was transports since they had to be located close to the raw material. Although reindeer sometimes move to the coastal areas, their main ground is the northern inland. Jenny managed the firm’s environmental work and it all started during fall 1998 when she attended the SPETS-training in Norsjö. Through this training Jenny hoped that she, together with Erik, could further educate their staff. They had already initiated an environmental audit, which constituted the base for a
possible certification according to an environmental management system, but both Fredrik and Jenny were skeptical towards the benefits of going for a certificate. Perhaps, they pondered, keeping up to date in their environmental work would be satisfying.

These are the eight visits I made in the Green Guide. Beyond the activities mentioned, Erik also arranged two evening trainings concerning the new Environmental Act. In total, eleven tourist-firms in Ammarnäs and Sorsele participated in those during 1999.

The final meeting

During the concluding meeting at Sandsjögården in June 2000 the issue of ”how do we continue from here” was on the agenda. In total, seventeen representatives from local firms participated in the discussions. At the meeting they could listen to the project’s development through lectures by both Erik and Staffan. Staffan had also hired a consultant who lectured about the integration of environmental and quality management systems. The consultant’s main point was that these systems were fairly similar in their structure and that more and more firms were integrating the two into a single business management system. The participants also had opportunities to express their opinions about the project during the meeting, both in shorter workgroups and in a general discussion. The participants also answered a shorter evaluation form developed by me. Beside questions on background data, questions on why they joined the project, expectations, outcomes, downsides, continuance, and more, were asked.

Erik summarized the Sorsele part of the Green Guide. Two firms had received EMS certificates and additionally two or three firms were on the way. So far, they had conducted 29 environmental audits and arranged 3 trainings. Besides Erik, nine university students and five businesspersons had been utilized as resource-persons in the project. The link to the university was predominantly constituted by two examination projects and four project works. The SPETS-training had been arranged and a new course at the university on the topic of environmental management in small firms had been developed. The audience also learned that among the frequently asked questions throughout the project were the concern for the firm’s need and demand for environmental management, and issues such as purchasing, quality-guarantees, energy and waste.

There were a fairly modest number of participants at the meeting, which resulted in few evaluation forms being handed in at the end. Four firms attending the meeting had entered late in the process and left the majority of the form blank. Five complete forms were handed in and they came from firms with a clear connection to the project. They had all started their engagement in fall 1998 or in spring 1999. Their overall impression of the project was positive, giving it an eight out of ten on the average. This might be explained by the expectations they had on the project, which by judging from the evaluation forms were low. Some respondents wrote that they had no expectation what so ever on the
project and others argued that they wanted something concrete out of it, whereas one wanted a full EMS. The basic purpose of the project, according to the application, was to enhance the firms’ chances to survive and according to the respondents this had been achieved. Cutting from some of the quotes on this issue: "we are more competent in the environmental area now", "we have answers to our customers’ questions, we know how our personnel should work in the future", and "we feel that we found the red thread that connects the different steps, which are necessary to achieve an effective environmental work".

On the question of whether or not they would be interested in a continuation of the project and what such a continuation could look like, they first of all agreed on the will to continue. A future project should circle around advancing the EMS work with a specific focus on achieving a certificate. During the evening, the discussions continued in workgroups and the thoughts hovered around certification. They emphasized, though, that it would be good if such processes took place in a network. Co-certification and co-environmental work were some of the keywords reappearing and their thoughts had probably been influenced by the experiences of the project, but also by the Hackefors-model mentioned earlier. However, they were careful to point out that they would preferably see a local model being developed. They also called attention to the need for industry-diversity in the group of firms working in such a process. Instead of dividing firms into industries, they should divide them in terms of ambition. Perhaps they should also link quality and environment in the process, linking their discussion to the consultant’s lecture. A key point in the discussion was also that they would not like to be left alone. They wanted to be pushed and supported in their efforts, as there was always a danger of falling into old habits. Perhaps one of the resource-persons could step in if Erik or Staffan would not shoulder the responsibility.

Reviewing the original targets set up in the project in a strict sense, they had all been fulfilled, except the aim to create networks. They had informed a range of firms about environmental management, supported 44 (66 if you count all the firms involved through associations) environmental audits, two firms had received certificates, one was on the way, the road carrier associations had been certified according to their industry’s standard, five resource-persons had been trained, eleven students had been trained and utilized, SPETS was carried out, and the new course in environmental management was developed. In this way, the project could be regarded as successful.

Discussion

The rural context is different from coastal and urbanized contexts. An actor in this region is a part of a fairly small community. All the firms, for instance, know of each other. The division between different social categories, it seems, are particularly blurred. Even though the managers encountered in the Green Guide often emphasized traditional business aspects in the greening processes, running
a business in this region is different. One example is the municipalities' active part in assisting local firms in implementing an EMS. This is a base for accusing the municipality of making competition askew. Had it been in Umeå or in Stockholm, protests would probably have been heard, especially if only some firms got the offer, or realized the offer in time. This was evident in the GreenZone case. In the Green Guide, however, the two rural municipalities had identified the pressure from the larger actors and they decided to do something about it.

Greening in practice

Studying the activities undertaken by the firms in the Green Guide, the list became long. They conducted environmental audits and action plans, participated in environmental trainings, implemented EMSs, received diplomas (Green Trade, trade associations), analyzed their transports (logistics), reduced dangerous substances, sorted and minimized waste, car-pooled, and more. As noted in the responses to the early information meetings, the managers attending the meetings also demanded concrete and hands-on activities in the project. Environmental issues had to be practical issues. Some of the activities are listed below:

- Environmental audits and action plans, focusing on procurement, transports (logistics), chemicals, fertilizers, oil, waste, energy and more
- EMS work (ISO 14001, Green Trade, industry associations)
- Informational and educative meetings
- Environmental training of managers and resource-persons
- Development of a college course

Perhaps the most obvious traces of greening were the environmental audits. Besides being material traces, they summarized the firms' environmental impact, targets and plans. They stated what was happening in the environmental area in the respective organization. Some of the audits were extensive enough to be used in the work towards an EMS, but if comparing them to ISO 14001, there was a lack of administrative routines. Some firms, however, took their EMS work further and received an EMS certificate in the end. More important perhaps, was that the audits often led to more action, even if some took a break from the environment after the audit's completion.

Along side the audits many organizations also took the opportunity to participate in environmental trainings. Either they attended the informational meetings or the final meeting at Sandsjögården. These meetings included lectures on environmental purchasing, EMS and environmental legislation. Beside those, there were also opportunities to engage Erik or Staffan at the respective firm, designing a specific training for the organization. The project managers also conducted trainings for the resource-persons. Erik, as one of the project
managers, even took the educative aspects further, developing a brand new college course targeting environmental management in small firms. Managers from the Green Guide had also enrolled to this course.

**Driving forces and stakeholders**

The activities carried out in practice were based on a number of imperatives. One of the reappearing ones was the customer. At Bebos, large construction firms represented this pressure; at Malå Järn & Fär, the customer was the benchmark; at Öjeryds, their largest customer made environmental demands; at Baseco, the building contractors fueled the firm’s environmental work; at Sorsele Trä, customers were turning to the FSC-labeled products supplied by the large forests owners; and at Grundnäs Kött, the municipality had started making demands. The customers applying an environmental pressure were also predominantly large organizations and the pressure seemed to have its origin in their environmental work. From one perspective, this meant that there was a pressure to deal with environmental issues on terms set by large organizations.

A problem with this is that it partly separates the environmental work from the context of the local firm, even though customers for sure constitute important parts of the context. Many firms, however, took a critical stance to systems designed for large organizations. There were skepticism and criticism towards ISO 14001 (Bebos, Baseco, Grundnäs), industry associations’ EMS (Bebos, Malå Järn & Fär) and the FSC label (Sorsele Trä). Some also argued that even though these customers applied an environmental pressure, they still saw the price tag before the environment. A common part of the Green Guide firms’ approaches, except perhaps for MGV, was a sense of resignation: Sure, we will work with environmental issues. We really believe they are important. But what is the point if it does not matter when it comes down to business? According to Roger at Sorsele Trä, the FSC, as the current eco-label, was even bad for the environment! From this view, working with environmental issues meant adding to the expenses. Environmental work meant more money going the wrong way.

It also meant that the small firms to some extent surrendered to the challenge. They did not know much about, for instance, the ISO 14001 or about environmental work in general. This might also be a part of the explanation of why small firm managers are framed as lacking capabilities in greening their organizations. What is suggested here is that if these managers are to work with environmental issues as defined by their large customers, they need help. They may be incapable of doing it themselves, at least at the outset. But what arguments lay behind the large firms’ interpretations of environmental work as the thing to do in these small firms? Maybe the small firm managers have different ideas about how to battle environmental problems caused by their activities. In those areas, they might be very capable, at least compared to the larger firm.
So, a skeptical stance towards environmental work did not necessarily mean that greening was unimportant to the local firms. It meant that the environment as defined in the pressure placed on them by their large customers were not clearly linked to the context of the local firms. Sometimes they did not even see themselves as having such an impact on the environment as deserving a full EMS as in ISO 14001. For Baseco, for instance, focus was on satisfying the expectations (displaying a consciousness) from the large customers more than actually greening the firm. They were already green, Monika argued. An alternative use of resources might, though, have resulted in an even greener firm and in a higher consciousness. MGV was, however, an interesting exception to this, as they had decided to proactively approach greening through playing on the large firms' arena. For this firm, the business incentive was strong. MGV also resembled the organizations applying the pressure on the other small firms, being a growing group in terms of employees and turnover. They were on the way of becoming big.

Besides the customer as a driving force, there was a diversity of imperatives in the firms' environmental work. There were, for instance, hints of a legislative pressure (Bebos), an owner pressure (Samhall) and an ethical imperative (Öjeryds). If a synthesis is searched for, however, greening, driven and defined by larger organizations, was seen as external to the small firm. The issues were complex and not easy for an ordinary person to combat. This provided a link to how the project managers and their accompanying students were perceived. When scanning what the participating firms were doing within the project and in their environmental work, they had little time to encounter the matters. They were, in a Lutheran spirit, spending time on the "factory floor". Time was indeed best spent producing. If they were left alone, the environmental work would most likely be set aside. There were more important things to do.

Anders at Bebos referred to Stellan and Staffan, as trying to keep a minimum of environmental work in the organization. There was no time to indulge in environmental matters really, as it meant new expenses for the firm (although Anders actually mentioned the waste reduction, car-pooling and the environmental entrepreneur on the firm's board). A similar impression was drawn from Baseco, where the two students and Erik carried out the environmental work. When they left, there was no time for additional environmental work. Maybe later, but let's see how business takes care of itself first. Järn & Färg in Malå also emphasized Staffan's accessibility in their environmental work. They did not have the time to engage in the environmental work. At Sorsele Trä, they needed assistance and received it from Erik and the students. The environmental work would otherwise most likely fall between the chairs. There had to be someone driving the issues for the organization. Even in the account of the farmers Carina and Kjell, Erik's support was singled out not only as a good thing, but he had even become a mentor in everything! At Samhall, Lars-Gunnar felt alone in the matters. It was not easy for a regular person to deal with environmental issues. Staffan here constituted the support.
The final meeting at Sandsjögården also indicated that the firms wanted an outsider to take the steering wheel and push them in their environmental work.

The project was, however, paid to assist participating firms in their environmental work, but there were few signs of environmental commitments in the firms. The commitment and devotions predominantly lay with those entering the organization from the outside (Erik, Staffan and the students). This might be better than no environmental work at all, but it might also be a problem. Environmental matters are left to a shelf in the manager's office. They are not inscribed in the action undertaken at the factory floor or in the marketing processes. Erik and Staffan, as project managers and representatives for the municipalities, became the fire souls in the project. They made personal visits, rescheduled information meetings (evenings and mornings), adjusted every audit and action plan to the particular firm, enrolled students for extra training, and followed the project through change of ownership and delays in project start to finish and financing. They were floating over community borders, both in terms of geography and social category (business, public, academia). Many project participants also expressed their satisfaction of the two managers. They even revealed some anxiety in asking “how long are we going to keep them here”. But what is more important is that the project managers, in this process, became the participating firms’ environmental managers. Environmental issues were in these cases handled by an external person, which might be necessary for the issues to be lifted onto the agenda in the first place.

As was also brought up by managers in the project, there was a need for collaboration with other firms in similar situations. Networking was also a strategy applied by some firms. Two examples are the Sorsele Farmers and Sågab. Another is the Green Guide per se. A point is, though, that large firms (and MGV it seems) often have enough resources to create positions entirely devoted to managing greening. The small firm, albeit on occasions explicitly considering the issues as important, do not have the slack to devote themselves to the issues during business hours.

Identity

The environmental audits included several indications of how the firms were influencing the environment in a negative way, even though each firm’s impact was small. The environmental work was, as mentioned in all audits, more of a preventive character. They were, though, environmentally destructive, which the managers had no intent of neglecting. They used chemicals, minerals, oil, diesel and more, in their processes. The environmental audits were clear on this point. Following the firm’s impact, there was an action plan on how to combat it. The managers still emphasized, however, their small impact in regard to the larger picture, for instance: we use it minimally (Öjeryds); the oil is very diluted (Basecos); we are the most environmentally friendly sawmill around here, but we do not have any certificate (Sorsele Trä); and, it is mainly about transports...
These examples convey a view of the firms as small actors, not really contributing to the problems. One part of their identity constructions, it seems, was to cast themselves as such, relieving some of the pressure to take action.

Also, if focusing on who or what should fix it, the views often emphasized the presence of external factors complicating the change process. Structures, economic and social, beyond the firm's control, mounted for those thinking about greening. There is a sense of unfairness being a part of the firms' identity constructions. The firms, working with environmental issues, often as defined by larger organizations, are placed in a receiver's position. The firm is cast as a passive node in a large web, spun by others. Responsibility is to some extent pushed outside the firm. This was also evident from the unanimous view on who should drive the environmental work: The outsiders, or the fire souls. This interpretation could, though, be challenged by the efforts by David to stand up against Goliath. There was an emphasis, albeit weak, on the firms as capable of dealing with a greening process. MGV is the most obvious example, constructing their identity through following the environmental management trends and emphasizing the win-win mergers between economy and environment. There were those who also decided to approach it through merging with other small actors in order to become big, such as Sorsele Trä and Öjeryds. What all this suggests is that although there are tendencies in the managers' actions that point at the disadvantaged (business-wise) position they are in, there are also resistance to this identity, pointing at some of the dynamics of identity construction.

In this resistance, there seemed to be a will, or an interest, to change the identity. In the project, things were complicated and the managers did not always agree on the usefulness of a greening process. But there were positive comments to the idea of becoming big through local networks. Why not a Malå-model, Peder at MGV suggested. Elsewhere there were also comments on the lack of cooperation (Samhall, Sorsele Trä, Öjeryds and at the final meeting) on not just around environmental issues, but also in general. Focusing on such comments, the pendulum seems to be swinging towards an identity more characterized by agency. If only networked, they would be better equipped for taking action.

Worldview

The market forces were not really questioned during the encounters. The managers were rather disappointed on the market's way of dealing with what were supposed to be market conditions. In some instances, it seemed as if the trust in the market was abandoning them. Take Roger at Sorsele Trä again. According to his logic, his sawmill should be very competitive, but they were shut out of the market, along with many other small sawmills in the rural areas of Sweden. The Öjeryds farmers were buffering against large-scale farming. Grundnäs was, as in theory, in such a line of industry that they should be close to the raw material. Still, price first, quality later. Anders at Bebos argued that to
clean costs a million, but nobody was ready to pay for it. What they were reacting to was the market’s response to small-scale and local production. It did not pay off, but it should pay off.

On the other hand, they were also aware of that they had a downside when it came to selling their products: They were far away from large groups of consumers. This meant, among other things, a lot of long transports, often by fossil fuel powered trucks. Still, however, large-scale production, as framed in the critique from Roger at Sorsele Trä, cause even more transports. What do these managers do then? They seem to keep trusting the market and, as discussed, they often combine it with a modest faith in themselves as actors capable of changing the situation. This means that their worldviews are mixes of trust and distrust towards the market. The market is the way to go, but it is not working the way it should.

On the environment, the issue is apparent when targeting the reactions to large organizations’ demands on, for instance, some kind of EMS to display the existence of an environmental work in the small firm. The small firm manager, along with the project managers, audited their operations and thereby surfaced their environmental impact. What many seemed to have reacted to was that there were no major problems, which also was the sentence all audits began with. The environmental work was predominantly preventive. The environment was not, hence, an issue. As suggested by a colleague of mine, this might be explained by the fact that the rural citizen has a more “immediate” relation to the environment. What they see is not a troubled environment. They rather see a large and durable environment. How can there be troubles? There are trees, trees, and even more trees. If so, the environment was more than ever out-there.
7 Husqvarna chainsaws

The study of Husqvarna chainsaws began with an interview at Electrolux in Stockholm. Together with a colleague, I met with one of the senior managers at Environmental Affairs in May 1999. Early on he mentioned that they welcome researchers, but lately there had been several studies targeting their environmental work (c.f. Chadwick & Garrod, 1996; Shopley & Ross, 1997; Strannegård, 1998; Sweet, 2000). He therefore recommended one of their subsidiaries, Husqvarna, as an object of study. First, though, he presented Electrolux and its environmental work, which is one ingredient in later understanding Husqvarna’s environmental work.

The Group and the environment

The Electrolux Group, marketed as the Global Appliance Company, is well known on an international arena. Besides the Electrolux brand, the Group has since the 1970s acquired firms such as AEG, Zanussi, Flymo, Elektro Helios, Husqvarna and Wascator. Together with other products and brands, they were at the time divided into three major business areas in the Group: household appliances, professional appliances and outdoor products. Husqvarna constitutes the main part of the outdoor area. In 1998, Electrolux had a turnover of more than 117 billion SEK and employed almost 100.000 persons. The Group’s environmental department, Environmental Affairs, functioned as an independent department reporting directly to the managing director (Michael Treschow at the time of the study, later at Ericsson). Leif Johansson, Electrolux’ former and Volvo’s new managing director, established the department in 1995 and assigned it the task of working with environmental issues in the organization. Our respondent at Electrolux, as well as the respondents at Husqvarna, argued that the definite emergence of environmental issues in the Group had much to do with the initiatives taken by Leif Johansson. He campaigned that the Group had to take a serious approach to the environment. Mr. Johansson was also a keynote speaker, representing Volvo, at the Greening of Industry Network’s conference in Gothenburg, 2002.

Environmental Affairs, though, was not to be directly involved in concrete activities, such as development projects. Every project, however, had to have an environmental coordinator who established a contact with the department. At the time, these coordinators were part of a virtual network in the Group. According to our respondent, there were three imperatives driving the Group’s environmental work:

- Laws and regulations
- Resource- and cost-effectiveness
- Market forces, market consciousness and customer demand
Environmental Affairs basically aimed to make sure that these three forces were considered when subsidiaries, such as Husqvarna, initiated new projects. Of course, the motives were different depending upon the project in question. That is, environmental issues were assigned different weights in different projects. There were examples of product development projects where the issues had been the main driving force. Our respondent mentioned the Husqvarna product Solar Mower, a lawn mower powered by solar cells.

With a single interview and some secondary material, the understanding of the Group's approach to the issues was superficial. The senior manager we met made it even harder when stating that "this thing with the environment is more than the environment". He also argued that using the words "green" or "environment" was many times negative since people perceived it differently. Many saw it as a thing separate from the Group's processes, as another factor to be weighed in. For those people, the environment had to come in a different shape and with a different label. The greening process within the Group was also complicated by the spread of the concept of sustainable development: "A wide definition of sustainable development means that about 50 percent of our product development is driven by environmental issues".

We asked the manager where we could get an insight into their environmental and product development work. He recommended one of their subsidiaries, Husqvarna. We therefore contacted the firm and they arranged a thorough interview schedule for us. Together with three colleagues, I visited the firm at two occasions in September 1999. I also visited the firm by myself at one occasion in October the same year. In total, we interviewed twelve employees, mainly managers at R&D dealing with the development of chainsaws and/or environmental matters.

Husqvarna

Husqvarna was founded in 1689 and has through time developed and produced a wide variety of products, such as weapons, cast iron stoves, meat grinders, waffle irons, sewing machines, bicycles, cooking utensils, chainsaws, lawn mowers and motorcycles. In 1978, Electrolux acquired Husqvarna under the management of the former Electrolux CEO, Hans Werthén. This meant that Husqvarna got the benefit of having the support of a large corporation. After the acquisition, Husqvarna came to represent a significant part of the business area, outdoor products, one of the most profitable ones in the Group. In 1998, it represented 16,4 percent of the net turnover and 29,5 percent of the profit (Electrolux, 1998).

Husqvarna has its headquarters together with the largest factory in Huskvarna, Sweden, and the firm could geographically and historically be considered Swedish. It is, and has been through time, a successful firm. Its turnover increased from around 2 billion SEK in 1991 to over 4 billion SEK in 1998. The result (before appropriations and tax) had since the beginning of the
1990's been climbing to a fairly stable position around 800 million SEK per year. Weighing profits against the total assets, the profitability rose from 17.9 percent to 53 percent between 1991 and 1994. In 1998 it settled at 28.6 percent. Throughout the 1990's Husqvarna has employed between 1500 and 1900 people.

The firm's tradition is rooted in the late 17th century, a fact made evident in the Husqvarna museum. During my second visit to the firm, together with a colleague, I was given a tour of the museum. It was located about a five minutes walk from most workspaces at the site. For me, visiting the museum was a trip back in time. Our guide, a long time employee, showed us how the firm's product range had changed through time. From the tour, it was evident that since Husqvarna became a part of the Group, the firm's product supply had been concentrated to forest and garden work. Many of the other products, produced before the acquisition, were still produced with the Husqvarna brand, but through other subsidiaries. Our guide also pointed out that many products had their stories, myths and legends. Coming back from the visit, stories in my own close surrounding became visible to me. A friend told me about how his grandfather took better care of his Husqvarna rifle than his wife and how the rifle was always faithfully tucked by his side during his many walks in the forest. Another close friend, although slightly older than myself, enthusiastically explained the feeling of driving his own Silver Arrow, which was a very popular motorcycle among young men at that time. Surrounding the motorcycle exhibition at the museum, where this particular motorcycle was displayed, were trophies from world championships and local Swedish races. It was apparent that the Silver Arrow was not just a motorcycle. It was a symbol of freedom and independence, a way of life.

During the visit it also appeared to me that it was hard to put the finger on what Husqvarna was doing and had done through time. Being educated in a business school, I had learned the importance of focusing on core competencies, but what about Husqvarna? Were they in the business of developing two-strokes engines or was it things you can do with iron? Did they try to solve matters of transportation (bicycles and motorcycles) or to improve the household's ability to effectively produce food on the table (rifles and cast iron stoves)? To add to the confusion a display showed that they had produced 1,1 million ice cream machines! According to our guide, a simple explanation was the inventors and the early focus on craftsmanship. The museum was a tribute to this and the visit gave a feeling of perpetual product development and innovation.

In search of a contemporary Husqvarna focus, the firm's business idea was to develop, manufacture and market powered-driven products for forest and garden usage. At the time, the firm manufactured several thousands units per day. The Husqvarna organization in Sweden developed and manufactured products within five main product categories. The first category is the focus of this study:

- Chainsaws
- Power cutters
Trimmers, brush cutters, hedge trimmers and blowers

Riders

Robotic mowers

The chainsaw and its market

In 1959 the first chainsaw, Husqvarna 90, saw the light. It was, however, not until 1975 that the real breakthrough came with the Husqvarna 162. The forest industry in Sweden was very strong at the time and Husqvarna had developed a close relation with the workers. The firm has ever since considered itself in the forefront of product development in the area, but the modifications that have been made are not easy to spot for an untrained eye. The 1975's chainsaw looks quite similar to one of the modern saws. One design manager responsible for one of the product categories even stated that: "There is nothing revolutionary in our products compared to 15 years ago". In the same breath, though, it was argued that: "The function could be revolutionizing even though they look the same on the surface". In this case, reference was made to the chainsaw development process' complex mix of considering power, weight, manufacturing processes (machines, tools), vibration, emissions and ergonomics.

Together with a re-structuring of several individual products into a product family in the middle of the 1970s, the breakthrough design in 1975 constituted the dominating changes the products had experienced. During the last decade the R&D staff had continued to "clean up" the product supply by working with platforms, or basic product families, since there were too many different products in the integrated supply. An important motive behind this change was to improve the economy of the process. This had not been easy since the Group acquired Jonsered and Partner, two other Swedish chainsaw manufacturers. It led to increased complexity when developing and creating product families. Three corporate cultures and three product programs had to be merged. At the time, the product supply had been narrowed down to two basic chainsaw families, one Husqvarna and one Jonsered.

As mentioned, the chainsaw is a complex product. It has to meet a lot of requirements from legislators, users, owners, technology, certifying organizations, the firm's infrastructure (machines and tools), and climate. For example, the last factor, climate, means that a chainsaw must be able to handle minus 40 degrees Celsius in the North American or North Scandinavian spell of cold weather and plus 50 degrees Celsius in the humid Brazilian rainforests. Simultaneously, the chainsaw itself reaches several hundred degrees in some components when used.

One design manager emphasized that it was difficult to get any sympathy from the market department and legislators on this matter: "It is a huge problem in getting people to understand this". Some legislators did not comprehend why the firm did not improve faster than they did. It should not be so difficult: "You almost have to take a defensive position, or at least try to explain that it is a slow and encompassing process to make new ground", he argued. The firm's
infrastructure also provided a limit. It was estimated that it took about ten years to change all the equipment in the manufacturing process. These factors, among others, led to an encompassing development process. Developing a new saw could take about four to five years. Through its reorganization the firm had tried to make it more efficient in terms of reducing time and costs.

Husqvarna’s chainsaws were nevertheless at the top end of the world market. At the time, the firm was selling all products it managed to manufacture, limited by the access to tools necessary in the manufacturing process. In the area of professional chainsaws, Husqvarna had one main competitor in the German firm, Stihl. According to Husqvarna, the firms together had approximately 75 percent of the world market. The market context was characterized by stable conditions, which was partly explained by the Group’s acquisitions, resulting in a reduced amount of competitors. The situation could therefore be considered one of oligopoly, but there were smaller competitors on local levels throughout the world. They were nowhere near the size of Husqvarna or Stihl, though.

From a broad perspective, Husqvarna had two different customer groups in the chainsaw category: professional and private users. This grouping was based upon how frequently the customer used the saw, under what circumstances it was used and how it was delivered to the market. A professional user might use a chainsaw eight hours a day, five days a week. A private user might cut down a couple of trees and saw them into firewood each year. The private user can choose a day with pleasant weather, but the professional user cannot let climate dictate too much of the working week. Bringing the products to the market was mainly done through 17,000 retailers worldwide and as stated by one of the product managers: “We are feeding a specialized retail trade with service and maintenance, while we get a small piece of the cake”. Husqvarna’s relations to the market were therefore mainly characterized by business-to-business, but there were also continuous surveys of end users in order to constantly keep up to date with how the firm was perceived. As particular attention was dedicated to the main competitor, Stihl, there had been some surveys comparing the two from an end-user perspective. In these cases, according to Husqvarna, Stihl was perceived as more technical, top down, authoritarian and inflicting, while Husqvarna was perceived as more innovative, flexible, sensitive to customers and less ostentatious.

The organization and its R&D work

When discussing R&D work with the respondents, there seemed to be a particular pride in the firm’s history. The firm had 300 years in its backpack, which according to many of the respondents was “in the walls”. One of the R&D managers said that: “There is a strong pride here and you do not want to be the one who reversed a 300 year trend of success”. The Husqvarna pride was also present in conversations about the quality of Husqvarna’s products, but being part of the Group had also enhanced the concern for profits. One respondent
argued that: "Towards the Group you feel the demands for profitability, but towards Husqvarna you feel for the quality of the product".

The firm was growing in terms of sold products and the vice president of R&D stated that "concurrent with our growth there is a need for routines and structures". When looking back, the vice president summarized some obvious, but non-exclusive trends influencing the R&D processes. First, there was a matter of simply producing the product. Then it became an issue of performance, followed by a focus on cutting costs. Later on, demands on product safety were highlighted both regarding the working and the natural environment. At the time, this mix was the reality for a product developer at Husqvarna. The R&D work was also predominantly concentrated to the R&D department. As one of the staff stated: "Everything is done within these walls". The absolute majority of the R&D staff was mechanical engineers, which was partly explained by the fact that new technology was not on the agenda. The focus on engineers could also be exemplified by a hearsay in the R&D department: no one gets hired unless he had a tuned up moped at the age of 12.

With a need for new routines and structures, Husqvarna was reorganizing the working organization. They were therefore in between things, which complicated this account. The reorganization aimed at making the R&D work less functionally focused and more process oriented. One part of this was the implementation of the Electrolux project manual, the Integrated Product Development Process (IPDP). This was initiated in the early 1990's and Husqvarna was one of the first subsidiaries to implement it, but: "The model was not imputed on us. The basic idea with the model was good, which was why we adapted it" (the vice president of R&D). In the beginning, there was some initial inertia in the system, but many of the R&D staff argued that the manual had developed into a matured working system in the organization. There were, though, some contradictory arguments, as the administrative load had increased with the new manual: "The firm has not grown out of routines and it is starting to become a strain now" (a design manager). The IPD (Husqvarna had removed the last P) was process oriented and sequential in theory. The administrative manager, responsible for supporting the model, presented it as based upon four key words: quality, innovation, precision and efficiency. The vision was to cut lead times, create value and a project culture within the organization, as well as to enhance cooperation between people in the organization. It was also recognized that implementing the manual would make the project work stricter, but this was seen against the savings the firm would make due to more efficient use of resources. An innovative culture was still important.

At the time, trees were cut with a chainsaw, tomorrow it might be something else. The R&D staff argued that there were no signs of changes in techniques. Batteries were no alternative, although fuel cells might be of interest. A bit ironically expressed by one of the product managers: "The day the car sail through the air, then we will cut trees with a flashlight". There was no anxiety of being caught by surprise either: "If trees are cut in a different way, we will be
there” (the vice president of R&D). They were, however, also sure that if, for instance, the fuel cell technique made electronics replace mechanics, they would have to form an alliance with a partner who managed this type of technique. Doing it on their own would be too expensive, which was why they used such a strategy in the case of the Solar Mower.

In the IPD process, pre-development was one of the early stages and as a way of guiding the development process the IPD included a set of checkpoints (CPs). A product was ready for an industrialization phase when it had passed CP0. From this moment on, there should be no surprises. The respondents stressed that Husqvarna was investing a lot of resources into making sure that as carefully prepared ideas as possible entered the industrialization phase, where machines, tools and other equipment were invested in. The vice president of R&D speculated that about 50 percent of the problems encountered in the IPD process would probably be solved through this, which was labeled front-loading. CP0 was therefore perhaps the most important phase in the process. The administrative manager supporting the IPD illustrated their aim:

![Graph showing front-loading of product development work](image)

Figure 7.1: Front-loading the product development work

It was, though, emphasized that following the IPD did not guarantee a good result. A good result was based on common sense and the actors’ knowledge.

**Working with environmental issues**

Husqvarna worked under the Group’s environmental vision and every product line manager, for instance, was responsible for preparing an action program to insure that it was transformed into action. The vision reads as follows (Electrolux, 2000):

Protection of the environment is a key to long-term survival for the individual, for corporations and for society in general. All our activities must be adapted with regard to the limits that nature can accept in the form of resource consumption and pollution. Care for the environment will be a continuous component of our operations as well as the hallmark of our daily work.

Growth in consumption of non-renewable raw materials and natural resources cannot continue indefinitely. Our operations and our products must be integrated in
a cycle, so that we can satisfy the needs of our customers without jeopardizing the prospects for future generations. The keywords for our operations are therefore resource efficiency and recycling. We are going to meet our customers’ expectations for safe, environmentaly sound products, and we will actively distribute information aimed at stimulating demand for these products.

Good profitability generates resources for the development of technology that makes a dynamic contribution to a harmonious relationship between society and nature. Resource efficient production and far-sighted product development will contribute to maintaining our competitive position in the future as well.

The Group’s vision was accompanied with the environmental policy, which broke down the vision. It focused on seven key concepts: responsibility (to the needs of society and to sustainable development), precaution (to activities that might have a serious environmental impact), total approach (a life-cycle approach), preparedness (to meet future environmental needs), priorities (to our environmental investments on the basis of what is most appropriate in terms of ecology), market-leader (through active, far-sighted research and development enabling the Group to offer products that meet high environmental expectation), and profitability (a prerequisite for environmental activities, generating resources for investment and development). Husqvarna, however, had statements of its own too:

As a company working with products intended for outdoor use, it has always been natural for us to take a great interest in environmental issues. Long-term it is not enough to have the best products to maintain our position as a market leader, we must also be the best regarding environmental issues. (Husqvarna homepage, 1999)

Environmental issues were considered an important area for the firm. In secondary sources, such as product catalogues, environmental reports and homepages, it was pointed out that taking care of the environment was a task that the firm was working with and would continue to do in the future. The organization displayed a wide range of signs that environmental issues were a part of the processes as well as in the communication with stakeholders. Environmental management system, environmental product declarations, green index, green range, environmental load unit, environmental coordinators, environmental committee and eco know how, are some examples. There was also a natural connection to the environment, i.e. forest and garden.

Husqvarna’s environmental coordinator singled out four stakeholders in their environmental work: customers, owners, employees and NGOs. Legislative bodies were not among the four actors, but this was, according to the coordinator, not really the case. Legislation was not left out, but seen as originating from actions of, for instance, customers and NGOs. Legislation did not just pop-up from nowhere. One of the construction managers stated that although environmental concerns were a driving force when developing new products, “what we are fighting with today is not environmental issues, because Stihl will solve them too”. It was rather in the areas of the chainsaw’s guide bar
and chain that the main chances of achieving a competitive advantage lay. The manager continued: "If we would find something in this area, than we would wipe the floor with them".

Another view of the market as a weak driving force was, as argued by some of the R&D workers, that the market took for granted that the products they bought conformed to existing emission restrictions. They therefore considered other qualities of the products. In the words of a construction manager: "The market is not ready to pay one extra crown for environmental improvements". This made it difficult for Husqvarna, they claimed, to stress environmental issues in relations with customers and retailers. It was also emphasized that if the costs increased too much, it left little room for environmental improvements. One example, though, where costs and environmental improvement went hand-in-hand was when Husqvarna developed and installed catalytic converters in a chainsaw model. The catalysts improved the emissions radically and reduced the costs by a factor of five. The development of catalysts was also motivated by the working environment for the users, as the saw and its user are intimately bound together when working.

One respondent at Husqvarna argued that many products lay ahead of market demand and environmental legislation. The vice-president of R&D claimed that the firm was 10 to 15 years ahead of legislation in the cases of, for instance, the Auto Mower, the catalytic converters in lawn mowers, riders and in some professional brush cutters, and the E-tech solution in trimmers. The R&D workers targeting environmental matters, however, despite the environmental coordinator's focus above, perceived regulatory demands as an important motive. This as they were mandatory and as they provided a framework for the organization to work within. Two legislative bodies that Husqvarna focused closely on were the California Air Resource Board (CARB) and the United States Environmental Protection Agency (EPA). They had since 1995 been the toughest legislative actors and the key issue from Husqvarna’s perspective that they were communicating was emissions.

EPA had a general interest in legislation concerning the environment (EPA, 2000). The laws Husqvarna focused on dealt with emissions from non-road motor engines, or more precisely, ground supported motor engines (such as lawn mowers and riders) and hand held motor products (such as chainsaws and power cutters) with a power of less than 25 horse-power or 19 kW. The key legislations for Husqvarna were the EPA1, which provided limits for carbon dioxide, hydrocarbons and nitric oxides, and the EPA2, which was a tougher version of EPA1. CARB also legislated in a wide range of areas (CARB, 2000). What Husqvarna was concerned with was the CARB1 and CARB2. CARB1 had a similar content as EPA1 and Husqvarna conformed to both these laws. One trimmer model was at the time going through a certification according to CARB2, which took effect in the beginning of 2000. EPA2 had just been announced and it would start to take effect in 2002. There was, though, a phase-in period in some areas until 2007 and in some cases even into 2010. The law was
met with some irritation by the industry, as the time between announcing it and the time it was supposed to come into force was too short. Husqvarna did not feel that they were given enough time to respond to the new legislation. The design manager in charge of following the legislative processes claimed that: "We did not know the level [of EPA2] and in which way it was going to be, and when we are dealing with a lot of money in projects, tools and development, we cannot take any chances. We cannot take any chances. We need to know."

It was also mentioned that EPA was an organization with ability to follow-up on its conforming actors (the firms). Recently they visited Husqvarna in order to test the firm's products. According to Husqvarna it went very well and they had nothing to complain at. One of the managers in R&D spent, as mentioned, a large amount of his time monitoring the legislative processes, both abroad (EPA and CARB) and nationally. He was also a member of the International Standardization Organization (ISO) and the Swedish equivalent the Swedish Mechanic and Material Standardization (SMS). The contacts with ISO had at the time more to do with ergonomics than environmental issues, but emissions were discussed. Being actively involved in processes leading up to a new law was a prioritized activity within the firm. The ambition was to stay ahead of legislation and avoid being surprised by new laws affecting the firm. However, there was also a downside to it according to the manager in question: "It cost time and money to chase the authorities".

There were also some discussions about future legislation and about the two-stroke engine presently powering the chainsaw. This engine left about 20-30 percent of the fuel un-combusted and some respondents feared a future legislation in the US forbidding the use of the engine. A four-stroke engine combusted the fuel more efficiently, but it could not be implemented since the saw became heavier and could not be turned over due to the necessary lubrication. Speaking about fuels, the manager quoted above also mentioned that Husqvarna supplied an environmentally sounder alkyl fuel produced by Aspen. The chainsaws also had to be able to function under different conditions and some areas have a poor supply of quality fuels. This made the firm test-drive chainsaws on a variety of fuels, such as low-grade fuel, ethanol blend (own-made) and Aspen. The firm also had, as a good example of reducing the use of fossil fuels, developed a vegetable oil for the chain.

Besides being powered by different fuels in practice, the chainsaws were also serviced "in the field" to some extent. Professional users often reused the chainsaws. Many had established their own reusing process when they often possessed two or more saws and picked parts from older ones when servicing newer ones. According to some respondents, Husqvarna could not arrange a reusing cycle since there were several thousands independent and international retailers. They all had to be a part of a coordinated cycle in order for it to work.
In order to keep track of how the environmental work evolved, a Green Index had been developed. It included four categories: noise, exhaust emission control, energy consumption and material. The categories were weighed differently with a higher weight on emissions and noise (0.3 each) and a lower weight on energy and material (0.2 each). All figures in the index were linked together. If you changed one, the others would automatically alter. In order to reduce the volume-weighted index, which was an ambition, the firm had to sell a greater share of products that were better from an environmental perspective. The purpose was also to use the index in the ISO 14001 system to measure continuous improvements.

Another tool used to track the environmental work was the Green Range, which consisted of the firm’s best products from an environmental view. These products were followed-up with separate statistics and evaluations. The firm could thereby analyze whether or not products with an environmental profile succeeded or failed compared to other products. Green Range was defined out of the total supply of products and constituted about 20-25 percent of the supply. Examples of products that were included in the range were the Solar Mower and the E-tech products.

The construction side of the R&D department had also developed environmental product declarations for every product. They were supposed to declare the products’ content, performance, packaging and distribution, recycling and disposal, and if the products had been certified according to any environmental label. A declaration was about one A4-page of text and one example of such a declaration is here taken from a chainsaw. In it, a reader finds out that, among other things, between 35-39 percent of the chainsaw is made of steel, the average emissions of CO is 335 g/kWh, the chainsaw is in 59 percent of the cases distributed by truck, and approximately 80 percent of the product’s weight is recyclable. The information is quite easily understood, but there are facts that might be perceived as hard to interpret even though it is deliberately presented in an accessible fashion. As one design manager asserted: “Energy, power, economy, kilowatt are quite comprehensible, but specific fuel consumption 557 grams per kilowatt-hour is a different story”. In the chainsaw families, there were about 450 different product declarations. In order to keep track of all the technical data concerning Husqvarna’s products, including environmental influence, Husqvarna had also developed a database, Tekdata. It assisted the structuring of the information and one of its advantages was that it made the updating of the information comprehensible. It also served to support the environmental management system, ISO 14001.
A key activity in the environmental work was the implementation of an environmental management system. The firm had chosen to work with the international standard ISO 14001 and there were many reasons behind the EMS work. One reason was to establish routines and structures in the environmental work. Another was to respond to customer requirements better. A third reason was based upon a belief that an EMS would reduce the firm's costs and risks. The system, however, started out as a bureaucratic monster for the organization, but had, at the time, settled on a more down-to-earth level according to some of those working with the system. The ISO 14001 system, however, should, as argued by the environmental coordinator, be considered a mini-level. Husqvarna had yet to obtain an ISO 14001 certificate, but according to the plan it would be received before the end of 2000.

In the process of continuously improving the ISO 14001 work the firm had people at every department responsible for working with the system. This was also in line with the environmental chief coordinator's philosophy about not being in charge of the environmental work. The environmental work was supposed to be decentralized and responsibility would be delegated. The core of the firm's environmental organization could therefore be perceived as consisting of several environmental coordinators tied together by issues such as the EMS work. They also met up in an Environmental Committee and this committee was also tied to the virtual environmental network within the Group. The network was on management level and during the time when Leif Johansson was the managing director he used to participate at some of the committee's meetings. Both the environmental coordinator and Leif Johansson were members of the Swedish Society for Nature Conservation (SSNC), which in a way illustrated the belief that other respondents also had: top management's interests in environmental issues was a crucial factor for whether or not the issues would be treated seriously.

Green products and projects

When talking to people working with environmental issues, such as the environmental coordinator, project managers and other R&D workers, there was a belief in incremental changes as an effective way of greening the organization from both an environmental and a business perspective. One example illustrating this belief was the story of "40 being bigger than 70", told by the environmental coordinator. When developing a catalytic engine for two chainsaw models, Husqvarna first tried out one catalyst that would reduce emissions with about 70 percent. They developed a specific chainsaw with such a catalyst. It became quite expensive and only 1 percent of the customers bought the model. The next step in the development process led to a less radical catalyst, reducing emissions with 40 percent. This catalyst was more economic and subsequently installed in one of the product families. It did not alter the price in any remarkable way and the
model sold well. The process could from one perspective be seen as going from the radically improved catalyst, which only 1 percent bought, to a less radical catalyst, which was installed in a standard model making the improvement in emission reduction 40 percent. So, the coordinator's argument goes, 40 are bigger than 70 and incremental changes proved to be better for the environment in the end.

Another example was the case of the Solar Mower, which was too expensive on the market. Because of this, Husqvarna manufactured an Auto Mower, powered by a battery. The Auto Mower sold better than its predecessor, replacing lawn mowers powered by fossil fuels and thereby reducing the impact on the environment. It should also be noted that the people discussing these products argued that environmental products had a particular value in term of the firm's identity on the market. They added to the construction of the firm as possessing an ability to develop new products as well as to take a responsibility for the environment. Another product development project in the environmental area, the E-tech-solution, was in 1997 awarded the best environmental effort/project within the Group. According to Husqvarna's product catalogue (2000) this technique “combine high performance with lower exhaust emissions, low weight and lower fuel consumption. This also makes our engine stronger and lighter than most engines in the same size class”. The E-tech solution was installed in products such as chainsaws, trimmers, brush cutters, leaf-blowers and ice-drills.

Through its parent, Electrolux, Husqvarna had also increased the environmental competence of its employees. One argument behind this was, as with the Mowers above, to establish credibility towards the market. Another was to create a better platform for strategic decisions. The training program that Husqvarna used was the Electrolux Eco Know How. At the time, approximately 100 employees in key managerial positions, in groups of 25, were trained in the program.

Another project that Husqvarna participated in, which came to my attention due to a small statue in the environmental coordinator's office, was a project to save the otter living in the water systems throughout the county of Småland. The Husqvarna facilities were initially placed in a position to make use of the water system in the manufacturing process (water power). Through time, Husqvarna had to a different extent continuously affected the surrounding waters. The otter-project was one way of showing Husqvarna's interest in keeping a sound water system in the region.

*The environment in annual and environmental reports*

The annual and environmental reports represented the Group as such, although Husqvarna had an own annual report. This only consisted of information required by law, however. Husqvarna was instead incorporated in the Group's statements. Studying these reports for a decade back, the chairman of the board,
who was also the CEO, together with the managing director each year dedicated some space to environmental issues, although with some variations. My interest when reading the CEO speech and the area for outdoor products was whether or not they mentioned the environment, what they stated and if it was linked to Husqvarna.

In the 1989 report, the Group was framed as having to adjust to tougher demands from customers and authorities in the environmental area. CFC was taken as an example. There were no mentions of the environment in Husqvarna’s section. The following report again referred to the CFC case, but also stressed an urge to reduce the products’ consumption of electricity, water and dangerous substances, as well as to increase the level of recycling before waste was sent to the scrap-dealer. There were no traces of environmental issues in Husqvarna’s section. In 1991, Leif Johansson together with the CEO noted an increasing demand on environmental adaptation. The recyclability of products and packages, the environmental work as a key to a long-term survival, and the development of environmentally friendly and energy efficient products were highlighted. Again, there was no mention in Husqvarna’s section.

In 1992, the environment was neglected in management’s introductory, but the environmental policy and vision were assigned the last page of the report. In Husqvarna’s section, a Husqvarna chainsaw with a catalytic engine, making the unhealthiest particles disappear, was mentioned. Next year, the environment was also incorporated in the initial statement. The emphasis was on the CFC-debate. In Husqvarna’s section, a battery-driven lawn mower and the MASTER 43 RC, which was lenient towards the environment, were mentioned. In the environmental section, Leif Johansson was quoted saying: “We shall supply environmentally adapted products faster than the consumers demand them”. This had to, however, which was clarified further on, be technological possible and economically motivated. Besides CFC, resource efficient white goods, waste packaging, recycling, and greener outdoor products, such as the solar cell driven lawn mower, the Solar Turtle (yes, Turtle), were on the agenda. Electrolux was also helping out Russia and Hungary in the environmental area. The Group also aimed at training the employees in environmental issues, starting out in the area of white goods.

In 1994, management did not, except for one word, mention the environment in the introductory. In the outdoor section, the Solar Mower (earlier Turtle) was mentioned in a note and presented in a picture. As the other environmental sign, in the section where the Group’s organization was presented, a new staff, Environmental Affairs, was introduced. The following year, Leif Johansson argued that the goal was to be the leader in environmentally sound technology. There were also mentions of the recyclability of products, resource efficiency and effective air filters. In Husqvarna’s section it was argued that the “range of products with catalytic converters is steadily expanding, while fuel consumption is being reduced”. In the environmental section, three parts were highlighted: a strategy for environmental leadership, ISO 14001 and launching
new environmentally leading products. It held many of the Group’s R&D projects as environmentally driven. Among them were Husqvarna’s catalytic converters, and electric lawn mower and trimmers.

In the 1996 report, management mentioned Husqvarna’s E-tech engine as a good example of successful product development. In Husqvarna’s section, previous years’ development work was acclaimed to have led to reduced emissions, noise and vibrations in the products. In the environmental section it became obvious that the Group’s way of dealing with environmental issues had traveled to Husqvarna. The Green Range and the product declarations were Group activities that also became parts of Husqvarna. It was also stated that the Group started using financial ratios when evaluating environmental investments. Husqvarna constituted a good example regarding the E-tech. 1996 was also the year when the Group developed their first environmental report and Husqvarna occupied the main space of the outdoor section. It mainly dealt with the E-tech, which was related to CARB, “the toughest demands in the world”, according to the report. There were also mentions of two additional chainsaw models where a catalyst was installed. Other examples were the Aspen Petroleum, a special oil for two-strokes engines, the vegetable oil for lubricating the chain and the Husqvarna Rider 1200.

In 1997, Michael Treschow, the new CEO, stated that the environmental strategy, based on environmentally profiled products, continues as it was more profitable and more cost efficient than most other activities. In the outdoor section there were no signs of the environment, except for one line under a picture, stating that Husqvarna had developed the world’s first hedge sear with an exhausts emission control. In the environmental section, Husqvarna’s E-tech was mentioned and, although briefly, a rider model as well. In the 1997 environmental report, an American subsidiary, Frigidaire, was claimed to have developed a chainsaw where 50 percent of the emissions were reduced. There were also mentions of the Solar Mower, the E-tech and the Husqvarna Rider 1200.

In the 1998 report, the CEO had professional chainsaws as an example of an area with a continuous high margin. The environmental commentaries in his introductory were a copy of the previous year and there was no mention of environmental issues in the outdoor section. In the environmental section, outdoor products were considered facing demands on reduced emissions, lower noise and better ergonomics. There was also a table of important legislative areas. In relation to Husqvarna, five areas were highlighted: producer’s responsibility; emissions from internal-combustion engines; emissions to air, water and solid waste; the greenhouse effect (for instance the Kyoto-protocol); and the ozone issue (for instance the Montreal-protocol). In the environmental report covering the same year, Husqvarna was in focus due to its cooperation with Aspen. There were also examples of cooperation with a Finnish firm in the area of vegetable chain oil and with Statoil in the area of a less destructive oil for two-stroke
engines. “Why are we doing this?” a product manager at Husqvarna asked. “Because it is good business”, he concluded.

Discussion

When reading the annual and environmental reports, environmental issues did not appear until 1992. With my backstep this means that there were no mentions of any environmental activities at Husqvarna in 1989, 1990 and 1991. Still, the firm later on claimed that they had always worked with environmental issues. Those issues had always been a natural part of the firm. The question is if the environmental activities undertaken before 1992, which was the year a catalytic engine for a chainsaw was launched according to one of the reports, were not worth mentioning? From 1992 and onwards, however, environmental issues were explicit in the reports, just as they were at the time of my visits at the firm.

Greening issues in practice

In the Husqvarna account there were several examples of how the firm worked with environmental issues, especially in their product development processes. Some of the *whats* in Husqvarna’s environmental work provide a point of departure for this discussion:

- Environmentally profiled products
- Environmental issues in the IPD
- Product declarations
- Green Index
- Green Range
- The ISO 14001 system
- Environmental reports (Electrolux)
- Environmental coordinator, the environmental committee and the environmental network
- Monitoring environmental legislation (mainly EPA and CARB)
- Eco-Know-How

According to the vice president of R&D, some products were more than a decade ahead of environmental legislation. The respondents and the reports mentioned the E-tech solution, the catalysts (40 is bigger than 70), the Auto and Solar Mower, and others. From an outsider’s perspective, these examples, especially the Solar Mower and the E-tech, were the most visible signs of Husqvarna’s environmental work. They were also marketed repeatedly in the official reports.

Environmental issues were also a part of Husqvarna’s IPD process. They were on the checklists for the project managers to ponder. This meant that no
product was developed without a consideration of its environmental impact. The IPD posed the critical questions. It did not, however, state what was done, or the level of greening, but it made sure the issues were approached. Other ingredients of the development process were the product declarations, the Green Index and the Green Range, all aiming at the firm’s products. The declarations of chainsaws provided information on the products’ performance and impact. They were also narrowed down through the Green Index, which Husqvarna had developed. The index focused on dissecting the chainsaws into categories for noise, exhaust emission control, energy consumption and material. It provided the firm with a mean for comparing products and for monitoring the environmental impact of their products. It was a concrete tool to keep track of the progress. Based on this information, the products with the best environmental performance were lifted into the Green Range supply, in which they were monitored in terms of market performance.

Another activity was the ISO 14001 work. They had yet to obtain a certificate, but at the time, they were not more than a year away. On my second visit there had been an internal review of the system, which meant that they had established a platform. The EMS was also linked to the declarations and the index. These tools were both means with which they would meet the EMS’ demand on continuous improvements. An organization working with EMAS, for instance, also has to publish an official environmental report each year, but as Husqvarna worked with ISO, they did not have an own report. They were instead included in the Group’s report. The firm constituted the main part of the Forest and Garden segment’s section, which was fairly short (in 1998, it was 4 out of 35 pages). It was, though, as noted above, predominantly environmentally profiled products that reappeared in these accounts. The reports also focused on the firm’s environmental impact, but it was always related to legislative limits and to positive examples of their environmental work.

There was no environmental department at Husqvarna. The idea was instead to disperse it in the organization. The environmental manager, a certified forester, did not perceive himself as a manager either. He was rather a coordinator of the network of managers responsible for the environmental work. There was, though, an environmental committee, which had a link to the Group’s environmental department. Still, the R&D department did the main dealings with environmental issues in practice. The staffs were all mechanical engineers, which was emphasized through a rumor in the R&D department: no one got hired unless they had had a tuned up moped at the age of twelve.

One of the design managers had the task of monitoring environmental legislation. The involvement in those processes was a prioritized activity and “chasing” them was an important input in the product development process. The key legislative actors were located in the US, which might be why the manager stressed the time and money expenses when chasing them. The manager also monitored other legislative actors, but CARB and EPA were specifically
emphasized. The main issue was emissions from using products such as chainsaws.

These examples from Husqvarna's environmental work have a technical emphasis, but there was one example of a more softer strive. This was the environmental training program, Electrolux' Eco-Know-How. It was, however, only mentioned on a direct question and otherwise never brought up by any respondents. I had heard of the program before my visits when reading about TNS. Therefore I knew, which was also mentioned in Strannegård's (1998) study of Electrolux, that the TNS concept was an important part of the program. According to the respondent who mentioned the training, about a 100 out of 1800 had participated.

Driving forces and stakeholders

Electrolux' CEO at the time, Michael Treschow, claimed that the environmental work continues since it is more profitable and more cost efficient than most other activities. The parent's view of weighing greening against costs also influenced Husqvarna. Especially when reading about Electrolux' business oriented environmental ideology. It had to pay to be green. Otherwise there was no future in working with them. The parent also guided Husqvarna's environmental work as Husqvarna had to conform to Electrolux' policy and vision of the environment. Concepts such as Green Range and Eco Know How were also Electrolux' terms. The translation of the parent's view, however, meant that the owner became a key stakeholder and that the market imperative became a major driving force. The Husqvarna-quote taken earlier from one of the official reports explained it well: "Why are we doing this? Because it is good business".

The environment was, as mentioned, but one area of concern when developing chainsaws. In a design manager's account, legislators and critics had a difficulty in understanding this. The chainsaw was made out of several interdependent parts and when changing one part, the others reacted: "You almost have to take a defensive position, or at least try to explain that it is a slow and encompassing process to make new ground". Legislation was another imperative. What the legislative bodies, especially CARB and EPA, framed as an environmental target to be met, Husqvarna subsequently focused in their development process. Husqvarna had also a say in the process, though, especially as they were one of the world-market leaders. There were also the trips to the US and the different committees the firm was a member of. These processes played a key part in directing the firm's environmental work. Judging from the statements, the legislators were not particularly soft in their demands either, but rather the toughest in the world (as claimed in Electrolux' environmental report, 1996). Husqvarna's stance towards the legislators was, however, that change had to adjust to a diversity of aspects, such as made investments in machines and tools, as well as to customer demand and willingness to pay for greener saws. Do
not go too fast, they pleaded. All these aspects have to keep up, which was why incremental steps were preferred. This was why 40 was bigger than 70.

Beside the legislators, there was a particular internal focus in the greening process. There were, in the respondents’ accounts, few mentions of how external stakeholders, such as competitors, NGOs, suppliers and customers, were involved. There was, though, the exception of the working environment and the customer, which made up another driving force. Husqvarna was concerned for the user and from a user’s perspective to work a full week inhaling emissions from a chainsaw did not represent a good working environment. The driving force in this sense was the health of the particular user. It was about customer concern, which was also a driving force in the ISO 14001 work. However, the larger and less local effect on the environment was not as emphasized. Through a green lens, if the user is not exposed to pollution from using the saw, the environment is probably better off too, but the customers were not, in Husqvarna’s eyes, ready to pay one extra crown for a greener saw. In this sense, Husqvarna got environmental adaptation of the chainsaws in on the deal while making it less harmful for the user. Judging from the pressure from CARB and EPA, for instance, the question on how much the concern for the customer guided these developments could still be posed. If customers were breathing polluted air and legislators continuously lowered the legal limits of emissions, why focus on the legislators if customer concern was a main driving force? Should not compliance be an absolute minimum then, perhaps not even on the agenda?

The acclaimed priority of the working environment raised the matter of acknowledging the firm’s products in a wider spectrum. There were few examples of how the firm and its products influenced the environment negatively in the interviews and especially in the official reports. For a layman in natural sciences (me), I understand that their products were powered by fossil fuels and that the saw itself was partly produced with what was recognized as non-renewable and non-recycled resources. They, as all other firms, were also transporting raw material and ready products by trucks and planes to 17,000 retailers worldwide, which ought to contribute to environmental destruction. There were also the issues on with what purpose and under what circumstances Husqvarna’s chainsaws were used. Brazilian rainforests were mentioned at one occasion, but there were no mentions of the devastation of the rainforest, or about the clear-cutting in Sweden. Deforestation is a global issue in the environmental debate. This should perhaps have been a topic for Husqvarna when asked about their approach to environmental issues, or maybe they do not consider their responsibility stretching that far. The environment, however, did not seem to be a driving force at Husqvarna. This leads the discussion to the next topic.
Identity

Husqvarna's identity was, as in all cases, in flux, but with an evident lean towards one side Husqvarna was conveyed as and to be perceived as a capable, modern, responsible and profit-oriented firm. This was the general impression from the respondents and from the reports. As stated, neither the respondents nor the reports made a great deal out of how the firm and its products and processes were influencing the environment negatively. The firm was not, and should not be, identified as an environmentally destructive organization. If this was the case, though, why on the whole work with greening? The emphasis on positives meant that there were several good green examples, but no examples of why the good examples were needed in the first place. The firm's identity, it seemed, was not supposed to be linked to negatives. This might be understandable, but no negatives lead to suspicion on whether or not the negatives have been reflected upon. It might even lead to reduced credibility.

There was a fear of not being perceived as a professional, successful and positive firm, taking responsibility for the environment. This was also apparent at our group discussion during the last meeting when finishing the Husqvarna study. From my point of view, this fear is difficult to comprehend. To my reading, the firm was not a poor example of a mechanic firm dealing with environmental issues, but rather the contrary. They could be considered proactive in terms of innovating within their field. They also supplied products that were far ahead of environmental legislation. The question still is, however: If they were so good, why was the environmental area so sensitive? Why was critique so sensitive and negatives to a large extent excluded? One answer is that there was a pressure, internally (as in the purpose of the reorganization) as well as externally (Electrolux, for instance), to be linked to a successful business organization, not to an environmentally destructive one.

Through the legislators' demands there were hints of Husqvarna having environmental tasks ahead. Confronted with this, however, the firm took on two faces. One had the firm as the pro-active innovator, leading the industry onto a greener path. The other had it as stuck in an inert web spun by others. The respondents asked us to consider system interdependencies (customer demand, machines, tools, technological complexity). The "40 is bigger than 70" story pointed at the system aspects in greening the industry. There is more than technology in this encompassing process, they hinted. The market was not ready. More important in this case was that they framed themselves as not being able to influence this market situation either. It is a paradox. First, the technological innovations are connected to social aspects. The market demanded 40 instead of 70 in this case. It is as if there is a demand objectively out-there, which they managed to find. 40 were right. 70 were wrong. It was nothing they took a part in creating. There is a disconnection from the market. On the other hand, as an innovative firm, they supplied products that were way ahead of legislation and customer demand (Solar Mower, for instance). Along with the basic idea of
running commercials and campaigns, the mere existence of the Mower on the market ought to have an impact on what customers might think of demanding from lawn mower producers. That is, the firm plays an active part in what the market becomes.

A similar case is the environmental legislation on emissions. One driving force was the local user's health. Husqvarna, however, still monitored legislation aiming not only at a particular group of professionals' health, but also at one of the most noticed global environmental problems we are creating, the greenhouse gases leading to the greenhouse effect. So, the Husqvarna-people tried to create a "more innovative, flexible, sensitive to customers and less ostentatious" identity when it came to the customers. They were following the customer. Nothing else. But change the focus to the legislative arena, the firm was identified as capable of not only being sensitive towards the legislative bodies, but also capable of influencing the outcomes of the legislative processes. In this case, they were perhaps more "technical, top down, authoritarian and inflicting". The point is that although the firm always emphasized its professionalism, its identity was fluent. Sometimes the firm was an actor in the system. Other times it was a nod in the system. Their identity was different depending on issue in focus.

**Worldview**

Husqvarna was at the time under a transformation towards increased market orientation. One example was the product development process, which to a larger extent than earlier was under a standardizing pressure through the IPD. Environmental issues emerged as a factor complicating the development of new products. Power, weight, manufacturing processes, vibration and ergonomics were joined by environmental consideration in making up the factors to consider when developing a chainsaw. The IPD, which was the most visible change in the ongoing reorganization, dealing with the process from idea to manufacturing, structured and routinized the project work. The vice president of R&D argued that "concurrent with our growth there is a need for routines and structure". Mistakes should be front-loaded to the early parts of the process in order to reduce potential future surprises. Nothing would disturb the product once it was on the way.

There were some reactions to this routinization. A design manager claimed that the firm had not grown out of routines and it was starting to become a strain. Striving to control the processes, which do consume a lot of time and money, makes sense. The desire to control and foresee events, however, which, if the development of a new chainsaw is focused, might be up to five years ahead, also gives little room to flexibility and alternative paths. They could not take any chances and they had to know. With this product development approach in the organization, there was a natural overspill on, or embracement of, the environmental work. This area was dealt with in the same manner. When asking
about their environmental work, the main examples given by the respondents were technical tools and systems (the Green Index and the EMSs).

Stretching the technological boundaries of the firm’s core competencies, the firm did not develop radical environmentally adapted products, such as the Solar Mower. This innovation was instead bought and incorporated into the organization (as with Electrolux’ alternatives to CFCs, by the way). Developing and manufacturing such a product themselves would result in new investments in knowledge, machines, tools and other capabilities. The firm was also cleaning up its product supply. Technological feasibility was, as stated by the vice president of R&D, what was possible within the firm’s area of expertise. It did not incorporate flashlights cutting trees, but maybe fuel cells, although they actually constituted an area outside the core competencies. In such cases, solutions would be brought in through alliances with other organizations. This meant that the organization was equipped for incremental change. Still: “If trees are cut in a different way, we will be there”, the vice president of R&D argued.

This made me reflect upon the museum tour, which at first sight had little to do with the firm’s environmental work. The museum did not only house old product models, but also products that at the time were sold by the firm. The variety in the contemporary product supply was, however, not as apparent as my backstep indicated (ice-cream machines, rifles, etc.). This was explained by the concentration of the firm’s product supply, which started in the 1970s. A thought that stayed with me on the way back to Umeå was: Where had all the inventors, the craftsmanship and the diversity gone? Of course, the modern business discourse was apparent at Husqvarna. The organization faced a financial pressure from its parent. The focus on market orientation and core competencies also implied that diversity was not all good. There was also a time-dimension not to be neglected in the tour. The products displayed at the museum were evidence of more than 300 years of product development. Still, products had been outsourced and there was a less diverse supply compared to earlier. It might be explained by the increased complexity of the chainsaw, as the vice president of R&D indicated in his rearview mirror look, that pressured the firm to a particular product focus. If they strived to stay in the top league, they had to focus on a narrower range of products. Husqvarna’s chainsaw market had also grown extensively and thereby also the amount of competitors. This might make a narrower supply more sensible. Technological complexity and globalization, it seems, are two aspects explaining Husqvarna’s core competencies developments.

Technological complexity calls for more expertise. In Husqvarna’s case, only the mechanical expert carried the technical know-how concerning the chainsaw. As the supply narrowed, the expertise went deeper (more specialization). A Swedish entertainer once told an emotional story about his old motorcycle (could have been a Silver Arrow) and the particular joy he got from tinkering with it in his garage. Hours went by as he picked it apart, searching for a missing link. When he finally found it, he carefully assembled all the pieces again. To his aid, he had the enclosed service manual, which, in his view, was written
like a novel, explaining step by step the different sections of the bike. Most of all, the manual particularly emphasized that the person performing the service had to take tender care of all the parts throughout the process. There was a romantic gleam over the entertainer’s account. He then contrasted his experience with another more recent one linked to a modern motorcycle. Facing a similar need, that is, to thinker with it, he noted that his type of craftsmanship was no longer needed. Instead of indulging in a searching adventure for what might be the missing link, as soon as something was wrong, a red light started to twinkle on the instrument panel. Of course there was a manual accompanying the bike and when unfolded, the message was short: Contact the nearest authorized retailer.

It is a simple story dealing with (among other things a reader might read into it) the technological drive in our modern society. It fits well with Husqvarna as well. The story points out that although the modern motorcycle might satisfy similar needs as the less modern one and also for an untrained eye, carries many similar characteristics, they are very different. Husqvarna’s present chainsaws might look similar to the ones from 1975, but under the surface, the innovations are quite radical. The chainsaw’s complexity is high and one consequence is the need for expertise, both at the firm and from its customers. Or, as told by one of the respondents, that although many professional users own two or more saws and thereby manage the maintenance of the saw by picking parts from one to the other, a higher complexity leads to a heavier demand of technological expertise on the user. That type of reuse is complicated the more complex the saw gets.

Basically, the point made with the short excursion above is that integrating environmental issues into this frame is a complex matter. But there is a matter of priorities too. A design manager claimed that “what we are fighting with today is not environmental issues, because Stihl will solve them too”. Husqvarna had business and technology, driven by Electrolux and Husqvarna (in that order, i.e. Husqvarna was more into technology, it seemed, while Electrolux, through Husqvarna’s eyes was more into profits), as the main targets. The environment, as conveyed in the discussion on identities, was not reflected upon in the larger more holistic picture. When considered, the environment was broken down into monetary and technologically oriented indexes.
Disposable service sets are traditionally viewed as requiring more resources and as causing larger environmental impact than porcelain service sets, for example. The facts show that the reverse is actually the case. This is due to two factors: product development and new production techniques. These two areas mean that many old environmental truths are no longer valid. (The CEO in Duni’s first environmental report, 1995)

In September 1999, an initial contact was taken with Duni and I went back to the firm’s department for Corporate R&D and Environmental Affairs on two more occasions, in October the same year and in March the following year.

The Duni organization

Duni has its origin in three industrial communities in the Swedish county of Dalsland, where it started its production of napkins and paper drinking-cups in 1949. Mainly due to acquisitions between 1970 and 1982, the firm grew. In the late 1980s focus was laid on meal service and products for the laid table. The firm was at the time (it has changed since then) owned by a partnership between two powerful Swedish families, Bonniers (Tidnings AB Marieberg) and Wallenbergs (EQT Scandinavia). They had an equal share of the Group. They had also decided that the firm should be introduced on the Swedish stock exchange. Since the early 1970s, the Group has doubled its turnover every fifth year. In 1998, the turnover was 5,45 billion SEK. This increased with about 2 billion in 1999 when the firm acquired De Ster from Belgium, one of Duni’s largest competitors. The Group has since 1990 on average employed more than 4000 persons of which about 40 percent have been located in Sweden.

The latter years at Duni have been marked by a focus on core competencies, which was why the Finnish candle manufacturer Havi was acquired and the packaging manufacturer Stenqvist was disposed. This focus led to, among other things, a reorganization of the firm, which was in process during the study. At the time, the Group consisted of four result-oriented units, representing four different market segments:

• Away-from-home (professional customers);
• At-home (households);
• Paper mills and product supply;
• De Ster (catering mainly).

Duni’s customers were predominantly based in Scandinavia, but there were also customers throughout Europe and the U.S. The firm supplied a wide range of paper and plastic products connected to the laid table. The Duni brand also seemed to be well known to the Swedish public. Since Duni became a case in this
study, I have started to note that there are usually Duni products in my friends’ households and in visited workplaces’ lunchrooms. I even found napkins and candles in my own home with the Duni brand on them.

Despite its core competence focus, however, Duni’s supply was diverse. Some examples of products manufactured and sold within the Group are: cups, dishes, bowls, plates, lids, antique candles, nightlights, torches, chandelier candles, knives, forks, spoons, table-cloths, napkins, filter bags and aluminum foils. Besides the laid table, another common denominator was that the products were mainly intended for short-term usage, which frequently led to comparisons to non-disposable articles. Duni had therefore often been related to a consumer mentality and subsequently become a target in the environmental debate.

Regarding the four units (market segments), it was argued in official reports that the paper mills constituted a long-term strategic basic resource within the Group. The other three units were, in contrast to the paper mills, closer to their markets and therefore scattered on an international arena. The away-from-home segment focused on professional customers such as hotels and restaurants, whereas the at-home segment targeted households. Those were predominantly reached through large and well-known Swedish retailers such as ICA and KF. As Duni operated within a range of markets, it was difficult to find “true” competitors to the firm. The respondents could not mention one single competitor with the same product and market mix as Duni, but there were firms supplying similar products within each of the segments. When pondering this issue, a manager coordinating new product ideas started drawing a matrix, which quickly grew in size. On one side there was type of product (napkins, candles, catering) and on the other there were names of competitors. Some of the competitors listed were: Popstar, Herlitz, Lotus, Giesgruppen, SCA, Fasana, Tiffany, Liljeholmens, Nokia, Metsäsärle, Mölnlycke, Procter & Gamble and PLM. Some are very familiar brands (to me), but Duni’s name does not fit with all of them, even when knowing its line of business. Duni’s role in each market segment was different, though. Focusing on, for instance, napkins, it was appreciated that Duni had approximately 60-65 percent of the market in Sweden. In the area of catering the largest competitor (De Ster) had, as stated, been acquired.

The De Ster affair had created some uncertainty at Duni in Halmstad and before diving further into Duni, it should be stressed that the time of this study proved to be special. Since I completed the case my three key respondents either quit, retired or got transferred. I do not know the story behind them all, but the transfer was most likely a result of the De Ster acquisition. This mainly affected the feedback from the respondents and despite receiving some comments on an early two-page draft (see Sandström, 2001c) there have been few notes on the text by Duni managers.
**R&D work**

The predominant part of the R&D work was located to the R&D department, a department located in Halmstad, Bengtsfors/Skåpafors, Kisa (all three in Sweden) and at De Ster in Belgium. The staffs at the paper mills in Bengtsfors/Skåpafors and Kisa were mainly concerned with developing products within their product categories; De Ster with plastics; and Halmstad with plastic and cardboard products. Due foremost to the acquisition of De Ster and the ongoing reorganization process to make the organization more market oriented, the R&D organization was under reconstruction. The respondents drawn upon here were all situated at the department in Halmstad, which housed about 20 employees. The majority had an educational background in engineering. Some worked with the hard assortment (cutlery, for instance), some with the soft (napkins, for instance) and others with covering and watching new patents.

Duni was a spearhead in R&D. According to the vice president of R&D and Environmental Affairs (RD&E) Duni had led the development of new products in its field since the 1950s. This was especially the case in the area of paper fibers and plastics. Behind this development, several interviewees argued, lay a tradition of skilled engineers and a particular will to develop new products. The vice president also claimed that the development of new materials was mainly a technologically driven process. But when discussing the innovation process with a project manager and a manager coordinating new product ideas, they argued that the organization was in a tussle between market and technology. The project manager drew this simple picture illustrating the tussle:

![Diagram](Technology-Market)

**Figure 8.1: Two sides of the Duni organization’s competence**

There was no question, however, that despite the diverse views in the organization, the main reason behind the reorganization was to make the organization more market oriented. The degree of market orientation was, though, a matter of which segment was focused, as they worked under different conditions. The at-home segment had an outspoken strategy to continuously develop product innovations. The sales personnel in this area wanted new products to display at every customer visit. The R&D manager responsible for coordinating development within at-home claimed that: "You are supposed to associate Duni with new and fresh ideas, and development within this segment is about changing the products in order to give them a news value". The changes made in at-home's products were therefore of a more incremental character compared to away-from-home, where changes were less common. Once made,
however, they were more encompassing. The vice president of RD&E argued that:

...within the at-home segment there is a need for novelties, preferably every year, maybe even every season. We already manufacture different colors and patterns for every season, so we have a continuous changeover all the time. There is usually a major change in quality every year within this segment, but within the large-scale household segment there is a need every third year or so. Although this should be more radical as it often has to do with changing the paper process, and you do not turn a paper machine around in a week. It demands a couple, maybe three years of preparatory work and then the actual reconstruction takes a couple of weeks, sometimes up to a month.

Reorganizing these processes was not easy. An R&D manager within at-home also emphasized that project work and market orientation were important areas, but not necessarily true companions: “The classical problem when managing development projects is that it is always a lower priority on the project than on the operative. The reality in a market driven organization is to make money and at the same time you are supposed to work in a matrix organization.” In order to support and structure the project work, Duni started in 1996 to work with a project manual, labeled “Duni World Class Project Leadership or something like that” (a laboratory manager). The model aimed to assist all types of development projects, from implementing a new computer system to constructing a brand new paper mill. In practice, a couple respondents argued, project managers usually picked parts they thought were attractive in the manual and adjusted it to how they actually worked. One R&D manager argued that the model left the organization untouched: “It has no soul in it. It is just an administrative system to handle it”.

Another aspect in the reorganization of the project work was to make the product development process quicker and more cross-departmental. An important part was the new project manual, which was supposed to challenge the timidity (as expressed by one of the interviewees) of the firm’s project work. The whole organization should participate in the development process and product development should not be a matter solemnly for R&D. The new project process was illustrated by one of the R&D workers (see the figure below). Each box represents a department:

![Sequential and cross-departmental project work at Duni](image)

*Figure 8.2: Sequential and cross-departmental project work at Duni*
The reorganization process also aimed at the organization's multi-project reality. Through time, Duni had managed a multitude of projects and assignments, but not all of them had been completed. This was explained by poor pre-project planning and project coordination. Projects were often scattered and even neglected, and it became a problem controlling the projects. Assignments were cancelled due to the costs of carrying them through, but once a project, or even an assignment, had reached the investment phase, it was rarely abandoned. This as the whole process was difficult and expensive to reverse. The reorganization would deal with this and reduce the amount of projects and assignments.

Following a project, the process consisted of two overall phases, an idea phase and a carrying through phase. Within these phases there were a number of passages, or tollgates: "A project shall not pass through a tollgate without having the whole organization behind it" (an R&D manager). The project group therefore had to have the steering and the working committee behind them. The steering committee, or the R&D board, was made up of market, sales and production managers, and the vice president of RD&E (the idea of cross-departmental cooperation was emphasized): "We are supposed to discuss in which direction we should develop new products. The idea is to make it market dominated. It is the market's demands that are supposed to be satisfied" (the vice president of RD&E). The working committee consisted of all the project managers and they met every sixth week to discuss general issues influencing the organization's project work.

In the idea phase, the issue was the potential of a new product idea. One of the laboratory engineers said: "A steam-engine is not suited for Duni, even if we would make money of it". This phase housed two tollgates. The first one included grading the idea (+ 0 -), conducted by the R&D board. If an idea got a minus, it stood a slight chance of making it through the following tollgates. At the second tollgate, the analyses made by the R&D board were more careful as the potential was appreciated in quantified cost and benefits. It was here the cross-departmental structure paid off:

When you are ready for the carrying through phase of, for instance, a new tablecloth, which should be ready in 2002, and even though we do not know exactly how it will look like, the optimal plan is to involve actors early. Product supply, or the manufacturing chain, must be prepared in order to allocate capital for the investments and to have resources available. Sales and marketing must also allocate capital for something they do not really know what it will look like when it is ready. This means that the development plan could be followed and when you arrive with a ready product – it is okay to go. A lot of companies seem to be weak at this. Usually, sales and production are interested, they want information, but they do not allocate any resources! All of a sudden we find ourselves with a good concept, but the resources are not there, so we will loose one or two years. (an R&D manager)
Environmental issues

In at-home's development strategy, the costs of producing and marketing the product were important. The manager responsible for the development within the segment took an example related to environmental issues: "If we develop and launch an environmentally sound product, this means that we will have to spend a lot of money marketing this product. This makes the product more expensive compared to other products and we will have an uphill slope to begin with." The situation was slightly different within away-from-home where eye-to-eye meetings characterized the relations between the sales person and the customer. Environmental issues were often brought into those discussions and the customers were perceived as competent in the area. They were also very aware of costs and quality. Having large hotels, restaurants and public organizations as customers, which in their turn have environmental policies and sometimes even implemented an EMS, made environmental aspects more visible in the development strategy within away-from-home.

There were also examples, at least within tablecloths, where environmental issues had been a particular driving force in the R&D process. There were also some ongoing projects partly driven by environmental issues. Arguments behind these ventures centered on that there had to be good examples in order to build credibility since Duni could not predict public opinion on environmentally sounder products. The public opinion, it seemed, was important to the firm in its environmental work. Another argument behind greening R&D, as expressed in the 1995 environmental report, was: "This is important for Duni. After all, more environmentally friendly production is an increasingly important competitive tool and an advantage in the marketplace."

Balancing the environment

As noted in the introduction, due to the firm's manufacturing of products for short time use, they were often related to a consumer mentality. This placed the firm in the spotlight concerning environmental issues already in the late 1960s. The vice president of RD&E said that the firm immediately became a target of criticism. Consumers often contacted the firm directly in order to ask about products' influence on the environment. As the firm developed its environmental management this was an aspect dealt with on a routine basis. An engineer at Environmental Affairs talked about the changing roles for Environmental Affairs: "Earlier, it was more or less a matter of putting out fires, to inform about products and deal with attitudes about short time usage". At the time, Environmental Affairs instead supported the market department with hard facts to be used when meeting customers. The customers who contacted the firm, though, were to some extent still concerned with the waste of resources symbolized when throwing a cup or a plate away after use.
This situation led Duni, already in the 1970s, to conduct investigations about the products’ environmental load. The studies were often related to similar products intended for long time use and Duni later on systemized these investigations together with a consultant. Through life-cycle inventories (LCIs) of plates, cups, forks and other products, they showed that Duni’s products were at least as good as any long time use alternative. According to the inventories, Duni was not so bad after all. An environmental scale illustrated this. Adding weight to the long time use alternative were: energy used during washing; pollution to air when heating the dishwater; pollution to water when washing; and waste in the form of sludge from the sewage treatment works. Adding weights to Duni’s products were: energy used during production; pollution to air during manufacturing; pollution to water from paper and pulp factories when producing paper and cardboard. The scale symbolized that the two types of products (short and long-term use) were similar in environmental load, but only when the most modern dishwasher was used and filled all the way up. In other instances, Duni’s products performed better. Also, according to the investigations, best practice from an environmental perspective was not to dish and reuse Duni’s products. Instead, they ought to be sent to incineration and thereby become input for transforming energy. The latter also meant, according to the study, that weight was unloaded from the short time use products’ side of the scale: “It takes the same amount of crude oil to produce 1,500 plastic cups as is required to produce 10 litres of petrol. Used plastic cups can be used as fuel for energy generation and thus replace fuel oil” (Environmental report, 1995). The argument that Duni was at least as good as long-term use products, could, according to some of the interviewees only be used to a certain degree, though. The environmental manager explained:

There is no significant difference between our products and a china cup, but we cannot communicate that. Instead we argue that we shall be as good as possible and then perhaps be perceived as a company, which takes the issues seriously. Perhaps then we will get the comparison off the agenda. [---] When choosing a paper napkin or a plastic cup, we do not want the customer to feel that ‘oh, we cannot use this because it is bad for the environment’. They should know that we are doing all we can and instead be able to focus on the color of the product or the nice pattern. [---] It is the same regarding quality. It should already be taken cared of when it is a product from Duni.

In some comparisons, products made by Duni performed better from an environmental point of view, but as touched upon by the environmental manager, this was not emphasized when marketing the products. She mentioned that the marketing manager for at-home had expressed a concern for not stressing this factor. This was something they could use to improve their competitive advantage. Instead, a more humble approach was decided upon. There were, however, some respondents that argued that although some customers might be anxious about the environmental impact of the products, this
particular pressure was not that decisive. The key customer concerns were instead the price and the quality of the product, they argued. The environmental manager claimed that Duni had mirrored this when they from the outset worked with environmental issues as a part of the quality concept: “The important thing for Duni’s products is not the environment, but that we manufacture products with the right quality and that they function as they should”. According to her, this meant finding a balance between quality, price and environment. The environmental manager drew the picture below (although she claimed that she did not use it anymore, but it was also displayed in the 1995 environmental report).

![Figure 8.3: Balancing quality, price and the environment](image)

Returning to the public opinion and the firm’s environmental load, the vice president of RD&E compared their industry’s use of oil with other industries. In the overall picture, Duni’s industry represented, according to the vice president, approximately 0.1 percent to 0.2 percent of the total oil consumption in Sweden. The transport sector was singled out as the largest consumer of oil, but even the use of oil as a source of heating Swedish homes was larger than Duni’s industry. The vice president argued that: “If we would lower the temperature with one degree in all the houses that are heated with oil we would save 2 percent of the national oil consumption, which is ten times as much as our industry use”. On the same topic, the environmental manager stated that: “There are a lot of discussions concerning oil as a finite resource, but perhaps you should not start by kicking plastics out. It might be better to kick out oil used as fuel”. Duni was still targeted in the debate.

Another example of Duni’s symbolic role in the environmental debate, told by the vice president of RD&E, was the famous Swedish long distance cross-country ski race, Vasaloppet. The race attracts more than 15.000 participants every year and Duni supplied the race with cups used at the drink stations along the track. At every station used cups were thrown on the ground and people often reacted to the mess. This was understandable, the vice president argued, as the used cups were easy to detect with your own eye. The reactions were not the same, though, regarding more abstract forms of pollution. The vice president asked if we considered the emissions from cars, buses and planes, which the participants used to transport themselves and their gear back and forth to the
race? This was not questioned. One reason was that the pollution from these vehicles was relatively “hidden” compared to Duni’s products.

Two actors mentioned when discussing Duni’s situation were the Department of Agriculture and the Swedish Society for Nature Conservation (SSNC). Duni had presented its environmental scale and its view on the national use of fossil fuels to both of them. So far, no one had argued Duni’s analysis. The vice president of RD&E said, however, that SSNC and others wanted a symbol that people could relate to in their quest for sustainability. He claimed that:

We do not have an opposite opinion, but they argue that they want a society that looks different from the one we have today and we have to start somewhere. Preferably with something that people are in regular contact with. So, how people handle Duni’s products will constitute a good example of how a resource efficient behavior might look like. When sorting and reusing our products, then one can argue why cars might look different in the future.

Openness

Duni had not driven any major campaigns towards their customers, but instead concentrated their energy on institutions, such as the SSNC. The vice president of RD&E also asserted that the contacts with SSNC and others were a crucial part in Duni’s environmental learning process. He stated: “We must, using common sense, explain and justify our existence”. He also said that Duni did not argue that products intended for short time use were the ultimately best products, but that they were at least as good as products intended for long time use. In this context, Duni had decided to take an overall approach to greening characterized by openness. The environmental manager argued:

It is important that we try to be open… I think we have learnt this from our contacts with the universities. I do not know if we were that open to the customer six, seven years ago. But we have a barrier too. If you ask me how we produce this plastic cup, I would not tell you. [—] There are situations… where you are open, maybe more than you should be, and it proves to be quite harmless. When I started with these ones [the environmental reports] in 1995, the first one was an experiment and the organization was very reluctant to reveal any information. It should be nice and tidy and confidence-inspiring.

The openness had through time proved to infuse a particular confidence in Duni. The environmental manager asserted that this approach was spreading throughout the entire industry. She argued that this was not possible ten years ago, when the attitude towards environmental issues was different. She also claimed that: “I think that lately, environmental issues have received less attention in customer relations and in media”. According to her, this had
liberated some space for reflection. There were also those within R&D that argued that the environmental debate had died off and been replaced by debates such as the one on the mad-cow disease. In the words of a laboratory manager: "It does not matter whether the coffee-filters are brown or white anymore". Such environmental concerns, it was argued, were already taken cared of. It was a different green that was making its way onto the agenda. This green, they argued, was more characterized by hazards not easily perceived by the human eye. This was exemplified in the Vasaloppet-example, where the vice president of RD&E pointed at the tension between local and tangible pollution, and global and abstract pollution.

On visibility in the greening of Duni, the firm had focused on reducing raw materials used in some of Duni’s products without reducing the quality for the user. In the product development processes, this focus on resource efficiency was, according to a laboratory manager, strong. Duni had, for instance, reduced their use of plastic with approximately 20 percent over 10 years, while keeping the same level (or better) of quality.

Organizing the environmental work

At the time, the people working solemnly with environmental issues at Duni were gathered at Environmental Affairs. Together with R&D, Environmental Affairs constituted the Corporate RD&E department. Although environmental specialists had their place in the organizational chart, there were, however, according to respondents at the department, environmental competences throughout the organization. There was also an environmental group on top management level, the Environmental Advisory Board (EAB), where all the business unit managers, the vice president of RD&E and the environmental manager met about four times a year. They discussed and decided on strategic issues in Duni’s environmental work, such as what line of arguments Duni should follow in the matter of gene manipulated starch, the environmental report, new environmental legislation, the progress in the EMS work and the final decision on the environmental policy. The firm’s environmental policy (decided in December 1998) reads as follow:

In Duni’s vision to be a world leader and trendsetter in tabletop products, quality is a key issue. High environmental quality is achieved by adapting the business and products to a sustainable society. We are committed to fulfilling current laws and ordinances and to continually improving our environmental performance. The latter is achieved by resource efficiency and environmental improvements, in line with what is technically possible, economically feasible and environmentally sound. This means careful selection of raw materials, efficient use of resources and energy and minimization of waste and emissions throughout the life-cycle of the product. We achieve this by integrating resource management and environmental issues as a natural part of managerial decisions and, in the process, ensuring a prosperous business. We are committed an open attitude toward customers, consumer, suppliers, other interested parties and, of course, our own employees. We achieve this by
The policy was originally developed and prepared in the KPI group (Key Performance Indices). The decision was taken in the EAB, and then sent back to the KPI group to be translated into concrete activities. The KPI group was an operative forum for environmental issues. The group discussed, to a large extent, the same issues as the EAB. The key difference was that the KPI group focused on preparing what would be discussed in the EAB and on carrying out what had been decided. According to the environmental manager, some of the questions raised in their discussions were: “How should we translate Duni’s environmental policy and strategies into manageable ratios? Are they sensible to account for and to measure? Are we measuring the right way, in a comparable way?”

Environmental Affairs played a key role in the KPI group, as well as in the environmental work in general. At the time, the environmental group housed five people of which one was the environmental manager. She was hired in 1992, which according to the vice president of RD&E indicated that Duni was not caught in any environmental trend. The issues had always been important to the organization and at that time they needed someone to focus closely on them. The environmental manager led the work at Environmental Affairs. Concerning the creation of her position in 1992 (and the environmental policy) she said that:

maybe because you should have an environmental manager and show externally that the company is interested in the issues. There already existed an environmental policy when I arrived, which had been developed the year before. It was actually very good, although we did not conform to it too well.

The 1992 policy contained some of the core parts covered in the 1998 policy, such as the life-cycle approach (or cradle to grave in 1992), the open attitude and the link to high quality. Concerning Environmental Affairs per se, in the eyes of an environmental engineer, it functioned as an internal lobbying group within Duni, promoting environmental issues. This lobbying role was explained by the feeling some of the R&D workers had that environmental issues were not part of the ongoing construction of the organization’s culture. One R&D manager simply stated that: “The environment is not part of our culture”. Environmental Affairs seemed aware of this and therefore explicitly tried to target and market themselves to, for instance, new employees.

Another tool in the process was a continuous environmental training of employees. At the time all employees had gone through four hours of environmental training. According to a handful of the respondents (those who were asked), the trainings were appreciated and well related to Duni’s operations. Staff from Environmental Affairs and external consultants had led the lectures. Environmental Affairs was also in the process of developing a handbook about Duni and the environment, which was especially targeted at procurers in order to better their competence in the environmental field. The handbook carried two
overall purposes: to help them ask the right questions and to save time. Considering environmental issues late in a process had in some instances proved to be a costly venture for the firm, both in terms of time and money. The handbook was supposed to prevent some of those events and it should also make the procurers more independent of Environmental Affairs.

KPI was not only a group per se, though, which the acronym might indicate. Duni’s Key Performance Indices were developed in order for the firm to measure improvements in the environmental work. The indices consisted of different environmental effects, which were divided and measured in the following areas: the raw material consumption, energy use (electricity, fossil fuels, bio-fuels), production, emissions to air (CO2, S, Nox, VOC, styrene), water and water effluents (COD, suspended particles, P, N, AOX), waste (for recovery, for landfill, hazardous), and transports. The index was encompassing and it was supposed to be used in the continuous improvement target in the EMS work.

ISO 14001

The firm started its EMS work in 1995 and immediately considered ISO 14001 as the system to work with. ISO had made a draft and it became the starting point. It was also noted by the environmental engineer in charge of supporting the development of the EMS that Environmental Affairs was not responsible for the different units’ conformance to environmental legislation. This was up to the respective unit, but they could, or they should according to the engineer, utilize Environmental Affairs as an adviser. This meant that every production manager was responsible for managing the working environment, the products and processes’ influence on the environment, and the waste disposal within their respective unit. All the different parts of the Group were thereby responsible for implementing the management system. Environmental Affairs constituted a resource for them to utilize in the process.

One of the reasons behind implementing an EMS was the need to externally build credibility. A management system was one way of doing it. In the ISO 14001 standard, the environmental work must conform to existing legislation and the environmental work must make continuous improvements. Apart from this, the firm sets their own limits and goals. Duni had decided to set its targets beyond legislation, although not too far away. So far, according to the environmental engineer, the environmental auditors had not complained. The engineer, who together with a colleague at Environmental Affairs, also were qualified environmental auditors, expressed his disliking in claiming that the firm shall follow existing legislation as demanded in the ISO 14001 work. This should be obvious for any firm he argued: “It should instead be a matter of ‘beyond legislation, we shall…”’

The EMS was not the only management system Duni worked with at the time. They also worked with systems dealing with quality, hygiene and workplace safety. This meant that there were several independent management systems to
manage and coordinate. Duni had therefore started to merge them into one system and to make them a part of an integrated business management system. Choosing ISO 14001 before EMAS was a priority based on this since ISO was easier to integrate with the other systems. At the time, this approach was appearing on a global level throughout the Group, but had yet to disperse on local levels.

Legislation

A driving force in Duni's work, which was highlighted in the ISO 14001 work and in the environmental policy, was environmental legislation. Monitoring environmental legislation was one of the tasks that occupied Environmental Affairs' time and it had developed fairly rapid. One of the R&D workers argued on behalf of Environmental Affairs that: "You have to be somewhat of an expert on this. Someone has to keep it all together, read it, interpret it, and it is not so easy". Usually, Environmental Affairs received an update from the Swedish authorities two times a year, but as Duni operated on an international market, not only Swedish legislation was of interest. European legislation regarding food contact (the origin of the raw material has to be known) and packaging was perceived as tough. The US, or California to be more precise, was another source of legislative pressure, although it was more focused on carcinogenic substances.

New legislation did not land on Duni's desk two times a year without them knowing in advance what it might be, though. The firm was involved in lobbying activities and the environmental manager expressed the firm's approach: "We try to keep up with things and to influence what is going on in Brussels through our industry associations". One important legislation was the producer's responsibility regarding packaging, which stated that the producer of packing has the responsibility to take care of the packages when consumed. In order to organize this in Sweden, a number of material associations have been founded, such as Platskretsen AB, handling plastic packaging, and AB Svensk Kartongåtervinning, dealing with cardboard. There were other associations for other materials as well, but in the two organizations mentioned, Duni was a shareholder.

The collection systems for used packages cost money. Organizations responsible for their packing had to pay a fee for every kilogram material they used. In the case of plastic packaging, for instance, the fee was 1,50 SEK per kilo at the time. This was compared to the German fee of approximately 15 SEK per kilo. All the material associations had also formed a register, the REPA, in order to control the payments from each organization. Organizations reported their amount of raw material used in the production and paid thereafter. The high fee in Germany could, according to the environmental manager, be explained by the fact that they collected a lot more material than they got paid for. This meant that a lot of organizations got a free ride.
Environmental Affairs in R&D

Environmental Affairs played the role of the adviser's (or the internal lobbyist's) in product development projects. They were not directly involved, but rather called on to support projects with specific knowledge about dangerous substances and environmental legislation. From the R&D side it was argued that issues related to the environment, influencing the product development process, were often dealt with inside R&D without contacting Environmental Affairs. Environmental Affairs did not have a veto in the projects either. They were supposed to endorse development projects, though, but occasionally they were perceived as interfering with the process. As stated by an environmental engineer: "Sometimes it is perceived as squeaking and creaking, which is really why we should be involved as early as possible". There were examples where Environmental Affairs were neglected in the process and where it later on proved that involving them would have benefited all parties. There were also examples where R&D had benefited directly from Environmental Affairs in their development projects.

On occasions, environmental engineers had helped out when conducting LCIs. In these analyses, different materials were compared and the base for decisions was often improved. LCIs used to be made with the assistance of a consultant, as in the example of the environmental scale mentioned earlier, but as Duni's environmental competence and organization grew, this was systemized within Environmental Affairs. LCIs of products were also fresh information and had to be updated on a regular basis, resulting in an effort to develop the LCI as a tool in the development projects. LCI was one tool in the process of keeping an environmental eye on the processes and it was also a part of the continuous development of specifications of environmental and product safety. They were developed for each product in order for customers, retailers and other internal departments to easily access information about the products and their packaging. The environmental aspects were also divided into the product and the packaging, briefly declaring what materials have been used in the process. The specifications were supposed to make the environmental work easier for all actors. They were therefore made accessible on the firm's intranet. In some cases, environmental and product safety did not walk hand in hand, though. This was exemplified by the demand on knowing the origin of raw materials when manufacturing products intended for food contact. This was not always a simple task regarding recycled materials. Legislation on products that would come in contact with food was strict in this sense and limited the possibility of using recycled materials. The producer had to know the origin and recycled materials could have a lot of origins.

Among the other environmental activities mentioned by respondents at Duni was their work with labeling some of the products according to the Nordic eco-label, the Swan. This was partly driven by the large retailers', such as ICA and KF, demands and there was a particular focus on soft products, such as tissues.
Another activity was the recent focus on transports and logistics in an effort to go backwards in the transportation chain. The aim, based on analyses of each step in the chain, was to cut the need for transports in general and to save resources when developing and packaging the products. As stated by an engineer at Environmental Affairs: “There is also a lot of money to save here”.

When discussing the environmental work with the environmental group there was also a mention of Duni’s work on energy efficiency through energy analyses. This was mainly an activity carried out at the paper mills. In this context, the environmental manager told a story, or a second hand story as the managing director of one of the paper mills had told it to her (also appearing in the 1995 environmental report). It stretched back several years and dealt with an industrial community in a rural mid-western part of Sweden. The local water system leading down to a lake named Laxsjön (the Salmon Lake) was polluted. One of the polluters was Duni’s paper mill in the area. Due to the salmon trout facing a risk of becoming endangered and the fact that many of the early polluters had abandoned their plants, Duni engaged in a project trying to save the salmon in the area. The managing director, who was an angler himself, argued that there was a salmon trout in the lake and that it was a natural thing for them to take care of it. The area and Duni’s production were cleaned up and at the time there were game fish in the lake. The example did not only exemplify that the firm was polluting, but also that with environmental efforts came concrete results. It also stressed the importance of having top management support in the greening process. On this topic, however, the environmental manager emphasized that: “I think it is [top management support] an important driving force, but you must not forget that you sell yourself to the world of finance when you become a managing director for a corporation”.

The environment in annual and environmental reports

In the 1989 annual report, the management introductory stated that Duni had gone through great pains in making sure that the processes were environmentally friendly and that its products, if used appropriately, were considerate to the environment. The following three annual reports, 1990-1992, which were copied to me, were only available in their “raw” shape, i.e. they contained nothing more than what was necessary by law. In 1993, however, the environment was all over the report again. Starting out with management’s introduction:

People tend to think with their emotions when it comes to the environment. The knee-jerk reaction is: disposable products are bad for the environment. But if you rationally look at the whole picture you will see that disposable products are no more harmful to the environment than reusable dishes. In some cases, they are even better for the environment. Gustav Sundström, a prominent environmentalist from Umeå University in Sweden, carried out a comprehensive life-cycle study comparing the energy and environmental effects of disposables versus reusables. When all factors were figured in - manufacture, heating of water, detergent, sewage treatment, waste
disposal - there was no major difference between the two. The report was sent to a number of major environmental organisations. Not one questioned either the methodology or the conclusions. Duni is ready to meet environmental questions head on. (Duni, 1993, pp. 4-5)

There was also a special section on R&D where the environment was a core focus. The examples dealt with cost-saving electronic printing techniques and methods to develop environmentally adapted plastics. Further on, there was a two-page spread mainly allocated to the life-cycle study referred to above. It was stated that: “The results were no surprise to Duni, but were a strong challenge to conventional thinking” (Duni, 1993, p 10).

In the 1994 report, eight crucial factors for the Group’s success were listed. Number four was to minimize environmental effects. The CEO also continued his environmental emphasis on minimizing the effects. When challenged with the question of disposables being a possible solution at all, he replied: “The environment wouldn’t benefit the least if we got rid of Duni’s napkins, table cloths and other products and replaced them with reusable products” (Duni, 1994, p 5). Reference was made to the life-cycle assessment conducted by the consultant. The CEO also expressed his faith in R&D, arguing that the future holds materials and methods that will turn “the various objections on environmental grounds that are brought up today” (Duni, 1994, p 6) upside down. He also said that: “But perhaps I’ll feel the greatest pride in Duni’s ability to show that the largest company in the world in its business can also be a pioneer when it comes to living in harmony with society and nature” (Duni, 1994, p 6). In the section devoted to R&D, a reader learns that Environmental Affairs was merged with Corporate R&D. A two-page spread was again dedicated to the environment, plus the environmental policy, which was presented at the subsequent page. The personnel training, the life-cycle methodology, the legal requirements for food contact, the environmental balance studies and the salmon trout-story at the paper mill were mentioned as good examples. It was also stated that: “If it’s good for the environment, it’s often good for the economy” (Duni, 1994, p 15).

In the 1995 report, management neglected the environment in the introductory, but the R&D section held the example of efforts to find renewable sources in cellulose and plastic products. The environment still had its two-page spread. This time emphasis was on resource management, exemplified by life-cycle studies and the decision to implement ISO 14001. Together with a mention of how a paper mill worked in collaboration with local schools on environmental issues, there were no other mentions of the environment. The limited space dedicated to the environment in this report could, however, be explained by the release of Duni’s first environmental report the same year. This report covered a short introduction to Duni’s product categories, the firm’s environmental policy, some legislative matters (product safety and the producer’s responsibility) and a section on disposable products in a sustainable society. The report also contained
data on, for instance, energy consumption from the different categories. The CEO labeled his introductory: "Important to invest in the environment".

In 1996, the environment had an own section containing Duni's environmental policy. The environment was most notable in the Meal Service segment (later at-home and away-from-home) where it was a part of the strategies. The CEO's introductory took the example of the new environmentally friendly biodegradable carrier bag. In the R&D section, a new type of cutlery and a new upper side of a paper plate were mentioned. The vice president of RD&E was quoted saying that Duni's products "must not be more harmful to the environment than reusable alternatives (washing is taken into consideration)" (Duni, 1996). A customer satisfaction inquiry where twelve customers responded on why they worked with Duni was also presented. A restaurant owner mentioned Duni's disposable napkins, which was an environmentally friendly alternative to cotton, a material that always had to be washed. The environmental report was more structured than its predecessor and followed, although not explicitly stated, the headings of ISO 14001. That is, environmental areas, policy, strategy, organization, target, means and tools, and achievements and targets. The CEO set it all off by, among other things, stating that: "Environmental issues are vital to Duni. To minimise the environmental effects of Duni's products and production processes is therefore a key element of our business plans."

In the 1997 annual report, management neglected the environment. There were no mentions until page ten when the report accounted for the business area of packaging and Stenqvist's environmentally friendly bags. In the R&D section, the same line about harmfulness from last year was repeated and the examples brought up were a new plate (again) and Stenqvist's paper bag (again). Environmental Affairs had an own section, however, where it was stated that resource management was replaced by a cradle-to-grave approach. It was also stressed that the firm had to have an open-minded and honest way. ISO 14001, the new EAB, personnel training, product information, a life-cycle approach and Duni's environmental report were other examples briefly noted.

In the 1997 environmental report, the CEO emphasized the need for Duni to satisfy the customers concerns for the environment: "A growing number of large customers are regularly evaluating Duni's environmental performance in terms of both products and processes" (Duni, 1997, p 3). There was also a particular link between environmental issues, business strategy and business development, where a proactive and efficient environmental leadership was singled out as a key issue for Duni: "One of our strategies is to replace non-renewable raw materials when it is technically and economically feasible" (Duni, 1997, p 3). The environmental scale was assigned a full page. Duni had also ordered life-cycle inventories from the same consultant as before: "The results for the cotton tablecover and Dunicel [a Duni innovation] were fairly similar, although the tissue napkin was actually superior to the cotton in terms of energy and water consumption and similar in terms of air pollution" (Duni, 1997, p 13). The consultant's three reports made up the entire reference list. In the 1996
report, he had two out of four references and in 1995, two out of five references. The 1997 report, however, also contained a section on health, safety and environmental product laws (food contact, skin contact, hygiene, and colors and dyes). The packaging waste directive and Duni's engagements in Kartongåtervinning and Platskretsen were mentioned.

In the 1998 annual report, the environment did not appear until the section on the environment where, among others, a new water treatment system, life-cycle inventories, a focus on transportation and ISO 14001 were mentioned. This manifested a trend in Duni's reporting. Once the first environmental report was released the attention assigned to the environment in the annual report was limited. In the environmental report the same year, the CEO repeated the previous year, emphasizing the customers' expectations on Duni as a market leader as a driver for environmental concern. The environmental scale was illustrated again along side the new environmental policy. There was also a step up from last year in terms of environmental facts. There were detailed data on all facilities, such as the paper mill in Skåpafors and the location in Halmstad. Figures on raw material consumption, energy consumption, production, pollution to air, pollution to water and waste were listed, in some cases for both 1997 and 1998. Each location was also divided into a total sum and a figure on efficiency, for example, air pollution per ton product. Although a bit complicated to follow, in those instances where comparisons between years were possible, there was a pedagogical value as the reader could note that the efficiency usually had increased (with one exception). The total amount of raw material consumed had, however, increased (with one exception).

Discussion

Working with short-time use products, Duni seemed to be experienced in dealing with environmental issues. Targeted in the early post-war years, they have communicated their products' impact on the environment for several decades. In this study, there were also signs of an encompassing environmental work. There were people, tools, systems, products and reports dedicated to greening. The firm was also perceived as a symbolic actor in the environmental debate, but the approach was nevertheless a technical one. This points at some of the tensions in the Duni case.

Greening in practice

When listening to the respondents accounting for Duni's environmental work, there was no shortage of environmental activities. Without claiming a comprehensive list, some of the what's and who's are summarized below:

- Environmentally profiled products (eco-labeling)
- Specifications of environmental and product safety
Several activities dealt with the products and the production processes. There were even product development projects focusing predominantly on environmental aspects. Duni had also established a tool in these processes, the LCI, with which they analyzed a product from cradle to grave. Several indicators in the LCIs pointed at the firm’s relatively environmentally friendly operations, at least when compared to reusables. These studies, especially those summarized in the environmental scale, had given these activities a momentum. The KPI was another part of the process, constituting one way to compare products over time and between categories. Also, the specifications of the products enabled the information to reach a wider audience, as they were summaries of fairly complex analyses.

The KPI was also a part of the ISO 14001 work. Or, it was a means to an end, as the system demanded continuous improvements and the index provided a way to carry them out. Duni had not received an EMS certificate at the time, though, but the system had dispersed throughout the organization, mainly due to the legislative emphasis in the system. Each site manager was responsible for its compliance to environmental legislation. The firm was, however, on the way towards a certificate. They had also linked the EMS work to the other management systems. The basic idea was to align those with each other in one single system. Such a solution meant that environmental issues were merged with issues on quality and the working environment.

Duni had a group devoted to environmental issues, Environmental Affairs. It gave the matters an explicit space in the organization, or in the organizational chart at least. It also signaled that the development of new products was an activity that was supposed to be influenced by environmental consideration. This since Duni had integrated those activities into the Corporate R&D and Environmental Affairs department. As experienced further on in the Duni study, however, the E-part of the department had a difficult time being involved in the R&D processes. They rather saw themselves as internal lobbyists, trying to make the R&D part realize their importance. Instead of being working-partners, they were often sidelined. R&D made the priorities, unless environmental laws were
broken. Also, another observation is that of those encountered working with product development and environmental issues, all were engineers.

Focusing on the environmental group, they did not only lobby towards the R&D engineers, but also targeted the procurers. The idea was to start at the source and not with an end-of-pipe perspective, placing a filter on the chimney as the way to clean the output. The group was developing a handbook, which could assist the procurers. It could also change the role of Environmental Affairs, they argued, making the procurers less dependent on the group. The handbook was one way of integrating environmental legislation into the procurers’ everyday activities. The environmental group also monitored environmental legislation and communicated this to affected parties. They also authored the environmental reports, which, when it came to environmental issues, were the most visible document from the firm. My impression of them was similar to the environmental manager’s. At first they were nice and tidy, and later there was more content in terms of impact, policy, descriptions and data.

The environmental work was not only designated to Environmental Affairs, though, but also to the EAB and the KPI group. These groups met regularly to discuss environmental matters, but they partly consisted of staff from Environmental Affairs. They also worked with information prepared by Environmental Affairs. There was therefore still a dominance of the E-part of the organization. The two groups, KPI and EAB, might have been formal decision-makers more than actors working with change processes and/or creating environmental knowledge in an integrated Duni organization. Greening Duni was very much left to Environmental Affairs.

**Driving forces and stakeholders**

One stakeholder driving the environmental work was the customer. Statements having the customer as a driving force were the official reports in which the CEO expressed the increasing customer concern for the environment. Duni, as a market oriented firm, he argued, had to respond to this. There were also customers calling Duni, being anxious about the products’ influence on the environment. Professional customers, such as hotels and restaurants, often had their own environmental work in which they had routines for inquiring about environmental aspects: “A growing number of large customers are regularly evaluating Duni’s environmental performance in terms of both products and processes” (Duni, 1997, p 3). On the other side, there were statements such as: “It does not matter whether the coffee-filters are brown or white anymore” (a laboratory engineer), and: “I think that lately, environmental issues have received less attention in customer relations and in media” (the environmental manager). The argument was that environmental issues were not as interesting for media and customers as they used to be. The matter was rather about mad cows and not about whether or not Duni’s products came in a recycled color. The market was more concerned with quality and price.
Quality should include environmental issues as well, but this did not seem to be the case according to the interviewed R&D staff. That was rather the ambition of the environmental group. To lift the environmental aspects of a product demanded more marketing, making the product more expensive. Due to a high price it thereby became less attractive on the market. Deciding to market a product’s environmental advantages anyway would, however, on the other hand result in an increased attention to environmental issues. This was not what Duni wanted either since the firm was frequently linked to a consumer mentality. The NGO, SSNC, as another stakeholder, through Duni’s vice president of RD&E’s experiences, made sure that Duni was reminded of its link to consumerism.

The market emphasis was not, though, a major driving force towards greener products. The market, it seemed, rather held greening back. In all the respondents’ accounts there was an evident emphasis on the growing significance of a business pressure. It could be attributed to strivings towards an increased market orientation of the firm. Duni was about to be introduced at the stock exchange; two well-known finance magnets managed the firm; the firm’s turnover (financial growth) had increased radically during the last decade; the De Ster acquisition reinforced the firm’s focus on core competencies and growth; the Duni-brand was reshaped; and the product development process was restructured towards market orientation. “The idea is to make it market dominated. It is the market’s demands that are supposed to be satisfied”, the vice president of RD&E stated. This made the customer the benchmark, together with a basic condition of the market as well as a main task for Environmental Affairs, that is, environmental legislation.

This was obvious in the EMS work, where existing legislation constituted the basic requirement. The environmental engineer working with the system criticized this, though. It should rather be about what would be done beyond legislation, he argued. One area emphasized by several respondents was legislation on products intended for food contact. This was, however, not simply seen as something pushing the environmental work forward. From one perspective, it rather made it more complicated when it was difficult to trace the origin of recycled materials. Another legislative area was packages and the activities around the REPA register. They were considered important for the firm, making them engage in lobby activities as well as becoming part owners in the firms collecting the packages.

Identity

Duni was a multinational corporation working under a pressure to legitimize itself on a global market. One aspect in this pressure was environmental concern. According to the respondents, Duni was used to and almost comfortable with these issues, as they were targeted early on in the post-war environmental debate. What might be regarded as special in the case of Duni was the focus on the symbolic meaning awarded to their products. There was a particular emphasis on
the abstract, behavioral characteristics of the products and on the ways they were handled. The vice president of RD&E said: "So, how people handle Duni’s products will constitute a good example of how a resource efficient behavior might look like". Duni was, hence, not perceived and judged by the more measurable pollution from their production, as outlined in the 1998 environmental report (raw material consumption, energy consumption, production, pollution to air, pollution to water and waste). Still, it was through technical investigations that Duni aimed at conveying their identity as an environmentally responsible business. They did the scale studies, developed environmentally profiled products and worked with ISO 14001. All of this constituted parts of constructing an identity as a credible actor on the market. The scale studies in particular seemed to have been ascribed an important part of Duni’s environmental communication.

A consultant conducted the studies and he had authored the key references in the environmental reports. When mentioning the consultant, he was singled out as an environmental expert, an independent expert, a prominent environmentalist from Umeå University and as an independent consultant. From one perspective, the use of the consultant appealed to the strength of having a third party statement. The firm itself is subjective, or biased, and the use of an outsider might enhance the firm’s credibility and assist in constructing a positive identity of the firm. From another perspective, however, the use of, and a particular reliance on, a consultant does not enhance credibility. It was the same consultant in the three studies, which might be explained by the results from the first study. All studies showed Duni as not so bad after all. A consultant has to provide for him or herself. There is therefore a dependency relation between Duni (the buyer) and the consultant (the seller). How did this relation affect the studies? In the 1995 environmental report the consultant constituted two out of five references. In 1998, he was the only one. Why not use an academic researcher, or an additional consultant, or even the SSNC in the latter years as well? One answer is that the scale studies, as conducted by the consultant, helped Duni construct an identity with which they felt align. According to the vice president of RD&E, SSNC had not argued the results, though. This, albeit seen from Duni’s perspective, might vouch for some credibility.

Another aspect of Duni’s identity was their strategy to be perceived as an open and transparent (to some extent yes, but no when it came to product formulas, for instance) in the environmental debate. This was, I should say, the impression from my visits too. The environmental strategy was characterized by openness and the environmental manager even stated that: “There are situations... where you are open, maybe more than you should be, and it proves to be quite harmless”. Openness, however, did not mean a faith in agency. Duni could not, the respondents argued, market their environmental advantages: “There is no significant difference between our products and a china cup, but we cannot communicate that”, claimed the environmental manager. The explanation
probably lay in the public opinion, as well as in the increased cost of marketing green products.

As noted in the example from Vasaloppet, Duni felt that they were targeted unjust in the environmental debate. They were not a fierce polluter, even though their products were visible, scattered all over the ski-tracks. All race-participants might, however, not make the connection between the cups and Duni. They might also give a damn. For Swedes, though, the Duni brand seems to be intimately linked to such products. The way these products are used is often linked to unsustainable behavior. When it came to facts, however, and not any knee-jerk reactions, Duni was not so bad. The environmental scale studies proved it. It was just a matter of perceiving it in a logical and rational way. The oil based arithmetical problem conveyed the same message. Sure, the firm used oil in their products and production processes, but you should not start by kicking plastics out. Start instead with transportation and the heating of houses. Duni was just one actor in a larger system. They were also an actor taking a lot of green heat, which they thought should be more align with the firm's environmental impact.

Duni tried to communicate this in the contacts with SSNC and other stakeholders. These actors did not disagree, but there was still a point in targeting Duni. The firm was symbolically a large polluter, even though figures indicated another reality. Duni's identity, albeit a firm in the technological forefront in their field, was intimately linked to a consumer mentality. Symbolically, for SSNS, for instance, Duni was therefore more than just another actor in the system. They were an important one, influencing a range of other actors through their activities. This points at some of the tensions in Duni's identity.

Duni mixed agency and passivity. At times, they were not able to influence stakeholders. There was also, however, a particular faith in the firm's capabilities to influence when it came to legislation. The firm was a shareholder in firms handling the reuse of their packages. They were also involved in the legislative processes regarding environmental issues. An active view was also evident from the statements on marketing and branding. Inherent in those activities lies a faith in the firm being able to construct parts of their arena. The main impression was, though, that at Duni, even though they were not a major polluter, they were shouldering the environmental pressure anyway.

**Worldview**

Linking the matter of identity to the worldview level, the vice president of RD&E claimed that: "We must, using common sense, explain and justify our existence". For Duni, it was common sense that their products belonged on the market. This was communicated through the environmental scale, which to some extent appealed to the common sense. It showed the balance, which when pondered further also showed that Duni's products were better than reusables. In this way, Duni appealed to our common sense. It was common sense, however,
or in the words of the CEO - thinking with emotions or knee-jerk reactions - that was a dilemma for Duni. They also asked us to look away and instead approach the issue from a factual and more technologically rational stance. Look at the facts, forget about emotions, and you will see that the products belong on the market. No one, not even SSNC, had disputed the (undisputable?) facts. The technical emphasis in the environmental communication, as well as in the environmental work in general, also fitted the educational background of those encountered in the study. They were all engineers.

In the environmental policy it was stated that: “High environmental quality is achieved by adapting the business and products to a sustainable society”. The environmental manager also explained that: “The important thing for Duni’s products is not the environment, but that we manufacture products with the right quality and that they function as they should”. There are, though, several signs of the business not being adapted to a sustainable society, at least not one where ecological sustainability is aimed for. One sign is the fact that more resources are used in Duni’s processes. In their processes, they also use fossil fuels and often substances that nature with difficulty breaks down. Duni also creates patterns of transportation, which means more pollution to air and more infrastructure maintenance. And so on.

Another sign is that environmental issues were not part of the organization’s culture (in direct opposition to the policy). The environmental wave was over, it was argued. The focus on environmental issues had decreased. Environmental issues had had their day in the sun. Other concerns had taken over, such as genetic food and mad cows. Another sign is the business talk in official reports and in interviews. The adaptation is achieved “by integrating resource management and environmental issues as a natural part of managerial decisions and, in the process, ensuring a prosperous business” (the environmental policy). A natural part would most likely mean that there was a culture supporting this. To my knowledge, there was an organizational structure to some extent supporting this, but not a culture. The environmental group perceived themselves as internal lobbyists, enforcing the impression of such a situation.

Duni was rather aiming for economic sustainability of some kind. The environment was out-there. There were talks about how the environment could be embraced by the business. There were no signs of the other way around, about how the business could be embraced by the environment, as claimed in the environmental policy. “If it is good for the environment, it is often good for the economy” (Duni, 1994, p 15), it was claimed. Examples of the firm’s environmental work had, however, to be economically feasible. They had to ensure a prosperous business. The environmental manager captured part of this dilemma when she said that “you sell yourself to the world of finance when you become a managing director for a corporation”.

What was interesting was also why there was talk about less environmental attention while the organization increased its efforts in the environmental area.
Judging from reports and the EMS progress, environmental issues were not declining in the organization. It was rather the contrary. One reason might be that the hype was over, but just as the quality wave stuck onto business organizations, the environmental wave was perhaps about to settle down in the organization.
This account is based on an effort to track down the Swedish Defense Materiel Administration’s (FMV) environmental work. It travels from an environmental manager through two project managers and back to two employees in the environmental group.

The FMV organization

The Swedish Defense Materiel Administration, or Försvarets Materielverk in Swedish (FMV), dates its history to 1630 when King Gustav II Adolf's founded the Royal Academy of War. The academy supplied the Swedish army with weapons and other equipment necessary in the field. In modern times, the task remains the same: "to contribute, through a cost-effective and reliable defence procurement process, to the maintenance of Sweden's national defence capability" (FMV, 2000). Formally, FMV is a Swedish authority within the Armed Forces, which together with the government has assigned FMV to take "responsibility for all defence equipment through the whole of its life from initial concept to final disposal, 'from threat to throw-out'" (FMV, 2000). The organization therefore predominantly works with acquiring defensive equipment, long term planning of defense systems and equipment system knowledge. In many official FMV publications, the organization is described as a modern and international knowledge intensive firm. It is, nevertheless, a public organization. In 1999 the organization had a turnover of 19,7 billions SEK and employed more than 2,300 people, all of them located throughout Sweden.

In May 2000, together with three colleagues, I made a first visit to FMV in Stockholm. We met Bengt Strömstedt, the environmental manager, and Elisabeth Rönning, who worked with project management development. Our hosts proved to be a good mix in regard to our interests when they represented the organization's environmental and project work. Beforehand, I had received some secondary material on FMV. This meant that I knew a bit about the topics highlighted in the organization. Our meeting began with Bengt, who did the main talking, describing their environmental work. I turn the tables a bit here, though, and begin with a short description of the FMV organization (following quotes are from Bengt at our May-meeting).

The organization and its project work

The Armed Forces was at the time FMV's single most important customer, representing about 95 percent of the order intake. There was, however, not a traditional customer-supplier relationship between the two. It was rather a partnership including, among other things, a paragraph stating that FMV should be the Armed Forces’ main supplier. They also worked intimately together in shaping the future national defense and their planning horizon regarding
materiel-systems was eleven years. The Armed Forces, it was noted, did have its own operations, though, for instance, the maintenance of their own fleet of vehicles. As emphasized by Bengt, however, the Armed Forces did not possess enough competence within the field of purchasing. This could be explained by the fact that those managing the Armed Forces were not experts, but generalists whose positions rotated every third year. The remaining 5 percent of FMV’s intake were orders from, among others, the Coast Guard, the National Swedish Police Board and the Swedish State Rescue Corps.

At the time, FMV had 23 units scattered around Sweden, but there was an ambition to reduce this number. The organization was therefore restructuring and the new organization took effect on the 1st of January 2000. The basic idea behind this change was to make the organization more process oriented. According to Bengt: “There are a lot of organizations doing this [type of reorganization] today. Earlier, the line was responsible, but now we focus on different things and thereby gets some dynamics in the processes”. In the annual report from 1999, it was stated that the new way of working was supposed to be focused on projects and on creating synergies and adding value through integrated project teams. The reorganization did not change the way they worked completely, however. This since the organization continuously had tried to, through using best practice from the previous ways of working, work in a process-like manner. In the change process, it should be mentioned that FMV’s staff was cut down from approximately 2,300 to around 1,800.

According to Bengt there was no specific FMV culture, which could be explained by the last decade’s efforts to remove the military emphasis in the organization. FMV had an organization where less than 10 percent of the personnel had a military background, meaning that the organization should not, according to Bengt, be perceived as a military organization. They were also aiming to remove the “defense-thinking” in the organization, for instance, through bursting the myth that everything at FMV was top secret. This was not the reality, it was argued. Only a small part of the information, such as details on weapon systems or performance, was secret. In other instances there were openness, even though I, as a visitor, felt like I was entering something secretive having to report my personal identification number at the guarded gate in order to enter the premises.

It was also mentioned that the Director General, Birgitta Böhlin, had employed several new faces of which many were women. There was, however, only one female competence center manager at the time. Eleven were male. The annual reports showed that FMV established an equality of opportunity plan in 1992, but the share of women in the workforce had been reduced from 31 percent in 1992 to 26 percent in 1999. Focusing on how the organization was structured, there was more than one organizational chart shown to me during my visits. The one below caused least protests. In short, the assignments and projects traveled from left to right in the figure:
In essence, projects traveled from system management to production, where system management focused on external customers and on studying the external organizational environment. Product management dealt with the suppliers and managed procurement, maintenance and liquidation. The project work strived towards Earned Value, where each step had to keep a close eye on time and money. According to an order from the government, FMV's ten largest projects had to be accounted for in compliance with this approach. The project process began with a general inquiry from the Armed Forces, which seldom came as a surprise. They were after all conducting the long-term planning together. In this inquiry, the objectives were divided into three parts: tactical, technical and financial objectives (TTFO). The tactical part, or what was needed in order to keep the nation's defensive capability on a sufficient level, was the main issue. Regarding the technical and economical judgments, FMV's system management had an extended responsibility as they occupied the main competence in these areas. A prospect, or an offer, was developed based on the inquiry and sent to the Armed Forces again. If they accepted the offer, a project manager from the project center was assigned the project.

In the next phase, a detailed demand specification together with a project plan was developed and personnel resources were booked with the respective competence center. The technical competence center was, besides a result of the reorganization, the umbrella organization for the twelve CCs. This was the place from which personnel were allocated to each project. Bengt, who also managed CC Method, compared the CCs to one of the frequently repeated commercials on Swedish TV at the time. The commercial represented Manpower, a firm covering other firms' temporary need for manpower. In the different commercials the viewer follows "Nisse", the man who handles it all. "Everybody at Technical CC is like 'Nisse at Manpower'," Bengt claimed. The following step in the process was to pose the demand specification on the market and in the end
tie one supplier, or in some cases several suppliers, through a contract negotiation. FMV preferred to negotiate with a single part instead of mounting the task of the coordinator as well. One example was FMV's largest project, the fighter aircraft JAS 39 Gripen, representing approximately 65 percent of FMV's resources, where Industrigruppen was the main contractor. They were thereby the responsible actor for linking up with other subcontractors.

About the project manager, Bengt compared him to a chaffinch: "He could look any way really". Usually, though, the professional career for a project manager began in the role of the technical administrator and then climbed to perhaps one day becoming a manager for one of the ten largest projects. On the way he (I heard of males only) participated at a number of internal and external project management trainings. The general stance on the training of project managers was that, as other large organizations were building their project management competence, FMV needed to follow this path. In Bengt's words: "We have to begin to learn this". Another role in the organization was the materiel systems managers. A materiel system could, for instance, be a certain weapon-system. What made this different from a project was its focus on the whole system of products and services, and not on a particular piece, ship or aircraft. The materiel system managers were organizationally situated at the project center.

Further in the project's process, it was difficult to describe the typical FMV project. They were all unique as they aimed at a product, or a system of products, that was developed once in a generation perhaps. A project could very well reach a lifespan of 15 years. Further on in this account there are two examples of such projects at FMV. When dealing with such projects, things are bound to happen on the way, though, and the government sometimes changes their priorities. There had also been occasions in FMV's project history when a project did not meet up with the demands on performance or finance. This led to a renegotiation, for which FMV had routines. At the time, no project had been renegotiated due to a negligence of environmental demands, however. This was explained by the fact that the demands on environmental consideration had so far been low. On some occasions even disregarded.

Integrating environmental aspects

My explicit interest at our May-meeting was how the environment was integrated into the development processes. As Bengt was the environmental manager, this was naturally brought into the discussion. Before the meeting, I had read the latest annual and the environmental report. The environmental policy summarized several aspects later shared at the meeting (FMV Environmental report, 1998):
FMV participates in long-term sustainable development of society by considering the environmental aspects of materiel systems from a life-cycle perspective. FMV continuously achieves improved performance and prevents pollution by:

• being the most knowledgeable on environmental defence materiel issues
• considering environmental issues during the whole of the materiel supply process
• demanding that suppliers and tenderers have their own active environmental work and that they develop environmentally sound products and processes
• making sure that environmental legislation is observed and contributing towards other legislation being favourable developed from an environmental point of view
• improving internal activities
• developing the defence sector's environmental activities in co-operation with the Armed Forces.

The environmental work, however, began with the Armed Forces. In the inquiry from the Armed Forces, the base for judgment was, as mentioned, the TTFO. Environmental issues were not specifically included in this inquiry when it arrived at FMV's system management. It was, though, supposed to be integrated in the specification of requirements. Later on, Bengt explained, a computerized purchasing system made sure that at least some aspects, such as the producer's responsibility and battery fees, were considered when developing the requirements on the suppliers. But according to Bengt, it was in the Armed Forces' inquiry that environmental issues ought to be integrated in order to work as preventive. This as there was a particular ambition at FMV to make the environmental work more process oriented. Bengt said that "we need to get them integrated in the right phase".

ISO 14001

In 1997, FMV was selected by the government and the Armed Forces as a pilot organization within the public sector to work with an EMS. FMV began by making a thorough investigation of the environmental status of the organization, which constituted the input in a simple EMS. The system was divided into four steps: planning, implementing, follow-up and evaluating. Hovering around these steps was the demand for continuous improvement and all of these steps matched the ingredients in the established EMSs. In 1998 (the year of FMV's first environmental report), FMV got an additional assignment from the government. This time the mission was to develop a policy for how to make the organization ecologically sustainable. A working committee was assigned the task and they developed guiding principles for an environmental development of defense materiel. In the process, it was decided that FMV's approach to this additional assignment would not differ from their previous environmental work. Bengt explained:

How are we supposed to accomplish this? Well, here at FMV, we have stated that we will fix this through implementing an environmental management system. If you look
at all the parts, it is perfectly natural that a working environmental management system takes care of it all.

Working with an EMS was the way the organization would deal with environmental problems caused by the organization. This meant that the overall environmental policy was similar to both the EMS work and the policy requirement from the government. According to Bengt, an EMS was a point of view and a tool in the greening process. Of course, there were pros and cons with such a system, but FMV was aware of them, he argued. A management system structured the environmental work and made demands on following legislation and making continuous improvements. They might be modest, but these requirements together with other aspects of the system, it was claimed, would help them in their environmental work. The government decided in 1999 that FMV should implement ISO 14001 before 2002.

**Environmental impact and stakeholders**

There were other reasons beside the government’s requirements that motivated FMV in the environmental work. The organization’s influence on the environment per se was one reason and Bengt highlighted three different areas of environmental impact: indirect effects (through purchasing), direct effects (test-activities) and internal operations (business travels, office supply). The indirect effects were attended to mainly through better procurement. This should also be related to the fact that the resources FMV acquired were often used for a long time. This meant that the requirements put forward in a purchasing process were of crucial importance for the long term environmental impact. One example was liquidation of old materiel. In Bengt’s words, “activities concerning liquidation of defense materiel have increased like an avalanche during the latter years. There was no activity concerning this in 1997, but it will be included in 2000”. He also gave an example:

> At the moment we are conducting a completely absurd project. We are liquidating old ammunition and this thing with liquidation is a good example. At the time, we are liquidating an enormous amount of grenades, which were procured in 1974 for many, many hundred millions [SEK]. They are lying in storage and they have been lying there until now. And now the same firm receives them, unscrews them, melts out the protyles, sells brass and lead to the scrap-dealer, chips and sells the packaging material to the local incinerator-plant. It is interesting.

There was, as might be noted, some irony in Bengt’s story. One example of FMV’s environmental impact from internal activities, however, was its business journeys. FMV was the authority in Sweden with the most official travels. Cars and planes were singled out as the main villains. The single most decisive group of effects, though, was direct effects. They derived from tests made at FMV’s test-locations throughout Sweden. In this group of impacts, aircraft movements
were a particularly polluting activity, but there were also pollution from testing
different weapon systems and vehicles. Energy consumption, pollution to air and
noise were the main effects. In the environmental report for 1999 the
environment was figurized in terms of the organization’s energy consumption. It
provided a reader with a feeling of proportions in energy use. The total amount
of MWh consumed during 1999 was 122 000, whereof testing demanded 65 000,
electricity-heat-cold demanded 40 000 and official travels demanded 17 000. A
reader also learned that each employee at FMV, on the average, consumed 46
kilos office paper, sent 93 kilos paper to recycling, used 8 MWh for official
travels, consumed 26 m3 of water, and 17 MWh for electricity-heat-cold (FMV,
1999).

Beside these driving forces, Bengt singled out the political pressure, which
was illustrated in the EMS discussion. The Armed Forces had ambitions in the
environmental area. They had, for instance, developed an environmental policy
already in 1992. The requirements placed on FMV were of a general character,
though, and the Armed Forces, according to Bengt, had a general, but quite low
particular knowledge about environmental issues. This was not perceived as a
problem, however, when loose guiding principles were preferred in order for
FMV to make their own judgments about what to do. "We are the ones with the
environmental competence”, Bengt asserted. It was still emphasized that a
blessing from top management to work with the issues was important, even if
"there is no one who will hang us for not integrating relevant environmental
demands”.

Speaking about hanging someone there were four other stakeholders
identified as influencing the organization’s environmental approach. Ultimately,
the general public had a say as it, through its taxes and votes, created the basic
frame for the organization to operate within. There were no examples of this,
however, which may be because this pressure usually reached the organization
through other actors such as politicians and FMV’s Director General. The
Director was described as very committed to environmental issues. She was also
a member of the Swedish delegation for environmental technique and the vice
president of a delegation aiming at influencing the European Union (EU)
regarding environmental matters. She also encouraged FMV to appear on an
international scene. One reason behind this was to gather information on how
environmental issues were worked with abroad. On an international comparison,
although through the experiences of FMV, Sweden was among the top nations.
Other nations perceived as being in the forefront were the Netherlands,
Denmark and the US, whereas France was mentioned as an example of a nation
with a lower interest in environmental issues.

Another concerned actor was the co-worker, especially younger ones. They
often had expectations and ambitions in the environmental field. This was noted
in employment interviews where potential employees usually expressed concerns
for the environment. FMV had also arranged environmental trainings for their
employees and everybody had participated in a half-day training in general
environmental knowledge. Project managers and technical administrators had also had the opportunity to participate in an additional two courses. The environmental group had also targeted the procurers with environmental trainings, which was based on the long-term effect of the procurers' actions. They had had the opportunity to attend ten seminars on environmental issues during 1998 and 1999. There had also been a deliberate focus on top management.

A third stakeholder was environmental legislation, especially the new Swedish Environmental Act, Miljöbalken. Miljöbalken was, according to Bengt, tough. He confessed that they had problems conforming to it, especially in the area of chemicals. Also, as noted in FMV's environmental policy, one target in the regulatory area was to improve existing legislation in an environmentally beneficiary direction. The main reason behind this was the current version of the law on public procurement. It stated that a public organization had the right to discriminate a supplier that did not managed to show a system on how its quality was guaranteed. One widely spread quality system standard is the ISO 9000 family. A public organization did not, however, have the right to do the same concerning ISO 14000. Bengt explained:

We also claim to contribute to other laws being developed in an environmentally sound fashion and that might sound a bit cryptic, but what we mean is that the law on public procurement is not good if you look at it with green eyes. It makes certain types of requirements impossible and one of the more important ones, we used to think at least, was the fact that we could discriminate a supplier if he did not have a ISO 9000 system, but we cannot discriminate them through requiring an ISO 14000 certificate. We think this is quite peculiar. You can require that they have a systematized way of working with guaranteeing their quality, but you cannot do the same thing from an environmental point of view.

A fourth stakeholder was the supplier. As FMV preferably worked with one main supplier, the organization was to a large extent dependent on the suppliers' competencies. This was especially the case regarding their attitude to and knowledge about environmental issues. The Director General had therefore informed the twenty largest suppliers about FMV's perspective on the issues. Before the end of 2000 it was estimated that FMV would reach the 100 largest suppliers with a survey mapping their environmental work. It was, however, argued by Bengt that the twenty largest suppliers did not need any help or support in their environmental work: "We do not have to push them". Their driving forces originated from operating on international markets where they had experienced positive effects on their competitiveness through engaging in environmental work. They all worked with EMSs and the majority of them had been working with environmental issues for a long time. Bengt also noted that the suppliers had exclusively aimed at implementing ISO 14001 and not the EU version, EMAS.
At the end of our May-meeting, I asked Bengt and Elisabeth whether or not we could make a splashdown in a concrete project in order to get another, or a complementary, view of their introduction. How were all this information translated into practice? Were there any examples? They spoke about a helicopter project and some other projects. There was also a selection in FMV’s environmental report from 1999 where a handful projects with environmental links were presented. Among these were how the organization was dealing with Dangerous Substances, the environmental analysis before liquidating the fighter aircraft Viggen, the development of a water jet aggregate for a fighter ship, the reusability of liquidated ammunition, the new submarine Viking, the quest for a new battery-system, and the body construction of the new class corvette Visby. In the Visby project, attention had been directed to reducing the body’s weight in order to cut emissions and fuel consumption. Bengt and Elisabeth suggested Visby as “a good example of a systematic view of how to take environmental consideration”. Conforming to existing laws was the main focus in the project, but according to Bengt who had listened to a couple of presentations of the project, they had gone a bit further. I asked Bengt and Elisabeth for some contact information and they directed me to the project manager, naval captain Thomas Engevall. In late September 2000 I met Thomas at the FMV headquarters in Stockholm.

The Visby project

Reading the environmental report for 1999, the Visby class corvette project was unique. FMV had, among other things, developed the demand specification in a synthetic environment. They had simulated and modulated the new corvette virtually before creating a “live” version. The project had also an environmental emphasis in the carbon fiber composite used for the vessel’s body. With this construction, the total weight was reduced from 185 to 150 tons, leading to a reduction of fuel consumption and emissions with 5 to 10 percent. The project manager at the moment was Thomas Engevall, naval captain and naval architect. Before enrolling to Visby in autumn 1998 he was responsible for the test operations in the Smyge project, a precursor to Visby. Below is an extract from our discussion (all quotes from the interview, September, 2000):

Thomas: There are six vessels with accompanying training-system and other things that will be supplied, everything from... well, you can look at the pictures and you will see. Gives you a picture of the project... There are six vessels then, which first of all will be constructed at the Karlskrona shipyard. Then there are a number of other suppliers too. The project began in 1995, or it really started earlier, but in 1995 the first contract was negotiated with the shipyard and we had the first launch this summer [2000], on the 8th of June. So, the vessel looks like this [shows me a picture of it]. It looks like a photomontage, but it is not.
I: For me, this looks like science fiction.

Thomas: Yes, exactly, and the vessels perform three main tasks: There is submarine-hunt, there is mine-clearance and there is surface-combat tasks. And then, beyond those, the more transformal maritime tasks such as sea supervision, protect shipping, gather intelligence, support the civil society. [---] She has not been at sea yet, so she is not that ready.

In economic terms Visby was FMV's fourth largest project and at the time, a first corvette had touched water. During spring 2001 it was expected to put her to sea. Following this were more tests and complementing installation-programs. If everything ran according to the plan, Visby would be delivered between 2004 and 2007 at a pace of two vessels per year.

One core idea with Visby was the stealth-technology used to make the ship more efficient as a surface combatant through minimizing all revealing signatures. Thomas explained that the basic idea with the vessel was to make it as difficult to detect as possible, to all senses. The stealth-technology used in Visby was not entirely new as the Smyge project was dedicated to develop this technology. Smyge started in the middle of the 1980s and was launched in March 1991. In a brochure about Visby it is stated that: "The positive feedback from Smyge meant that several technological advances could be applied directly to research and development work being conducted by FMV in the late 1980s" (FMV, 2000:1, p 5). This later resulted in the Visby class corvette.

When asking Thomas further about the origin of the ideas surfaced in Visby, he started below the surface. For a submarine, it was natural to try to be as quiet and hidden as possible, and the technological tradition was encompassing within that area. When it came to surface vessels, there were mainly mine-threats that had sparked the development of, for instance, un-magnetic minesweepers. In Sweden, the developments led to a test-vessel in the early 1970s, Viksten, a minesweeper with a body made out of a sandwich construction, unique at the time. Several other vessels followed this project and the main focus was on low
magnetism in order to avoid underwater threats. Above the surface, thoughts had for a long time been hovering around radar, but according to Thomas, conservatism had been an obstacle in the process: “After all, the vessels look a bit funny when you build them that way”. The big breakthrough was Smyge and Thomas was himself involved in managing the test-runs in the early 1990s. The tests showed that the technology worked and that it was actually possible to construct and steer vessels that looked like that. Thomas argued that it was at least as much a mental as a technical process. The Visby project was, though, the first time that the different technological solutions were implemented in one vessel: “To the best of our knowledge, we are the first in the world putting it all together”.

The project group around Visby involved around 60 persons, but in man-hours it was about 40 to 45 man-years. It was a traditional hierarchical project organization where Thomas had a staff focused on solving the integration-task, “because that is our big job”. FMV had mantled the task of coordinating the suppliers, mainly because the task was more complicated than expected. This rendered in some uncertainty on the shipyard’s behalf, leading to a higher prize, which made the economic objectives in the project difficult to meet. Thomas staff consisted of personnel hired from the technical CCs, which was one result of the reorganization. He stated that: “All organizational changes have their pros and cons, but seen from a strict project perspective, the projects have a larger emphasis today then earlier, and as a project manager, I have received more mandate to make decisions now, both in economic terms and in other terms”.

My entrance to Visby was the paragraph in the environmental report and Bengt and Elisabeth’s comments. The report focused on the body construction and Thomas explained that the background of the body was a development project between FMV, the shipyard in Karlskrona and the Royal Institute of Technology in Stockholm: “These type of ideas could come from dialogues with the industry. They have an idea, we have an idea, than there are forums where you can bring this type of developments forward”. But environmental issues were not a driving force in the development process. Stealth technology was. I asked Thomas about how they approached environmental issues in the project, referring to what I had read about the body in the report. Was this the main environmental point with the project?

No, I do not think so, but it is in there as a consequence. I would probably, if I wrote the text, not consider it at first. It is a consequence of the construction material, which is good. This is not the issue, though, but if you should... We have requirement specifications, which we received last year. I suspect you already have all the FMV policies? They were written, a lot of these documents, quite some time after the vessel was ordered, but a basic pillar in the contracts with the suppliers is still that laws and regulations have to be conformed with. We cannot buy anything else. So, part of it is covered there, but the big thing that has emerged towards the end now is an area named System Safety. Have you heard of it before?
My answer was no and I now realized what all the papers Thomas had handed me when I arrived were all about. System Safety dealt with and assessed risks. In the System Safety handbook, it was defined as “the characteristics of a system that prevents injury to personnel and damage to property and the environment” (FMV, 1996, p 21). In this context, risk was defined as “the combination of the probability of an accident occurring and the consequence once it has occurred” (FMV, 1996, p 40). According to Thomas, risks were assessed in three overall areas: personal injury, property destruction and environmental impact. Personal injury, which in Thomas’ words “is the area you might think of first”, was a bit awkward. It does not feel good discussing a reasonable level of personal injury, Thomas asserted. Having in mind, however, that the vessels together have a long lifetime, something is bound to happen during this time even though every accident is a failure from one aspect: “All it takes is that someone falls in high sea and hurts himself a little”. Risks were assessed in a risk-matrix where consequence and probability made up the two axes. The matrix was used to indicate what types of risks that were intolerable, limited tolerable and tolerable. For instance, if a risk was assessed as critical and frequent, it was consequently regarded as an intolerable risk. Intolerable risks had to be dealt with in advance:

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IT = Intolerable risk  
T = Tolerable  
LT = Limited tolerable risk, decision required by Armed Forces for each individual case

The matrix originated from the Armed Forces and FMV had consequently negotiated it into the Visby contract with Kockums:

This [System Safety] has become, at least on the marine side, path-breaking as similar structures will be used in other systems as well. Then, of course, you could always wonder what a critical environmental accident is, but I mean it... it has to be broken down as well so... I think it is the practical approach taken within the project that makes sure that we are dealing with this type of issues. And, the second part is connected to one of the pictures you got, that is, the vessel's leading principles about reducing our visibility, which means that if we release things, if we are talking about pollution, that type of... We shall release as little powder as possible.

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Linking the risk assessment to Visby, the paragraph in the environmental report should, according to Thomas, rather have been about risk assessment and the systematized way of working instead of the reduced pollution. "Pollution is one thing", Thomas claimed, "but what happens if the vessel run aground?" In such a case there was a risk of oil-leakage, which meant that the design of the vessel had to consider where to place the tanks. Also, there had to be an idea about how the vessel would be reused once its 30 years had passed. This had been done in the case of the fiber-composite used for the body. The reuse aspect was not, however, "completely clear as daylight, but it is possible to break it down and there will not be six ghost-ships laying around as waste, as it does in Murmansk [Russia]."

On the broader question of whether environmental matters had changed FMV in any way, Thomas stated that it had started to at least. It was not finished, though, but it will never be. In the Visby project, environmental issues had, in the middle of the process, been negotiated into the contract with Kockums. Many things were not there in the beginning, but as Thomas concluded, "it is like with Smyge, it is more a mental matter, a matter of education, to make people aware". So what about raising awareness through, for instance, environmental trainings? According to Thomas, some had received education and there were trainings targeted towards certain groups, for instance, the procurers. The pressure was quite high on the procurers and their environmental competence was very important. Thomas said that those working with procurement were very good, but he would personally like to see more of them. There was also the intranet system, Portalen, where there was informational support for FMV employees. Among the information were current objectives and standard forms in the environmental work. This was in the cradle, though, and environmental consideration in the informational support was at the time mainly focusing on energy-use and chemicals. In the environmental report covering 1998 (p 6) it was claimed that: "All the governing regulations and other environmental information including reading hints can be found there [in Portalen]."

Thomas pointed out that it was important to perceive a greening process as a system of changes with a wide range of actors involved. It was not enough to have one competent actor in a relation. They all had to be. One of the actors was the Armed Forces and another was the supplier. A system perspective was also evident in Thomas' view on the internal environmental work. From his view, if the issues should have an impact, it was important that the Armed Forces made relevant demands in order for the issues to be in the "first document". Within the Visby project, Thomas had to "comply with the headquarter's [the Armed Forces] TTFO, as it is called, tactical, technical and financial objectives. All the demands are listed there. That is my bible." In regard to the suppliers, some were proactive in the environmental area whereas others conformed to legislation and engaged with the issues because they had to. In general, he claimed, "they mirror the law and they also mirror what we are requiring". Focusing on the business community, Thomas emphasized the need to take greening seriously and to
perceive it as a factor deciding a firm’s competitiveness. This was not something that “the cat had dragged in” and Thomas returned to the mental aspects of a greening process:

I think that within the defense sector, this thing with environmental impact, when you shoot the enemy, of course there has to be some lead! No, but it is a mental changeover that will do it and it is on the way, and I mean, Sweden is a nation driving environmental issues.

The pressure to deal with environmental issues was not that obvious, although neglecting them, in Thomas’ view, would not be accepted by the general public or by the government. It was, however, stated that there was no interest to neglect them. Bengt’s environmental group was one actor making sure of this, but through Thomas’ experiences they were only called upon when that type of competence was needed. It was also the respective project manager that made the call. The group was not automatically involved. In this case, Thomas said that there was a lack of knowledge and routines in the everyday work: “When that is achieved, the effect will be broad, so to speak, and in that sense, FMV has not arrived at the finish yet”. Environmental issues were at the time, in Thomas’ eyes, not a natural part of the FMV worker’s everyday life.

At the end of our meeting I asked Thomas if he thought I had left any questions out during the interview. Was there something he thought I should pursue, now better knowing my interests? He mentioned the new submarine project, Viking, which was one of the other environmental examples listed in the environmental report. Viking, he said, was a coming strategic project and a bit special since it was a Scandinavian cooperation project where different requirements and cultures had to be harmonized. This way of working, Thomas thought, would probably be the way for future FMV projects. The benefits were mainly financial when they were splitting the investments, but there was also strives to save the shipbuilding industry. The project was in its definition phase, housing some uncertainty of whether or not there would be any submarines. Focusing on environmental issues, Thomas claimed that:

They should be, and they surely are, right there from the start as it is a project, not as with Visby in 1995, where the order... Yes, I do not know really, but there will be a couple of years before there is an order, so they have all possibilities to be in the forefront.
I went to the old shipbuilding quarters (Kockums) in Malmö harbor in early February to meet up with the Viking project’s deputy project manager, Jan Nordenman. Jan started at FMV in 1972 with an educative background as naval officer and Master of Science (Naval Architect). He had spent a third of his career in the field and about two thirds at FMV. Among other things, he was the project manager of the latest Swedish submarine project, Gotland, where three submarines were designed and constructed. In that case, he entered the project in the construction phase, which made Viking a bit different as it was still in the definition phase.

Viking then, is a Scandinavian cooperation project (Denmark, Norway and Sweden) aiming to develop a new submarine for the respective navies. The project has a political dimension, Jan argued, where the common good has to be surfaced. One way was to create as many positive spillover effects as possible, which had been done in other projects, such as JAS. That project resulted in positive effects on the business community, especially regarding the development of technical competence. In a brochure from Viking it was stated that: “In the Nordic countries, the overall industrial conditions for achieving additional commercial benefits in the form of technology spillovers from the Viking Project are considered excellent”. The spillover focus was partly a reason for why there was openness towards the scientific community. All quotes below are from our February meeting.

Our discussion began with project work in general and Jan described the basic process in FMV’s organization. The Armed Forces formulated operational requirements and sent them to FMV. They turned them into technical requirements and sent them to the industry, which realized them. The process was guided by an Earned Value approach, but Jan saw no real difference between the old and the new way of working. “We have always worked with a structured approach”, processes had been broken down and structured so in a way, “nothing is new under the sun”. One reason for the new project management concepts was in Jan’s opinion that things moved a bit faster and in a more
complex context today compared to before. “Earlier, a co-worker was grazed into the Submarine Division” (Ubåtsbyrån), where about thirty people worked, all focused on submarines and submarine projects:

When the Divisions existed, each Division had its own “culture”, which in this context is not something negative. But it meant that the group was focused on their area of interest, their ‘babies’, and as a result found pride and satisfaction to be part of the team and the Division. But today you are supposed to submit to the one and the same, which is a type of formalism and you do not feel at home neither professionally or mentally.

FMV’s new project work was also based on merging the methods used by the air force, the army and the marine. “The thought is good but not sustainable in the full extent”, mainly because the different areas were unique. The navy had no prototype production, as there were only a couple of exemplars constructed of each new vessel. The general project started with a futurological study, followed by a planning stage, a design stage and a construction stage. This process took between eight and fifteen years depending on the project, which made each process unique. The intentions of the Viking project were to develop and acquire the next generation of submarines as a common generation of submarines - the Viking Submarine. A common acquisition was expected to make the process cheaper compared to national acquisitions (about 20 percent cheaper was possible, Jan estimated). Different cultures and requirements still had to be harmonized, though:

Sweden and FMV has a long tradition, established and successful, to plan and manage projects aiming to develop and construct ships and submarines in close cooperation with the industry, sometimes called “the Swedish Way”. It has been a rather informal way of doing things between customer and contractor who have established a good understanding, respect and ‘standard procedures of doing things’ between themselves. Also, between the Armed Forces and FMV there has been a rather informal and simple way of doing things based on sparsely documented procedures, and it worked beautifully within Sweden. With experience from both FMV’s cooperation with the Australian New Submarine Project and now from the Viking-program, I have come to the conclusion that ‘the Swedish Way’ cannot be fully transformed into an international cooperation.

The Viking project was organized through a multinational Project Group, established by the materiel command of the three nations. The project manager reported to a Steering Committee, which was manned by the heads of the respective materiel commands. The chairmanship rotated between the three admirals. The project manager at the time was a Norwegian, who managed a group of about twelve people. They were organized in a process- and administration branch, and a product branch. Jan was the product manager. FMV had also chosen to work with one main supplier, a brand new firm, the Viking Submarine Corporation (VSC). The firm was co-owned by firms in Sweden
There were between six and eight persons working at the VSC. The VSC was also an important step in realizing the Viking project. Nobody knew, though, if it would be realized since it was still at a definition stage. The project was also by all standards large and if carried through, it translated into approximately ten to twelve billion SEK in procurement. In their replacement plans for submarines, Denmark had a need for new submarines in 2009. The other navies had no political goals or plans at the time, but Sweden might get Viking in 2012-2014 and Norway maybe in 2015 or later. The time-schedule looked like this:

1997-2000 Study and concept phase
2001-2004 Project definition phase
2005 Decide on whether or not the submarines should be procured in an acquisition phase called Design and Construction Phase.

The operational requirements were expressed in functional terms in a Submarine System Specifications (SSS). The aim at this stage of the project was to develop an improved set of specifications. Environmental aspects were included in the SSS, stating that the submarine should be designed and constructed in compliance with international environmental regulation. If, for instance, the Nordic countries’ legislations differed from each other in any sense, the legislation with the toughest requirements would be the one to comply with. During our conversation, Jan brought up a couple of environmental matters linked to the Viking project. One was halon used for fire safety, which the navy had been given an exemption to use if there was no other alternative. Jan meant, however, that they would not have this possibility for much longer. The wastewater was another matter. Earlier submarines released their sewage in the water, but there was now a requirement to design the submarine in order for it to retain all waste until arriving at the docks again. This meant that there also had to be a system to handle the waste once the submarine arrived at the docks. In Viking's case, this meant that: "We have to have an extra tank, which could lengthen the submarine. The length of the submarine is intimately related to the costs of constructing it, as well as the sewage system."

In Jan's eyes, the environment put an extra challenge to the designers. A submarine is an extremely optimized vehicle in which every function and its engineering effects had to be evaluated on whether or not they were needed. Earlier it was the requirements of war that was the baseline in those analyses, whereas now they also had to consider peacetime. There was, however, a place for environmental issues in Viking. In the project management manual from 1995, which was the second edition, there was a chapter devoted to the environment (the last one, number ten). In this chapter, there was an emphasis on considering environmental aspects when financially feasible.

There had also been an encompassing environmental overview of Viking from within the project in a study conducted by one of the Danish
representatives. The study was ready in November 1998 and incorporated several aspects of the project, political as well as technical. Also, in October 1998, a consultant report about life-cycle assessments (LCA) methodology was presented to the project group. The report essentially pointed out the particular potential in the Viking project, as it was in an initial phase, to incorporate an environmentally sound product development methodology. There was a suggestion to conduct a LCA, which could be used as a base for further work. ISO 14040-14043 were mentioned as the key standards, which, it was stated, were also accepted on an international scene by other large corporations, such as Volvo, ABB and Stora. Such a framework framed the target and the reach in making the LCA, followed by a life-cycle inventory. The inventory identified and quantified all relevant material and energy flows in the system, which was further used as a platform when estimating the environmental consequences of the system. In a brochure on the VSC, however, there was no mention of environmental issues, except from one paragraph on Kockums. This was about the unique engine, which was supposed to be incorporated into Viking. This environmental emphasis had little direct connection to the project.

The System Safety aspects were present in Jan’s account, although not as evident as expected. Instead, environmental issues were perceived as complicating the process for the technicians and as another factor making the process more expensive. There was, though, room for environmental issues in Jan’s account and Viking showed signs of environmental traces. There was, however, still some uncertainty about how environmental statements were translated into the projects. Perhaps some other actors could help me.

**System Safety, materiel systems and environmental management systems**

From the interviews with the two project managers, it was obvious that the area of System Safety was a part of FMV’s contemporary and future environmental work. Bengt directed me to Johan Gustavsson, a specialist on System Safety and a member of the System Safety group. Johan came from a position at the Swedish National Maritime Administration to FMV in May 1999 and was placed at the Ship Division, which just like the Submarine Division was cancelled in the reorganization. Johan was hired to explicitly work with System Safety and he was responsible for those issues in the Visby project. Visby was his biggest commitment at the time, but he also participated in about a dozen other projects, keeping track of the System Safety aspects. I met Johan in February 2001. He started by handing me a copy to keep of the System Safety Manual (FMV, 1996):

In the area of System Safety we are dealing with risks to person, the external environment and property. This is based on the Supreme Commander’s task to be responsible for the working environment in the organization, which requires a certain level of safety since... well, the way the Work Environment Act is written, there are a lot of exceptions when it comes to military activities and there are several exceptions when you look at marine activities. And, when you study Miljöbalken, there are
several exceptions for the military and there are for certain even more exceptions when you enter marine activities. And, third, when it comes to property, the Armed Forces have no insurances on their stuff.

A lot of exceptions and no insurances - I started to realize why System Safety appealed to my respondents. In his account, Johan early on emphasized that it was Safety and not Security that was in focus. Security was often related to the national defense as it is about outer-threat-scenarios where someone is trying to take something or deliberately cause damage. Safety is about damage not deliberately caused, such as in an accident or through carelessness or incautiousness. Also, the environmental work and System Safety were two separate entities in the organization. They had, however, mutual interests and they were at the time trying to find more common ways of working and areas of responsibilities. One key difference between the two, so far at least, was the environmental group's focus on the long horizon. This was not as evident in the System Safety group.

Johan continued with the reorganization initiated at FMV in 1999, a time when they worked in "fairly strict compartments with air force, army and navy". Focusing on, for instance, fire safety, which could be common for all sectors, there was earlier one function within the army, one within the air force and one within the navy. During the reorganization, they were merged into one group. Johan said that the advantages of this way of working were that you could be a specialist within your area and then "generalize yourself out towards the different projects". In the old way of working, there was little competence development within the own area since there were few opportunities where those working with fire safety could meet and exchange experiences. Working together, Johan argued, would result in more unified ways of working within the different sectors and in more unified risk assessments.

In the Visby project, there was a cooperation group focusing on System Safety. The group had divided the project into four parts: management system, weapon, vessel and sonar. These parts were managed as separate projects, but they were merged on a higher level. Johan worked as a sounding board for all four sub-projects with the responsibility of making the levels coherent as well as integrated. The project, he explained, had a high tempo with a high workload in the different sub-projects. This meant that: "I do not feel that I have everybody completely with me in all projects. So, I feel that I have to kick and push a little, sometimes almost press them in front of me." When pondering the reasons for this approach to environmental issues, Johan claimed that:

What is difficult with the environmental issues is that engineers, they are used to dealing with everything with a folding rule and state right or wrong, and then they measure and evaluate. But if you start to think about environmental issues and, for example, how an emission affects humans in the long-term, than it is difficult to get the quick answer. [---] If you look historically on a substance such as asbestos, which has excellent technical qualities, as hot isolation and binding agent, it also has side-
effects for people dealing with it. But if you set limits and look at the product from pure technical aspects it is... you can analyze it from that view, but you have to look at it in its context and that is what we are doing here... trying to keep a helicopter view.

Johan’s strategy was to work with the issues in a positive sense and a positive approach, he thought, was important if they were to gain momentum in the organization. One example was the Visby body where a lighter body made everybody happy through better performance and lower emissions. The lightweight body also had very good isolating qualities, which were good as the vessel spent a lot of time at the docks where it continuously had to be kept on stand-by and on maintenance heat in order to avoid condensation. Another example was a new water-jet aggregate, which increased the efficiency with 20 percent and made the particular vessel 10 knots faster. The issues, Johan claimed, “should have a positive effect on the operations and not be about composting and poor performance”. It would be hard to get people on board otherwise.

As a part of the System Safety issues, what were defined as environmental issues? Johan divided it into the content of the vessel and operating the vessel. The content meant chemical products and the so-called observation and limitation list defined by regulations on chemicals. A chemical product (I asked Johan) is something you can poor in and out of a jar, such as powder or fluids. A simple example is when painting a chair. The paint is a chemical product until it is applied to the chair. The cloth on the chair could be flameproofed and the flameproofing agent is a chemical product until it is applied on the cloth. Then the cloth is a product per se. Johan said that they controlled the chemical products they used, but they did not have sufficient control of the products (the chair, for example). The latter part, operating the vessel, was mainly about emissions and leakages. There was also the issue of taking care of stored waste when arriving to the docks. Generally, harbors had a system called “no special fee” where waste management was paid for through the “parking-fee” paid to the respective harbor. Of course, there had been some bad examples here, Johan stated. He referred to the vessels passing by the large oilrigs in the North Sea, pumping sludge into empty tanks. They approached a harbor, paid the parking-fee and the harbor took care of the so-called water. It should not be possible, though, because you could only unload a reasonable amount of waste created since your last destination, but still.

Johan’s account concretized System Safety a bit, but there was more to the impact of environmental issues. On this overall venture to better grasp FMV’s environmental work, I had also booked an appointment with Berit Goldstein, one of the six persons in the environmental staff. Berit came to FMV in 1998, but had for 20 years been working with environmental issues at, among others, the Swedish Environmental Protection Agency. She had experience from working with strategies for environmental adaptation of the industry, eco-labeling and the producer's responsibility. In her view, FMV was a technically oriented organization. She also perceived FMV as lagging behind industry in the greening
process: "The civil organizations are ahead of the military". At the time, Berit predominantly worked with the EMS, but she was also a sounding board in a surplus materiel project as well as in several other projects. She also worked with requirements on the suppliers. They had, as mentioned earlier, been targeted with a questionnaire about their environmental work. Berit stated that 70 percent had answered without any reminders indicating that most of them work seriously with the issues.

FMV's EMS work started in 1997, but at the time it was in a development phase. There were plans to integrate the EMS into an integrated management system together with the quality system. Berit was a part of a review group, which focused on the routines developed around those issues. I asked Berit about the attention given to such issues in the organization and she said that there were mixed interests at lower levels. The procurers were responsible for the commercial side and they had had the chance to participate in some basic trainings. The technicians, on the other hand, were responsible for the requirement specifications. The main project managers (the materiel system managers) had had a special environmental training for one day, of which half of them participated in. These managers became more important due to the reorganization, Berit argued. They played an even more strategic role in the process as every project and assignment at FMV passed through these managers:

Working with materiel system managers is one way. It is about creating a need in the next phase. We also have a discussion on how to work strategically. Are we [the environmental staff] supposed to do the environmental job or should you be able to recall those resources, that is, the main efforts are to integrate? We have not really arrived at a way of working with this yet. Should we aim at environmentally educating everybody or should we focus on one or a few at every competence center? I guess I believe in the latter.

The driving forces in the environmental work, in Berit's view, originated mainly from the government's requirements, the Armed Forces' targets, the general public, some of the internal actors and media. Dagens Nyheter, one of Sweden's largest daily newspapers, ran an article series on child labor where FMV was one of the acclaimed procurers. The debate concentrated on the law on public procurement and the requirements a public organization could make in reality. The debate, in Berit's view, was constructive. It was also in line with FMV's ambitions to affect the law on public procurement. FMV had also manifested this in some general advices for environmental procurement (earlier referred to through the database support). These were predominantly about hazardous chemicals, fuel consumption and end of life aspects (scraping). A basic point in Berit's account was, however, that:

We are working a lot with education, trying to highlight good examples. We have invested in educating materiel system managers in order to get a decent width in the environmental work. In those educations, Miljöbalken is one part, demands from the customer [the Armed Forces] another, and environmental effects from the materiel a
third. We are also working with a project right now that involves eight materiel system managers, which aims at identifying important environmental aspects in their materiel systems.

These efforts, along with others, made Berit conclude that environmental issues were beginning to become issues for FMV: "It is starting to spread now. It is starting to be serious".

The environment in annual and environmental reports

In the 1992/1993 annual report, a need to change the fuel supply; considering laws on safety and environment; and the organization’s involvement in the Armed Forces’ environmental drafting committee were mentioned. There had also been some investigations of environmentally dangerous remains and some risk assessments. The matter of ammunition was touched upon. FMV also took part in an emissions investigation at all national airports. Every purchase made by the organization would soon had to consider environmental aspects and environmental trainings were arranged to support this. The following fiscal year, the environment was left out with the exception of the earlier mention of the fuel supply, which was driven by the ban on producing and distributing leaded petrol.

In 1994/1995 the resigning Director General’s (the new director started the 1st of September 1995) introductory pointed at FMV’s unique competencies as a combination of technical, commercial, system and environmental aspects. In the environmental area, a new facility for environmentally friendly engine tests was mentioned and at a separate unit, environmental issues were merged with user safety. It all followed the Armed Forces’ guides. The fuel issue reappeared since they were now testing unleaded fuel on tracked and wheel vehicles. They were also testing new lithium batteries and Visby was mentioned as they had started to replace halon and CFC.

In the 18 months report (1995/1996), when changing the fiscal year, the Director General focused on the materiel system’s lifecycle in her introduction. Other examples were the army’s investigations and risk assessments of maintenance regiments, and the operation “Spring Flood”, targeting the liquidation of used materiel. The operation had affected more than 70 000 different objects, such as large units, radars and torpedo vessels. More than 400 smaller units had been liquidated and 250 storages had been emptied, representing an area of more than 100 000 square meters and about 10 millions SEK in savings each year. The new engine in the education plane SK 60 was mentioned for its lower fuel consumption, less noise and more power. Again, a reader learned that the earlier mentioned engine test house now conformed to the tough environmental demands regarding noise. Also again, leaded petrol was liquidated. In the section dedicated to the environment, two driving forces in the greening process were singled out: legislation and the Armed Forces’ environmental policy.
In the 1997 annual report, the Director General had FMV as a leading authority in the environmental area and one of the pilot authorities appointed by the government. She also emphasized that it was important that FMV continued to increase the investments in this area. Also, the report accounted for an increased responsibility to register dangerous substances. The R&D work on Visby's body was brought up, but there was no link to the environment. The environment was, however, linked to the paragraph following Visby, where the environmentally friendliness of thermo plastics were mentioned. There was also a note on the rapid development of new materials, which increased the need for new test methods on environmental influence. Under the environment headline, the organization was singled out as having a responsibility beyond legislation. It should be a role model for the rest of society. Focus was on the EMS work and the indirect and direct effects FMV had on the environment. The use of ammunition within the Armed Forces, for instance, released about 180 tons of lead into the environment each year. A goal to reach all employees with information on FMV's environmental targets and work during 1998 was also set.

In 1998, the Director General's introduction claimed that FMV continues its efforts. The EMS work and the educations were mentioned. There was also a lean towards environmental safety. System Safety was mentioned as an issue in the international cooperation project, Partnership for Peace. A reader again learned that Visby's material was unique, but there was no link to the environment. Another mention was a robot project in the air force, which had conducted environmental analyses. In the environmental report the same year, FMV's first, it was stated that: "At present and up to the year 2003, the coordination unit's [the environmental group] most important task is to establish an environmental management system which is to be integrated into the ordinary management system" (FMV environmental report, 1999, p 3). A reader also finds out about the organization's environmental objectives and impacts. Visby's body was mentioned as an environmental example.

In 1999, the Director General stated that safety in the supply of materiel was not just about reliability of delivery, but also about personal and environmental safety. Again, a robot project in the air force constituted an example where environmental technology was considered. Visby was present, but focus was on the propellant smoke from the booster motors. This had to be dealt with in an environmentally safe way. The system security issues in connection with the hatch opening also had to be resolved. The environmental section in the report focused on the EMS. In the environmental report, the organization's impact was reviewed. The environmental manager stressed that openness in the areas where FMV was not so prominent was important. Targets together with an action plan were presented, where most activities dealt with administrative routines. Visby and Viking were mentioned as good examples of the organization's environmental work.
Discussion

As I write, bombs are falling on Afghanistan and on Palestine, and my immediate concern is not with the environment. I am sure that few of us are thinking of the environmental aftermaths of such conflicts as people get their worlds shattered. Military action as demonstrated in the so-called anti-terror wars, or in the Balkans or the Gulf, does not have an environmental policy or an environmental strategy. When security (economic, political, human), and not safety as in the account of FMV, is at stake, the environment is not prioritized. War is not sustainable either. Not in any sense. It is often a last option and a sign of earlier failures. The modern defenses, however, are increasingly focused on the diplomatic and pre-physical processes, on a defense in peace. They are therefore not solemnly about the hardship tanks-and-guns aspects of it all. Modern defenses, it seems, are rather legitimized on a similar arena as modern business organizations. They are expected to perform as knowledge intensive, intelligent, multinational and shareholder value-producing organizations. Respondents and official reports repeatedly framed FMV as a firm and not as a public organization.

For the modern defense, environmental concern has to be pondered even if conflicts traditionally come down to enemies and lead. The organizations have to prove their capacity to take responsibility for the environment. It might, though, be paradoxical or a double standard of morality thinking about the missiles that landed on the Red Cross storage inside Afghanistan being produced by an ISO 14001 certified organization. The missiles were also most likely produced with the latest environmental knowledge. FMV was, for instance, working with the Americans in the environmental area (see the co-authored report from 1999 in the reference list) and environmental concern seemed to be a part of these defenses’ contemporary agendas. It was for certain a part of FMV’s agenda. One issue, however, is what kind of approach to greening would be compatible with developing and producing such products. Is greening merely one way of legitimizing the defense sector or are we on the path towards dealing with the ethical and environmental matters intimately linked to it?

Tracking FMV’s environmental work started with the environmental manager, who gave a broad introduction to the organization. When searching for some practical examples of how environmental issues were approached in the projects, I was first directed to the Visby project where the project manager was more into System Safety issues. This area was a fairly recent concern and as Visby started in 1995 they had not integrated it from the beginning. Perhaps a fresh project could serve as a better example. I was directed to the Viking project where environmental concern, as part of the System Safety package, was evident. It was not, however, a particular focus. Environmental issues were rather perceived as complicating the development as well as making the process more expensive.
Greening in practice

In the account of FMV there were several examples of what the organization was doing in its environmental work, as well as of who were conducting the activities. The list below constitutes a starting point for the discussion:

- The ISO 14001 system
- Environmental staff and the environmental manager
- Environmental aspects in projects (Visby, Viking, liquidation of ammunition, etc.)
- Monitoring environmental legislation
- Environmental reports
- Environmental education
- Environmental handbook for procurers
- Meeting large suppliers
- Targeting materiel system managers
- System Safety (and integration of management systems)
- Risk assessments and the risk matrix

At the first encounter with the organization, the EMS was awarded a specific meaning in the greening process: “we will fix this through implementing an environmental management system”, the environmental manager claimed. The environmental report from 1998 also claimed that this was the group’s main task for some years to come. Working with the EMS, in the manager’s view, meant dealing with all the aspects of the process: the organization’s environmental impact, the environmental actions plans, the routines and structures needed in the environmental work, and the creation of environmental visions and targets.

There was a department, or a competence center, which housed the environmental group. The group consisted of an environmental manager and a staff of six. They acted as a support group for the organization and worked with, for instance, implementing the EMS, putting together the environmental report and monitoring environmental legislation. According to Visby’s project manager, the environmental group was not automatically involved in the projects. They were called upon if the project manager needed this particular competence. As a member of the group, Berit mentioned a number of projects where she participated, but those were explicitly related to environmental issues, making her participation obvious. One such example, also mentioned by Bengt, was the liquidation project (ammunition). The System Safety staff, however, was involved in many product development projects, despite profile. One example was the Visby project. Their engagement had a broader approach to environmental matters, as they were merged with issues on working environment and property. One aspect binding the people working with environmental issues at FMV (the
environmental group, the System Safety staff) was, though, that they were predominantly engineers (counts for the project managers as well by the way).

The environmental group explicitly targeted procurers, as they were key actors in deciding the organization’s environmental impact. If they purchased products entirely based on price, they would most likely contribute disproportionately to the environmental impact. The procurement process was, in one sense, infiltrated via Portalen (the intranet system) where, for instance, checklists on forbidden and not recommended substances were listed. They had also targeted the procurers with environmental training. FMV, or the procurers, could, though, not at the time, make demands stating that the suppliers had to have an EMS certificate. The law on public procurement did not allow it. The organization had therefore met the suppliers and informed them about FMV’s view of environmental issues. According to Bengt, Berit and Thomas, however, the suppliers already had a sufficient environmental work since they competed on an international market.

Materiel system managers were also key actors in the environmental work. Reaching out to them with environmental training created a better chance of having environmental overspills in the remaining organization, as these managers affected a whole system of products. The idea was that once integrated into their processes, environmental concern would diffuse throughout the organization. The tactic was clear: starting with procurers and materiel system managers, a need in the next phase, as Berit put it, was created.

Another part of environmental issues in practice, as well as of systemizing the environmental work, was the System Safety work. It was the project manager for Visby who directed my attention to the System Safety area: “the big thing that has emerged towards the end now is an area named System Safety”. System Safety did not single out the environment. Instead, a range of important issues (work environment, natural environment and the lack of insurances) were integrated. One way of working with this integration was the risk assessments, which granted a value to the natural environment and the working environment. Risks were framed and packaged with the help of the matrix. Some risks were tolerable whereas others were not. As it appeared, these assessments were assigned a particular importance, even though, as Johan pointed out, there was more to do. The reorganization into specialized centers would, he speculated, for instance, assist in making them more unified.

This system focus in FMV’s environmental work indicated an interest in integrating key processes in the organization. The focus was, hence, not on specific products or projects. This approach, with the management system, the procurers and the materiel system managers, could be interpreted as a strategy to infiltrate environmental issues into the development processes. Getting them in at the beginning of a process, making the outcome more encompassing and long lasting. It was about creating a need in the next phase.
Driving forces and stakeholders

The Swedish military was under a financial pressure from the government. This meant tighter budgets and less money being spent on projects and employees. Focus was on adding, or earning, value. The organization had to report the largest projects in line with this methodology to the government. Time and money had to be accounted for, resembling the modern firm's focus on time-to-market. The organization had also, like the modern multinational corporation, focused on core competencies and process orientation since the early 1990s. Since this study started, this has resulted in a reduction of personnel with more than 20 percent and a restructuring into Competence Centers. The latter also matched a larger trend in society in which an increasingly global and fluid business community demands a more flexible working force. Manpower was the metaphor as the project managers rented staffs internally. Employees became consultants, temporarily hired as if they were micro enterprises within the organization. These overall developments were also a frame within which environmental issues were considered.

This framework originated foremost from two stakeholders, the Armed Forces and the government. Environmental issues were raised by the Armed Forces in their role as both customer and "owner". The government, among other things, ordered FMV to implement ISO 14001. These actors' demands, working from the top-down, constituted imperatives in the environmental work. A similar approach, to a large degree, also goes for legislative bodies.

The organization's environmental work was also driven by legislation. The waste-issue in the Viking project was raised due to legislation. The waste released should be measured against the increased costs and technological complexity of developing the submarine: "We have to have an extra tank, which could lengthen the submarine", Viking's deputy project manager explained. He continued: "The length of the submarine is intimately related to the costs of constructing it". Although not argued, it sensed that waste did not carry a similar dignity as the costs of the extra length. The costs had, of course, a direct effect on the project's budget. Legislation was also a driving force in Viking since the project's policy was to conform to the toughest environmental legislation in the three countries. As the basic submarines was supposed to be the same for the three nations involved, this was, though, obvious. They could not buy, or develop, anything less. Visby's project manager also indicated the focus on legislation in the contacts with the suppliers. They constituted another stakeholder and the demand from FMV was that they conformed to environmental legislation: "they mirror the law and they also mirror what we are requiring".

One issue was priorities, however. Judging from the respondents' accounts, the environment was prioritized, but not near as high up as cost and products. As Johan Gustavsson indicated in his example on asbestos, technical qualities were strong arguments. Johan's System Safety group was trying, through a helicopter view, to acknowledge dangerous substances' downsides, though, especially their
side-effects on humans. Legislation was in these cases a thorn in the side of FMV's environmental work, as they could not set tougher standards than the law. But FMV also had legislative exceptions, for instance, regarding their use of halon. Bengt explained that they were at the time not conforming to existing legislation, but had to rely on permissions to depart from it. The new Environmental Act, in this context, added to the pressure, but the environmental group was not frustrated over this. They even wanted to make legislation (on public procurement) greener. Legislation was therefore both a driving force and an obstacle in the environmental work.

Another driving force was the organization's environmental impact per se. In the annual report from 1998, it was mentioned that the Armed Forces released about 180 tons of lead into the environment each year. Lead is not the environment's (nor humanity's) best friend. In the environmental reports there were also additional information, which in layperson's language illustrated FMV's environmental impact. There were figures on, for instance, MWh consumed divided on testing, electricity-heat-cold and official travels; consumption of office paper, water and electricity. These acknowledgements of some of the destructive parts of the organization amounts some credibility. It also creates opportunities for actors within and outside the organization to ponder some of the consequences of FMV's activities. The most striking part about this driving force was, however, that it reappeared in the respondents' accounts. There was no modesty about the organization's impact, which brings the discussion to matters of identity.

Identity

FMV's identity was, as in the other cases, in flux. Three aspects are highlighted here. First, the organization is an environmentally destructive actor with an ambition to do something about it. They released 180 tons lead into the environment each year; consumed office papers; polluted the air when testing fighter aircrafts; and many more examples encountered in the interviews and the reports. There was, hence, an impression of striving to some degree of transparency, of showing that they had problems to deal with. FMV had reflected on their destructive aspects. There were also emphases on dealing actively with these destructive patterns, where greening existing legislation might be the best example. A faith in agency in those instances, and in being identified as such, was evident in the efforts towards being allowed to discriminate suppliers on environmental grounds.

Second, FMV's project work was still concentrated on compliance to environmental legislation, nothing more. The two projects, Visby and Viking, indicated such a view. The organization per se also had difficulties conforming to the Environmental Act. Coming to terms with it, however, was difficult. There were the financial limits. There was also the bible, that is, the Armed Forces TTFO. Working with environmental issues had to be integrated in this the first
phase, respondents argued. There was also the matter of greening being the responsibility of the whole system. Environmental work at FMV was not a matter solemnly for FMV. These examples had FMV as yet another actor outthere, steered by structures beyond their control. There were hints of passivity, a sense of being just a nod in a larger system. This also became a part of FMV's identity.

Third, as part of the dynamics in the identity construction, the organization was supposed to be identified as a modern organization, almost as a business organization. Some signs of this were the efforts to implement ISO 14001 and the focus on core competencies via the reorganization in which the workforce was turned into consultants, being leased to the ever more projectified organization. These activities were strives for legitimacy. They were trying to get rid of the military emphasis and the bureaucratic and inert traits. FMV should rather be identified as a multi-project, knowledge-intensive and environmentally responsible organization. The rhetoric is typical modern business rhetoric. The environmental manager also stated that: "There are a lot of organizations doing this [type of reorganization] today" and "We have to begin to learn this".

One interesting aspect of FMV's identity is that although it is easy to label them a copycat of industry action, they, by living in the tensions between private and public, also bring something new to the scene. I am particularly thinking of the openness regarding their environmental impact and on admitting to failacies in their environmental work. They do not have the same market forces breathing down their necks as private business organizations have, meaning that they may afford to be more honest. But as FMV moves towards a firm-like organization, assuming that their openness remains, they will enforce a new style of accountability. Such an identity might prove costly for a firm, but for FMV, it is less sensitive and it could also lead to a pressure on their stakeholders, especially if FMV is allowed to explicitly discriminate suppliers for environmental reasons.

**Worldview**

A prejudice I have is that basically, engineers share a military perspective in that things have to be done in a straight line. Johan, working with System Safety issues, stated that: "What is difficult with the environmental issues is that engineers, they are used to dealing with everything with a folding rule". Either it was measured or it was dropped. Such a faith was also evident in the assessments leading up to the risk matrix. Not only was such a process, where future events and consequences were framed, a folding rule approach. These assessments were also in need of a more unified base for judgment, Johan argued, adding to a reductionist emphasis. Since many environmental issues, as emphasized in this study, are inherently complex and uncertain, though, such methods only frame what is possible to measure. Johan, at the same time, and a bit paradoxical, stated that it was difficult to get the quick answer when it came to environmental issues. This should be weighed in, perhaps through adopting what he referred to as a
helicopter view. The environment was boxed-in only to be perceived as difficult to box-in. A technocratic view meets a more holistic view, where the latter aimed at covering new ground on the expense of the former.

It was difficult to get the issues into the projects, the environmental advocates argued. In Johan’s opinion, he had to kick and push the projects in front of him. The attention awarded was limited. The people working with environmental issues, such as Bengt, Berit and Johan, had, being explicitly involved in the projects or not, difficulties influencing the processes. The environmental advocates did not receive the space they wanted. All respondents, however, argued that this thing with the environment was not something the cat had dragged in. On the contrary, it was something they had to work with. A bit contradictory to the technocratic view, though, the mental image of military activity was a hinder: “When you shoot the enemy, of course there has to be some lead!”, Visby’s project manager stated, albeit with some irony. At the same time, he claimed that “it is more a mental matter, a matter of education, to make people aware”. There were, hence, indications of another type of greening although the organization hung on to ISO 14001 and risk matrices.

Viking’s deputy project manager explained part of the matter when he talked about the requirements of war versus the requirements in peacetime. Peacetime defense seemed to have opened new doors for military organizations. Threats were different and the defense development processes were different too, such as in international product development cooperation. Operating as a modern organization in peacetime also meant claiming legitimacy regarding environmental issues. In this process, Johan and others aimed at finding mental images where examples of concrete environmental work played along with traditional FMV activity in so-called win-win situations. Examples were Visby and Viking, as they shared a focus on constructing and operating vessels based on minimizing all revealing signatures. Such a vessel cannot pollute or make noise, which make the environmental advocate, the project team and the users happy. This meant that environmental concern, however, was often a technical and financial issue too. Technocentric thinking was never far away.

The tougher financial situation, as well as the pressure to act as a modern and knowledge intensive firm, also had effects on the working organization as such. Viking’s deputy project manager, for instance, argued that the new organization represents a type of formalism. You do not feel at home, he claimed. The financial situation did not hinder FMV when it came to being open about the organization’s environment impact, though. As mentioned, this might be explained by a fundamental difference between public and private organizations. “Shareholders” cannot abandon the organization, at least not in the same manner as on the stock exchange, due to the organization’s poor environmental performance. Still, however, the environment was subordinated to a technocentric focus with the environment out-there to be boxed-in. There were voices of resistance to such a view, but in practice they seemed to be poorly heard.
This marks the end of the empirical encounters. The remaining parts of the study are more analytical in temperament. I begin with a cross-case analysis (chapter ten), which is followed by a chapter on theoretical connections to and reflections on the cases (chapter eleven). The study concludes with a discussion on two alternative approaches in organizational greening (chapter twelve).
10 Approaches across the cases

This chapter is a cross-case analysis, structured into matters of practice, driving forces and stakeholders, identity, and worldview. In practice, greening centered on systems and tools (ISO 14001, index, LCI), engineers and outsiders, and on communication through official reports, audits and education. The main driving forces and stakeholders were market imperatives, customers and owners, legislation, and environmental impact. The organizations' identities balanced in the tensions between becoming the archetype business and the need to be an "own" organization. The worldviews were characterized by a faith in business-emphasized wins-wins. Technology was a savior and a strongly anthropocentric view of the environment underlined most cases. The chapter concludes by summarizing topics for further analysis.

Introduction

The analysis, as well as the structure of the chapter, relies on the model used in the within-case discussions. Four key parts of an organizational approach were highlighted: in practice (what, how, who), driving forces and stakeholders (why), identity (who were they) and worldview (what did they believe/trust in). Scanning the cases based on these parts, it was obvious that the environment constituted a part of their processes. There were systems, declarations, reports, policies, visions, audits, programs, trainings, staff, managers, and more, dedicated to greening the organization. Many of these activities also reappeared between the cases, constituting signs of the corporate environmental management movement not being a short-lived fad or trend. Environmental issues were manifested in the corporate structures. In some cases they had even influenced the organizations' cultures. This means that the cases, at least on a surface level, have their commonalities in terms of how and why the environment became a part of their approaches. Before discussing each part of the approaches in detail, however, brief summaries of the cases introduce the analysis.

GreenZone probably represents the most radical approach to greening among the cases. The whole site is based on greening. The technological side is an eco-cycle adapted merger between old and well-tested building technology, and new environmental construction techniques. Borders between human and nonhuman are also blurred through the "liquid" or "fluid" solutions implemented in the project, for instance, through using screws instead of nails and living filters instead of mechanical ventilation. Besides the construction, the people working at the site were also a part of the Concept Car. They were all trained to mount the task of environmental ambassadors. The car dealer, Carstedts, also worked with ISO 14001 and was the first dealer to distribute the European manufactured FFV Focus. As expressed by the founder, Per Carstedt, this site would be for the world to see, a state-of-the-art site. GreenZone's identity was, however, a mix of characteristics. They were a pro-active actor,
arguing the necessity of taking action regarding their industry’s environmentally destructive aspects. But they also saw business opportunities in pursuing such a path. Taking the lead would be rewarded by a better market position. This was confirmed when the car dealer’s market share increased by 50 percent once the site was up and going. GreenZone, as a concept, was also framed as having to adapt to larger and mightier structures, as both natural and market laws were taken for granted. Main impressions from the GreenZone case are summarized below:

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<thead>
<tr>
<th>In practice</th>
<th>Identity</th>
<th>Worldview</th>
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<tbody>
<tr>
<td>The site</td>
<td>Destructive</td>
<td>Natural laws</td>
</tr>
<tr>
<td>Education</td>
<td>Pro-active</td>
<td>Market forces</td>
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<tr>
<td>Ethanol-project</td>
<td>Modern</td>
<td>Win-wins</td>
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<tr>
<td>EMS</td>
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Nature’s demands, good business Visionary management

The approach in GreenZone

*Figure 10.1: The approach to greening in GreenZone*

The firms in the Green Guide, mainly driven by large customers, but also by legislators, owners and ethics, conducted light EMS versions through their environmental audits and action plans. Many also had the ISO 14001 in mind in their efforts. Some were educated through the project and thereby ran a better chance to handle the environmental work on their own. All, however, demanded assistance in some form, both regarding motivation and knowledge. Much of the work then, albeit officially with the owner-manager as responsible, was delegated to outsiders, such as the project managers, students and the resource-persons. These outsiders, to different extent, became the firms’ environmental managers. The firms’ identities in regard to greening had them as environmentally destructive, but as relatively small ones. They were also framed as small actors in general with larger actors as counterparts (larger sawmills, farmers, construction firms, etc.). But the small firm managers at the same time argued their capacity of becoming big and powerful through alliances with other small actors. In this identity dynamics, the market was perceived both as the way to go and as one of the things that had to be changed. In other words, they played along with the business rhetoric while also resisting it. For the environment, the richness of resources might have had a soothing effect on the environmental alarms. That is, the environment was out-there and there was a lot of it. Main impressions from the Green Guide case are summarized below:
Electrolux (the parent), legislators and customer concern were the predominant influences in Husqvarna's environmental work. As established in the parent's organization, Husqvarna worked with ISO 14001 and a range of other tools and systems to keep track of their greening process. The majority working with these efforts was educated engineers and predominantly located at the R&D department. The firm's identity centered on not being identified as an environmentally destructive actor, but as a positive, pro-active and capable firm. Aspects that were difficult to change, such as products, machines, tools and customer demand, or not advantageous to change, had the firm as just a minor actor in the context. In these cases, their capacity to alter inert and almost objective patterns out-there was limited. There was, though, an active view of the firm's ability to influence the legislative processes targeting their products. Basically, the firm represented a particular faith in market orientation, better technology and in making the organizational structure more efficient in order to combat environmental issues and increase competitiveness. Main impressions from the Husqvarna case are summarized below:

**Figure 10.2: The approach to greening in the Green Guide**
As Husqvarna and FMV, Duni was reorganizing at the time, which was mainly motivated by a market orientation. They were, for instance, focusing on core competencies, the new development model aiming to reduce time to market, the stock exchange introduction and the strategy to grow through acquisitions. This affected the firm's environmental work, making it a business issue first. Alongside this the environmental work was also driven by legislative bodies, consumers and NGOs. In practice, the staff, which was mainly engineers, implemented ISO 14001, developed the environmental reports and educated the procurers. The firm's identity moved in the tensions between being perceived as a major environmentally destructive actor and on being open about their relatively small (they argued) environmental impact. They were perceived as a symbolic actor with a larger environmental impact then they felt was just. The staff combated this through openly communicating technical studies of their products' environmental impact. Cultural aspects of the greening process were not assigned any major role in the encounters. Main impressions from the Duni case are summarized below:

<table>
<thead>
<tr>
<th>In practice</th>
<th>Identity</th>
<th>Worldview</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS and tools</td>
<td>Modern</td>
<td>Market orientation</td>
</tr>
<tr>
<td>Engineers</td>
<td>Openness</td>
<td>Technical emphases</td>
</tr>
<tr>
<td>Communication</td>
<td>Symbolic</td>
<td>The environment is out-there</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Good business, legislation, NGOs and customers</td>
<td>The approach at Duni</td>
</tr>
</tbody>
</table>

Despite being a public organization, FMV, driven by their owner, was under a pressure to perform as a modern knowledge intensive firm, striving towards earned value in times of reduced resources. The environmental work was subordinated to this, forcing it to play along with a business framework. Engineers in the environmental group, as well as in the System Safety group, mainly handled the environmental work, a work foremost motivated by legislation and the organization's environmental impact. Key activities were, for instance, the implementation of ISO 14001 and arranging environmental educations. On matters of identity, the respondents and the reports had FMV as an environmentally destructive actor with an ambition to deal with the problems. Still, the organization was also framed as dependent on outer circumstances to deal with their situation. Their dealings centered mainly on technocratic measures and on developing market oriented win-win examples. Main impressions from the FMV case are summarized below:
As the five figures above indicate, commonalities between the cases are accompanied by differences. A question is, however, if Husqvarna and Duni, as two large manufacturing firms with a global market, are possible to compare to the firms participating in the Green Guide or to FMV’s knowledge-oriented public organization? In the two multinational firms, there were encompassing infrastructures, retooled in a process of five to ten years. In the small and rural firms, there were organizations without major manufacturing tools. FMV developed ships for billions of taxpayers’ money, while Öjeryds supplied Norrmejerier with milk from 28 cows. Greening is, and most likely should be, a different venture for each of them. Still, there are many similarities cutting across the cases, such as ISO 14001, engineers, legislators and the emphases on the market forces. Why is this so? Why are they not more different? Maybe, as Sting puts it, it is because we share the same biology regardless of ideology. The impression is, however, that many firms in this study share ideology too, or as in this analysis, they share an approach to greening. The comparison of the approaches in this chapter aims at reflecting on and creating a better understanding of this situation. The analysis begins with the practical part.

Greening in practice

There were several practical examples of how excellent the organizations had been in reducing their impact on the environment. The respondents were usually quick to account for them. GreenZone was overcrowded by examples of how the impact had been reduced compared to an ordinary establishment. In the Green Guide, firms such as MGV (reusing rubber), Bebos (the waste disposer, car-pooling) and Samhall (from twelve to three tons of solvents, the sales of the environmental coffin) are some examples. Husqvarna had through catalysts and the E-tech solution reduced their products’ influence on the environment. Duni had maintained the same (or better) quality with a lower input of raw material. FMV’s Visby corvette had through a new and lighter body reduced its dependence on fossil fuels.
Parallel to this, however, there were signs of the organizations increasing their environmental impact. Some had a growing turnover and although many had developed more efficient processes, they had also increased their total input of raw material. This meant that more materials were pushed around by the organizations, which partly also seemed to have strengthened the focus on environmental activities. The activities encountered in the case studies are listed below, serving as a point of departure for the discussion. The organizations were:

- Conducting environmental audits and accompanying programs (small-scale EMSs)
- Implementing ISO 14001
- Integrating management systems (quality, environment, working environment)
- Developing environmental indexes
- Using and developing analytical tools/methodologies (LCI and indexes)
- Developing (environmental) product declarations/specifications
- Eco-profiling products (eco-labeling)
- Authoring environmental reports
- Arranging/attending environmental educational sessions
- Developing environmental handbooks/systems for procurement
- Appointing environmental managers/coordinators and staff

This list of activities covers a range of aspects in the environmental work. Some aspects, even though they are all to different extent bound together, could be grouped together as they hover around the same area. In this analysis, the activities are grouped in three categories. The first category frames the EMSs, LCIs and indexes, as they all serve the purposes of systemizing and structuring the environmental work. They are here labeled *administrative systems and tools*. The environmental staffs, managers, coordinators, boards, groups and networks are about the organization of people in the environmental work. This predominantly targets those working with environmental issues within the organizations. These individuals and groups constitute the second category, which is labeled *actors* in the following analysis. Educational sessions, information meetings, eco-labels, product declarations and environmental reports are about information, communication and interaction in the environmental work. The working label for these activities and this category is *communication*.

*Administrative systems and tools*

The EMS standard, ISO 14001, appeared in all cases. The car dealer at GreenZone was at the time of writing certified according to ISO 14001. Statoil and McDonald’s at the site had through Per’s leasing contracts agreed to implement the system. MGV in the Green Guide was certified and according to
Peder, their environmental work came down to ISO 14001. They also implemented it in a remarkably short time. Samhall and Sorsele Trä were implementing the system, although the process was a bit slower in these firms. Bebos and Baseco were moving toward the system, but they were at the time not dedicated to implementing it. They talked about it, however. Husqvarna was on the way. Duni was on the way. FMV claimed that ISO 14001 was the way to fix it (the environmental work, that is). Small and large, multinational and local, ISO 14001 was the EMS for many organizations in this study. ISO 14001 was also ascribed a major part of the environmental work in those organizations, if not as the way to fix it, then as constituting a main part of the organizations’ greening processes. GreenZone, however, might be an exception.

Some of the firms in the Green Guide did not explicitly work with the system. Instead they followed a simplified version through conducting environmental audits and action plans. In this version, background, policy, targets, investigation and action plans, constituted the structure. It was basically a small-scale EMS, summarized in a pamphlet. These pamphlets were then used as small-scale environmental reports in communications with stakeholders. The audits were also structured in order to constitute the initial step in a more encompassing EMS work. That is, if the small firm managers decide on going for an ISO 14001 certificate in the near future, this would be a decent platform.

One idea mentioned during discussions on the EMS work was the integration of different management systems. There were usually systems in place focusing on managing the working environment and the quality work, at least in the large organizations. An internal control program usually guided the working environment, whereas the quality work was often linked to the ISO 9000 quality standard. Also, in the Green Guide, the consultant lecturing at the final meeting brought system integration up and it must have landed well since this idea stuck on the respondents’ minds (or rather on the evaluation-forms handed out). Duni was working with management system integration. FMV had integrated their systems to some extent in the System Safety work. Working with ISO also made it easier as there were obvious possibilities in merging the 9000 with the 14000 instead of, for instance, the 9000 with EMAS. This was also one factor behind the organizations choosing ISO 14001 before EMAS. EMAS was very rarely mentioned, echoing Bengt’s observation concerning FMV’s contacts with their suppliers.

Integrating the EMS with other management systems might be an effort to get greening into the organization’s core processes. The environment is merged with other fundamental matters. The organizations in this study could, however, be criticized for not doing this. They rather made sure that greening was kept separate in the organization. There was a specific department, a management system and a report for the environment. Through such a lens, merging the natural environment, the working environment and quality management might overcome these divides. But there is also a rationalizing aspect in the ambition to integrate the systems. This aspect plays along with other measures taken to make
the organizations more efficient. In other words, based on, for instance, the environmental staffs' statements on the difficulty of being involved in the organization's core processes, it could be suggested that the EMS was integrated with the other systems partly in order to reduce the costs of running several independent management systems in the organization. This would make economic sense, but it would not be the driver, or strategy, for the organizations bringing the EMS, and greening, up to a similar status level as quality management, for instance. Integrating management systems could be played both ways.

Another important part of how the organizations kept track of their greening process was practical, yet administrative, tools. At the initial informational meetings, the firms in the Green Guide indicated a demand for this in their emphases on a resolute environmental work. Those attending expressed a frustration on the lack of links between environmental work and their own firm. At Husqvarna, Duni and FMV, sophisticated tools measured the greening processes. They relied on environmental indexes and matrixes they themselves had developed. Husqvarna had the volume-weighted Green Index focusing on noise, exhaust emission control, energy consumption and material. The firm also had the materially focused environmental load unit and the database, Tekdata. Duni had the KPI, covering other acronyms such as CO2, S, Nox, VOC, COD, P, N and AOX. At FMV, there was no index like those at Husqvarna and Duni, which may be explained by FMV's type of projects (unique, extreme, long-term, huge budget). They had, however, the folding rule focus, as noted in the examples on asbestos, as well as in the risk assessments and the risk matrix.

Another part of keeping track through tools, intimately related to the indexes, was life-cycle methodology/inventories/assessments. These analyses focused on the product's environmental influence from the cradle to the grave. Duni and the consultant used it in their environmental scale analyses. Husqvarna, through Electrolux, and FMV even had it in their environmental policies to consider environmental aspects from a life-cycle perspective. Electrolux (2000) stated that they had to "adopt a total approach in our operations, based on knowledge of every phase of the life cycles of our products". FMV focused on "from initial concept to final disposal, or 'from threat to throw-out'". This demanded concrete tools to monitor, linking the life-cycle emphasis to the indexes and the matrixes.

For the three large organizations, Husqvarna, Duni and FMV, the focus on administrative systems and tools was also evident in the restructuring of their development processes. New project management models emphasized enhanced control through new administrative structures and routines. There were checkpoints (Husqvarna) and tollgates (Duni), which along with sets of checklists and steering committees would enhance the organizations' chances of reducing time spent in development as well as the costs of the process. Husqvarna coined this focus front-loading. The benefits of these new manuals were emphasized, but there were also critical remarks. It was starting to become a strain, a
Husqvarna manager said. The new way of working was a type of formalism in which you do not feel at home, professionally or mentally, claimed a project manager at FMV. At Duni, the reorganization had not reached as far as Husqvarna and FMV's processes had, which meant that there were mainly comments on the organization they were leaving behind.

There is, to some degree, an exception to the focus on administrative systems and tools in the GreenZone case. The ISO 14001 became a part of the concept, indicating the project's use of systems, but in this case there was a thorough environmental vision and work already in place to build the system around. The system, or any other administrative tool, was not the environmental work. ISO 14001 was one way of staying on track. It might also enhance the credibility in the eyes of beholders outside the project, as other firms and potential investors might recognize the system. The respondents at GreenZone did not account for any direct examples of the project relying on any other measurements, tools or models. One explanation of this might be the unwritten character of the project and the one-time only project organization. GreenZone, with those actors involved, would not be built in Umeå again in the near future. The project organization did not have a Husqvarna or FMV organization behind it. It was special as they, for instance, did not find one person able to hold it together resulting in them staying with the group of experts. They also prolonged the pre-construction phase, guided by the vision more than by a development manual. GreenZone's development process, it seemed, had systems and tools in the periphery. In focus were instead the vision and a number of actors, such as Per, Anders and Ola. This brings the analysis to the next category, actors.

**Actors**

One of the premier questions asked when encountering the respondents, except in GreenZone where everybody drove the greening process at *that* time, was: Who are working with environmental issues in your organization? In the Green Guide, I was referred to the managing director (Anders at Bebos, Lars-Gunnar at Samhall, Carina and Kjell at Öjeryds, the director at Malå Järn & Färg, Roger at Sorsele Trä) or to someone close by (Peder at MGV as the son of the founder/manager, Monika at Baseco as the administrative managers and wife of the managing director, Jenny at the family-firm Grundnäs Kött as the sister in the family). The issues were the responsibility of management, but in practice much of the work was delegated to actors outside the organizations, such as the project managers, students and the resource-persons.

In the three large organizations, the issues were also the responsibility of top management, but also delegated in practice. At Husqvarna, the idea was to spread the environmental work throughout the organization and bind it together in an environmental network. In practice, the work was predominantly allocated to managers at the R&D department. At Duni, there was a department dedicated to environmental issues, Environmental Affairs, housing five employees. The
department was also linked to Corporate R&D and even though R&D often thought they could handle the issues, the main competence lay with Environmental Affairs. This department had linkages to top management through the KPI group and the EAB. At FMV, the environment constituted an own group in the organization, situated at the CC Method. Six employees plus the environmental manager worked explicitly with environmental issues. There were also, though, those targeting the System Safety issues in which the environment constituted one part.

Another part of answering the who question is the profiles of those working with the environment. In the three large organizations, as well as in GreenZone to some extent and in some of the firms in the Green Guide, I was directed to managers with an educational background in engineering. At Husqvarna, R&D housed much of the environmental work and the staff was predominantly mechanical engineers. No one got hired unless he had a tuned up moped at the age of twelve, a design manager claimed. One exception was the firm’s environmental coordinator, however, who was a certified forester. At Duni, the environmental manager was a chemical engineer and her staff was predominantly environmental engineers. At FMV, the environmental manager had an engineering background, which was also the case for the other respondents (Berit and Johan, and also the two project managers). An exception from the engineering emphasis was GreenZone. Per had a background in business studies and Ola, although a car mechanic to start with, had advanced as a trainer at Ford. Also, they both emphasized the mental change processes in GreenZone and worked more with pedagogical than technical issues. The technical side was more or less delegated to Anders, the architect. Per also claimed that the project, from his view, was pedagogical.

In sum, the presence of managers with an engineering background was apparent in the three large organizations whereas there was a mixed picture in the other two. Another aspect is that although greening was the responsibility of top management, it was to a large extent dealt with by specific sections in the organization. Husqvarna had the coordinator and the network. Duni had Environmental Affairs. FMV had the environmental group at CC Method. In the Green Guide, the specific sections were located outside the small firms. The project managers, Erik and Staffan, and their accompanying students often conducted the environmental work in practice for the firms. In this sense, greening was delegated to an outsider. In the Green Guide case, the project managers could be perceived as shouldering the role of the firms’ environmental managers.

A dilemma with this, as in the discussion on integrating management systems, is that greening is approached as not really integrated into the organization’s core processes. Somebody else outside the firm does the main job, leaving an audit and maybe some seeds for the environmental work to grow once they leave the firm. As some of the managers stated, they did not really have the energy for a continuation. Anders at Bebos was not so keen on environmental
work. He would rather like the initial environmental audit to settle down before
taking another step. Lars-Gunnar at Samhall stated that it was not so easy for a
regular person. Malå Järn & Färg, through the managing director, considered
themselves too busy to do the work themselves. Monika at Baseco said it was
difficult to allocate resources, especially man-hours, for environmental issues.
Jenny and Fredrik at Grundnäs argued that they aimed at keeping up to date in
their environmental work, nothing more, maybe in the future. MGV, Sorsele Trä
and Öjeryds, however, did not mention a lack of interest in going further or of
being left alone, although the dependency on outsiders was evident in these cases
too. The discussion at the final meeting at Sandsjögården also resulted in a
demand for someone else, preferably the project managers, to take charge of a
continuation of the greening processes embarked upon in the Green Guide.

The small firm managers shifted in their environmental interest, although
many were persuaded by the project managers to participate in the project. When
asking about the CEO or Director General’s environmental interest in the three
large organizations, every respondent claimed that he or she was very devoted to
the issues. When, on the other hand, asking the environmental staff whether or
not they were involved as much as they thought they should be, the answers were
negative, sometimes frustrating. For instance, at Duni, cross-departmental
organizing was encouraged in the new development process, but it did not
include the Environmental Affairs department. At Husqvarna, the issues were
supposed to be networked, but in practice they were matters for the R&D staff.
At FMV, Johan had to kick and push the project in front of him. For Bengt and
his group, it seemed, the strategy was to infiltrate the processes. Again, though,
the exception is GreenZone. Top management, as in Per, Ola and Anders,
decided that environmental concern was perhaps the most important issue. As
the organization was small, these actors also constituted a fair share of those
implementing the vision in practice. However, setting the issues aside for
business as usual concerns this project too if focus is laid on the time once the
project was up and running. Even though the salesmen strongly promoted the
FFV Ford Focus before the regular Ford Focus, environmental issues were not
as apparent once the site had settled.

From one perspective, having a particular staff for the organization’s
environmental work could be a strength. This is due to the fact that greening
demands specialists and time, which was evident when following the legislative
developments in the area. Erik and Staffan in the Green Guide were the experts
assisting the small firms on this matter. Specialists, such as the R&D manager at
Husqvarna who followed the US legislative processes, played a key part in the
firm. Environmental Affairs at Duni were consulted on occasions, especially
concerning environmental legislation. An R&D engineer even emphasized this as
an area where the organization had to have specialized personnel. The same goes
for the environmental group at FMV. Despite this, a point is that through this
specialization, greening was to some extent made peripheral in the organizations.
The responses from the environmental staff indicated such a reality. They were
not involved, even if they thought they should be. Instead, many saw themselves as environmental lobbyists within their own organization, trying to find ways in despite the fact that they already were inside the organization. The organizational structures confirmed such a reality. The table below summarizes some impressions from the discussion on actors:

<table>
<thead>
<tr>
<th>Case</th>
<th>Actors</th>
<th>Educational background</th>
</tr>
</thead>
<tbody>
<tr>
<td>GreenZone</td>
<td>All and none</td>
<td>Mixed</td>
</tr>
<tr>
<td>Green Guide</td>
<td>Project managers</td>
<td>Mixed</td>
</tr>
<tr>
<td>Husqvarna</td>
<td>Yes</td>
<td>Engineering</td>
</tr>
<tr>
<td>Duni</td>
<td>Yes</td>
<td>Engineering</td>
</tr>
<tr>
<td>FMV</td>
<td>Yes</td>
<td>Engineering</td>
</tr>
</tbody>
</table>

Communication

One part of the organizations’ greening in practice centered on communication. The two premier aspects, administrative systems and tools as well as actors, were naturally involved in this, but certain activities, more than others, aimed at communicating the environmental work. One example is the development of product declarations or specifications. They were grounded in administrative tools, developed and managed by certain actors, but were specifically designed to communicate the environmental content of the products to actors inside and outside the organizations.

Baseco, in the Green Guide, put together product specifications. They gathered those in a product binder, which they distributed to their customers. Also, albeit not labeled declarations or specifications, the audits conducted at each Green Guide firm were in some instances used with a similar purpose as the declarations. The audits should, however, rather be compared to an environmental report (see further on). Husqvarna developed product declarations, which they deliberately had made a bit lighter in order for their customers to grasp their contents. Duni had its specifications of environmental and product safety, which were made accessible to all employees through the firm’s intranet. GreenZone and FMV did not have systematized ways of producing such declarations. Their different lines of businesses might explain this.

All organizations, however, developed and/or supplied products that were ecologically profiled. Some were even eco-labeled. GreenZone, as the entire site,
was a green product if we believe Per who argued that it could be sold on an international market. More specifically, at the site they supplied ethanol cars, marketed as the green alternative; Statoil had increased the share of eco-labeled products on its shelves, installed an eco-adapted carwash and supplied ethanol (E85 and E10); and, McDonald's served eco-labeled milk at the restaurant. In the Green Guide, MGV's product supply was based on reused tires; Samhall and its environmental coffin; Malá Järn & Färg tried to supply eco-labeled alternatives; Baseco bought eco-labeled timber; Grundnäs Kött had their closeness to the raw material as an eco-argument in their product quality; Öjeryds pointed at their minimal use of mineral fertilizers; and Sorsele Trä argued that their products were more ecological than the eco-labeled products (Bebos did not account for any particular example). Husqvarna had several products in their supply that were marked with an environmental profile. There were the Solar and Auto Mower, the chainsaws with catalysts, and the E-tech products. Duni eco-labeled some of their products with the Nordic Swan. At FMV, their types of products (corvettes, submarines) were not eco-labeled, but some were still environmentally profiled, such as Visby's body and the new water jet aggregate.

All these examples indicate that environmental issues were addressed in the relations with stakeholders on the market, especially customers. Alongside traditional characteristics such as performance and price, the environment, albeit to a small extent, was a part of the market communication. How much of it that was driven by green ambitions will be elaborated further on, but in the cases there were signs of contradictory voices of what environmental profiling was and should be about. At Duni, the environmental manager stated that they could not communicate that their products in some instances were better than resusables. The marketing manager for the at-home segment thought they should. At FMV, the Visby manager had a different idea of what should appear in the environmental report compared to those authoring it. The body was mentioned, but the System Safety work should have been, the manager argued.

Eco-profiling products is one way of communicating with the market. Another activity in this area is official reports on the organization's environmental work. GreenZone is difficult in this sense as the written traces I came across during the case study, albeit very few, touched on environmental issues. These issues were after all the sticking points in the project. In the Green Guide, the majority of firms going beyond the information meetings ended up with a written environmental audit and an action plan. Some firms used it as an environmental report in contacts with stakeholders. No one, at the time, had an environmental report as compared with the large firms. But taking into account the difference in size between firms in the Green Guide and Husqvarna, for instance, the audits, summarized in the pamphlets, might be assigned a similar status as Husqvarna's corporate environmental report (CER). The pamphlet might be a suiting level for the small firm. The impressions the small firm managers had of the large firms' responses to the pamphlets also seemed to be
positive, although many small firms still felt a pressure to implement an established EMS.

Husqvarna, Duni and FMV all developed environmental reports, with a slight exception in the case of Husqvarna as it was Electrolux that did the printing. Husqvarna’s, and to some extent Duni’s, reports mainly focused on formulating the organizations’ ambition in their environmental work. Policies, visions, targets, strategies and positive examples made up the main report. This meant that there were predominantly mission statements rather than information on the organization’s environmental impact (what has to be dealt with). The best exceptions were FMV’s reports, parts of Duni’s reports (1995 and 1998, for instance) and to some extents the audits conducted in the Green Guide. They were brief, but frank about the problems identified and the organizations’ did contribute to environmental destruction (see further on under driving forces and stakeholders, and identity).

Another communicative, as well as educational, activity was environmental training. GreenZone had Esam, my old employer, design an exclusive training, albeit based on TNS’ package, for the persons working at the site. 16 hours of “sustainable thinking”, touching on global as well as local issues, related to society as such and to the automobile sector. The personnel would be environmental ambassadors, equipped with an environmental driving license. In the Green Guide, several firms took the opportunity to attend the information meetings as well as the final meeting, which all contained lectures on environmental issues. Many also engaged Erik or Staffan as lecturers at their respective firm. Some also attended Erik’s extra trainings on the new Environmental Act.

At Husqvarna, about a hundred managers had been trained through Electrolux’ Eco-Know-How, which was partly based on TNS’ package. Duni and FMV had trained all their employees. FMV had also arranged additional courses for managers in key positions, such as project managers, materiel system managers and procurers. All three large organizations had also targeted their procurers with seminars. They were singled out as important actors, as what they did, specifically what they bought, often had a long-term effect on the organization’s environmental impact. To combat this, Duni had also developed a handbook, helping employees in asking the right questions. It also saved time, not having to ask Environmental Affairs. FMV also targeted their procurers with a computerized procurement system, through Portalen, including, for instance, checklists on forbidden substances.

How the environmental trainings have influenced the organizations’ approaches to greening are difficult to assess. Some conclusions can be derived, however. A lot of actors have dedicated time to attend these trainings. The sessions might not have inspired the participants in going green, but the mere attention assigned to them vouches for the issues at least being pondered. Another aspect is also that the training sessions, except some of them in the Green Guide that were of a more general character (the informational meetings
and the final meeting), were tailored to communicate with the specific organization. This meant that the information was designed to fit the particular line of business/industry. As negative change-or-die scenarios tend to be met with skepticism by those facing extinction in such scenarios, such contents were usually not regarded as efficient. Respondents at FMV and MGV, for instance, explicitly claimed this. There had to be positive examples and an understanding of the market mechanisms, they argued. The focus instead leaned towards opportunities, on how the environment could be transformed into new products and markets. The emphasis on new opportunities rather than the threats was common for all cases. In this context, skipping forward in this analysis, greening became a win-win situation for the specific organization. This is quite natural, though. Educating employees merely on why the firm should not exist is probably poor management. There have to be ways out for the firm.

So far, organizations seem to address these issues through win-win truisms. When pondering environmental trainings further, these win-wins are most likely dependent on who designs the training as well as why it is done. In other words, just as competition sometimes is dressed in the shape of predators and preys, i.e. some firms are winners and some are losers, firms identify different win-win truisms. Some win-wins might be another firm’s misery. MGV could be an example. Their win-win, at least one of them, lay in reusing tires and thereby reducing the need for virgin resources as well as the cost for raw material. In the long run this could put a strain on manufacturers of tires not considering reuse (but perhaps they consider other win-wins). It could also mean that industries producing vehicles that could be wheeled by recycled tires, such as the automobile industry, could be rewarded with greater legitimacy as their cars now have the chance of becoming a bit greener. It could also be a reason for why such an industry should hang on to an infrastructure that is highly unsustainable for a little while longer. In the end, such a development might be a threat for those investing in shifting people’s transportation habits from cars and trucks to bikes and trains. Similar examples could go on and on, displaying close links as well as more distanced connections. A point is, though, that win-wins depend on the perspective adopted.

Greening in practice, divided into administrative systems and tools, actors, and communicating, are but one part of the organizations’ approaches to greening. Another part is why these activities were performed. What and who motivated them?

**Driving forces and stakeholders**

The *why* question is about imperatives and actors influencing the greening processes in the cases. Four main categories have been identified in the pursuit for a better understanding. This does not mean, however, that they were *the* green drivers. It means that they were apparent in each case, but some worked both ways. They encouraged greening, but also provided reasons not to pursue
greening. The first category is labeled *the market and the profits*. It points at the particular pressure on, and interest in, embracing the environment into the business rhetoric. Basically, though, the market cannot be a stakeholder per se as it would reify or objectify it, but the way it was taken for granted (see further on under worldview), it almost appeared as such. The second category, *customers and owners*, points at the particular interdependencies in the relations between the organizations’ environmental work and their customers and owners. The third category, *legislation*, is probably the most obvious imperative and stakeholder cutting across the cases. The final category, *environmental impact*, is not as obvious, but still a key part of pursuing a greening process.

**The market and the profits**

One aspect overshadowing the others, working both as a driving force and as an obstacle for greening, was many organizations’ focus on market orientation. They restructured their internal processes toward increased market and process orientation, aiming to close gaps between them and the market. In general, in those instances the environment enforced this process of bettering the organizations’ relations, i.e. their competitiveness, it was integrated in the strategies. In other instances it was abandoned or singled out as an external aspect to be dealt with by others.

In GreenZone, even though the project to some extent questioned mainstream ways of doing business, they continuously emphasized the market forces. There were particular market opportunities for those taking the lead when going for green. The car dealer’s market share had increased with about 50 percent and focus was on selling cars like never before. Packaging the site for the market was a key factor in GreenZone gaining momentum, Per argued. Greening the business and playing the market forces fit together. In the Green Guide, firms such as MGV were expanding. They stressed the necessity of integrating greening into the frame of competitiveness. Money could actually be made out of this, as long as we relied on and understood the market mechanisms, Peder claimed. His trust in market orientation seemed to have increased when finding this merger possible. Albeit not as enthusiastic, Samhall had similar experiences with the increase in sales of their environmental coffin. Monika at Baseco argued that they considered environmental aspects in order to improve their market relations. Also, Öjeryds were pleased about Norrmejerier making environmental demands on their suppliers, linking the environmental work to their business reality.

The presence of market forces hindering such mergers was also evident. Anders at Bebos asked who would pay for a cleaner production (to clean cost a million, but nobody is ready to pay); Roger at Sorsele Trä’s view on the FSC label as excluding small eco-adapted sawmills; Fredrik and Jenny at Grundnäs Kött’s view on the customers’ narrow focus on price, resulting in a neglect of eco-arguments; and, the director at Malå Järn & Färg’s view on the customers’
demand for eco-labeled products. They could not tell the customers what they should buy.

Husqvarna's market orientation focused on core competencies, which meant forest and garden, and not motorcycles, rifles or sewing machines. There was also a new development model, the IPD, where increased process control was stressed. There should be no room for surprises. They would be front-loaded. A design manager, tired of the increasing administrative burden, claimed that: "The organization has not grown out of routines". A project manager, waiving off Electrolux' pressure on Husqvarna to perform financially, stated that "towards the Group you feel the demands for profitability, but towards Husqvarna you feel for the quality of the product". Both quotes indicate that a growing market orientation was evident at Husqvarna. The firm's greening process had to play along with this pressure, meaning that environmental activities, if carried out, had to make business sense. Remember, one of the managers claimed that "what we are fighting with today is not environmental issues, because Stihl will solve them too". Husqvarna was, however, greening their operations, but as framed in one of the reports where they asked why they were greening, the answer was because it was good business.

At Duni, a market orientation was taking place. They were about to be introduced on the stock exchange; they had a new project management model (time to market); they focused on core competencies (the laid table) along with the branding process; they had acquired De Ster; and, they had cut and reallocated some of their staff. For Duni, if greening could play along with these adaptation processes, it was included. The environmental scale studies, for instance, had the firm as just as good or even better then alternative to products intended for long-time use. In other instances, greening was excluded, as in the talks about the uphill slope when marketing green products. One manager explained that developing and launching an environmentally sound product meant spending a lot of money on marketing: "This makes the product more expensive compared to other products and we will have an uphill slope to begin with".

At FMV, the organization was supposed to imitate a modern firm in times of scarce resources. The staff was cut in order to make the working organization more effective. The development processes were measured through earned value. The internal competencies were up for short-term lease through the CCs, resembling the consultant's situation. The space for the environment was limited in this process. The two projects, Visby and Viking, were driven by technology, time and finance, which seemed to have narrowed the space for greening. In Viking there was the matter of the extra tank, which might result in a longer ship: "The length of the submarine is intimately related to the costs of constructing it". The project manager for Visby also emphasized that they had to comply with the Armed Forces tactical, technical and financial objectives: "That is my bible". Both the project managers and the environmental managers also stressed the need to get environmental aspects integrated in this, the first phase, indicating
that at the time there was space for improvements in this area, that is, in the bible.

Still, the market is a diffuse and impersonal driving force and stakeholder. Fundamentally, it is made up of actors and these actors’ actions. However, the point with the market and the profits category is that the organizations were market orienting their operations. More specifically, though, there were driving forces and stakeholders that played a particular part in both the market orientation and the greening processes. Sometimes, as indicated, these two processes were also perceived as fairly similar, walking hand in hand. That is, what is good for business is also good for the environment. As an example, reducing the amount of raw material in a product while keeping the same quality, as at Duni, results in less demand in and cost for raw material. Two important stakeholders in such processes, however, were customers and owners (as in owner-managers as well as in “external” owners).

Customers and owners

GreenZone, as a business development project starting from scratch regarding both facilities to operate in and people employed to work at the site, did not really have any customers to start with. As in the other organizations, customers did not directly drive GreenZone. Once the project was up and running, however, both the customers visiting the site and those multinationals renting the facilities from Per, became key stakeholders. From another angle, though, Per, in his enrollment process, could be seen as a customer. He applied a customer pressure on the municipality to change their way of handling fees for connecting to the municipal water system. He was a customer when negotiating with the constructors bidding to build the facilities. He was a customer when lobbying the Ford Motor Company to work with the FFVs. The customer as a driving force was, however, more explicitly emphasized in the other cases.

According to the project applications, the entire Green Guide project was a reaction to the customer pressure from larger and more urban firms working intimately with the small firms. This pressure meant considering environmental aspects from the large firms’ point of view, as well as finding ways to compensate the small firms’ smallness. The pressure was evident from, for instance: Bebos’ large construction firms; Baseco’s building contractors; the small sawmills around Sorsele Trä that were closing down or standing still as customers demanded (FSC labeled) products supplied by the large sawmills; there were less farmers in Öjeryds’ size due to growing large-scale farmers, and Norrmmejerier (large firm) had started making environmental demands; and, some municipalities had begun making environmental demands on products such as those supplied by Grundnäs Kött. Of those eight firms encountered in the project, MGV, Samhall and Malå Järn & Färg did not express a concern for large customers’ environmental demands. This might be due to their type of customers, which predominantly were households and other small firms. Environmental concerns appeared in
these contacts, but they did not seem to have a similar impact as the large customers had on the other firms.

At the majority of the small firms, larger firms had started to make inquiries, asking about policies, audits and other documents. This amounted in a pressure to at least do something. Erik and Staffan helped the firms conduct simplified versions of an EMS, later used in stakeholder contacts. Large firms, in their role as customers, making environmental demands on their subcontractors are supply chain effects. They often have, as in the three large organizations in this study, enough resources to appoint managers and staffs entirely devoted to implement an EMS and to demand environmental information throughout the supply chain. This is not the reality for the small firm. For them, their small-scale operations seldom lead to a demand for an oversized administrative system. ISO 14001; for instance, was not designed for the small and micro sized firm.

Demanding an EMS by small subcontractors also has another aspect. It leads to enhanced control in the customer-supplier relationships, in favor of the customer making the demand. In essence, this means that the small firms have to implement some kind of EMS if they are interested in continuing to do business in the long run, usually without getting any extra money for it. FMV, for instance, as a public organization, could not make this demand, but they wanted to. This means that the receiver, to some extent, is forced to approach these issues, but partly on the large customer's terms. This makes sure that those small subcontractors dealing with the large firms develop some kind of environmental work, but it is a weak guarantee for this work being linked to the small firm actors' perception of greening.

At Husqvarna, the EMS work, for instance, was driven by a need for routines and structures. They also thought it would reduce the firm's costs and risks, as well as give them a better chance to respond to customer requirements, especially to the requirements from their professional customers. There were simultaneously arguments for the customer not constituting a driving force in the environmental work. The market was not ready to pay one extra crown for environmental improvements, it was stated. There is a paradox here. When Husqvarna is greening their operations, it is for the sake of the customer's health, but the customer does not pay for it. The question is why they are doing it anyway. One answer is that they are doing it for the sake of doing good, of taking that decision, along with the extra costs, on behalf of the customer. Another answer lies in the next imperative and stakeholder, legislation.

The same quandary, however, was apparent at Duni. The customer, they argued, had started worrying about other things than environmental aftermaths of using Duni's products. Focus was more on mad-cows than on non-bleached coffee filters. Still, the large retailers demanded eco-labels and: "A growing number of large customers are regularly evaluating Duni's environmental performance in terms of both products and processes" (Duni, 1997, p 3). The customer was also a major driving force in FMV's environmental work. The Armed Forces, on behalf of the government, even gave a direct order to
implement ISO 14001. In this case, though, the organization’s main customer (95 percent of the order intake) was also its owner, bringing the discussion to the second part of this header.

Per Carstedt, the founder and owner of GreenZone, was the main driving force in the project. Then, of course, Per was in turn driven by a concern for the survival of the industry and the planet. As the owner, however, he provided the incitements for those involved. He inspired them. Anders sensed that Per’s interest was genuine, resulting in a carte blanche to the architect. Ola got hooked to Per’s vision. The municipal representative stated that Per was very convincing. Per moved actors on the path towards realizing GreenZone, which also was evident from the reactions to those seminars with Per that I attended.

In the Green Guide, the owner-managers in the small firms were also key actors in the environmental work. They pushed their greening processes forward as they decided to participate in the project, but many did not constitute a direct driving force when they did not find time and other resources to engage in the process. There are, though, the examples of Peder at MGV, Roger at Sorsele Trä, Carina and Kjell Öjeryd, showing a particular concern for approaching greening. It might even be claimed that environmental issues were integrated to a larger extent in such firms, as those owner-managers, constituting a main part of their firms, were positive about working with the issues.

As an Electrolux subsidiary, Husqvarna worked with programs and concepts developed by Electrolux. There were the IPD, Eco-Know-How, Green Range, the Group’s environmental vision and order-to-payment (not discussed in the case). Respondents at Husqvarna emphasized that they had reflected upon the IPD and adjusted it to their working organization: “The model was not imputed on us”. At the time, neither the respondents nor I really reflected upon the Electrolux programs and concepts used in the environmental work. What could be concluded, however, is that the Electrolux emphasis on merging economic aspects with environmental consideration was evident at Husqvarna as well. A product manager distinguished the two firms from each other regarding Electrolux’ focus on profit as opposed to Husqvarna’s focus on quality. There was no such distinction in the environmental area. This might be because they shared the basic view on how to approach them.

Duni also had a pressure from the two owners, but although it resembled Electrolux’ financial pressure on Husqvarna, it was a different pressure since the two owners were investment firms (families). They had no own manufacturing in a related industry. It still meant that Duni had to consider environmental aspects in the shade of, for instance, a stock exchange introduction, major internal reorganizations toward increased market orientation, and acquisitions and sales in line with a focus on the firm’s core competencies. Through Electrolux, Husqvarna received some guidance in the environmental work. In the case of Duni, the owners did not push the environmental work. They were, however, key stakeholders, setting the frame in which the environment did not become a part of the organization’s culture.
At FMV, the “owner” was basically the government, but operatively this role was shouldered by the Armed Forces. They made demands in the environmental area. The most visible one from my encounters was the demand to implement ISO 14001. It was a clear signal. On the other hand, there were several indications of the Armed Forces not making enough environmental demands in the first phase, that is, in the first inquiry. The environmental manager argued that “we need to get them integrated in the right phase”. The environmental engineer talked about creating a need in the next phase. The first phase was a key since the project managers had to work according to the Armed Forces’ objectives. One part of this, which also points at some ambiguity on FMV’s behalf, was the observation by the environmental manager that the headquarters did not posses any specific competencies in the environmental area. Maybe this was an explanation of the lack of demands in the first phase, but it was also perceived as positive since it gave FMV some autonomy in what kind of demands they wanted to make in the environmental work.

In sum, the owners had an important part in deciding the level of environmental commitment in the organizations. Their impact worked both ways, though, just as with the customers. There is always, it seems, another side of the matter. Another imperative singled out in all cases was environmental legislation.

**Legislation**

Perhaps the strongest driving force cutting across the cases was environmental legislation. GreenZone is, again, somewhat of an exception, but legislation was certainly present in this case too. Per talked about future legislation becoming tougher for the industry to comply with. He mentioned the area of recycling cars and also the current and future use of fossil fuels. Per had chosen to, through GreenZone, voluntarily meet this pressure ahead of its realization, a time when his business, along with the industry as such, might be forced to adapt.

In the Green Guide, Anders at Bebos, discussing the new Swedish Environmental Act, argued that with the right prosecutor, a lot of firms would have difficulties. Erik also arranged two specific trainings on the new act. The Öjeryds, working with environmental issues more as preventive, expected larger demands from legislators in the future. Beside these, there were few direct mentions of environmental legislation. This imperative was rather felt through the large organizations’ environmental efforts. That is, their compliance was dependent on the subcontractors’ products.

At Husqvarna, the design manager covering the legislative processes at CARB and EPA in California gave the impression that these were crucial actors for the firm. We have to know and we cannot take any chances, he claimed. It also cost time and money to chase these authorities. Legislation was also one of the three imperatives the Group made sure was considered when initiating new projects in the subsidiaries. Parallel to this there were the examples of Husqvarna

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products being several years ahead of legislation. When mentioning those examples, it was as if the firm’s focus on conforming to legislation was played down. They were pro-active, but true pro-activity would, as in GreenZone, mean that contemporary legislation was not a major issue. It would perhaps not be an issue at all. The encounters with Husqvarna left a concern for environmental legislation as a main impression.

At Duni, legislation concerning food contact, packaging and carcinogenic substances occupied the time of Environmental Affairs: “You have to be somewhat of an expert on this. Someone has to keep it all together, read it, interpret it, and it is not so easy”. Also, as indicated by the staff at Environmental Affairs, one reason they should be more involved in the development projects was to make sure that the projects did not trespass any laws. Duni was also a part owner in two “packaging” firms (Platskretsen AB and AB Svensk Kartongåtervinning), which partly was a consequence of the law on the producer’s responsibility for packaging. The REPA was also mentioned. Basically, though, with the environment left outside the organization’s culture, environmental issues were translated through legislation to a large extent. Legislation was an important imperative for the firm.

At FMV, there was a special relation to environmental legislation in regard to, for instance, the use of chemical substances. The organization was given a lot of exceptions. They also had no insurances and they had troubles conforming to the new Environmental Act. Legislation also constituted the environmental frame of reference for the project managers. The Visby manager argued that “a basic pillar in the contracts with the suppliers is still that laws and regulations have to be conformed with. We cannot buy anything else.” The suppliers also mirrored the law and that was what FMV required. In Viking they had a policy saying that the national legislation in Denmark, Norway and Sweden with the toughest requirements would be the one the project would comply with. Legislation as a driving force in FMV’s environmental work, however, falls back on the environmental manager’s statement: “You can require that they have a systematized way of working with guaranteeing their quality, but you cannot do the same thing from an environmental point of view.” In a way, their hands were tied. Legislation was the basic demand and level in the greening process.

In the ISO 14001, present in all cases, besides a demand on firms to make continuous improvements, those who implement it also commit to obey existing environmental legislation. This might seem odd, striving towards a certificate claiming that the organization will conform to existing legislation and improve their operations from year to year. Especially when the organization pays for the certificate. Legislation should, I would like to believe, still be complied with whether there is an explicit management system for it or not. It should rather, as an environmental engineer at Duni put it, be about “beyond legislation, we shall…” As was indicated by FMV and their troubles trying to conform to the new act, the system might still have played a part in increasing the attention to
these issues. Aiming to better comply to existing legislation was in such a case a
driving force behind ISO 14001, as well as in the environmental work in general.

Legislation is a framework to act within, at least for the majority. Some
firms bend the rules, but the laws are supposed to be requirements for all. As
showed, the large organizations devote a lot of attention to legislative matters.
They make sure they are involved in the processes leading up to new legislation,
since it may become part of the future frame in which the organization operates.
Take, however, GreenZone as an example. For this project, existing
environmental legislation was not important in deciding which solutions to apply.
They knew that they went beyond existing laws and would move towards future
laws. They did not focus on complying with existing legislation. For those firms
lying closer to trespassing environmental legislation, the focus was more intimate.
There are, of course, explanations to this, but it indicates the nature of the firm’s
activities. At least if we believe that environmental legislation is on a decent track
of hindering further environmental destruction. It seemed that the closer the
organization was to trespassing environmental legislation, the more concerned it
was with influencing, and even infiltrating, the legislative processes.

Earlier in this chapter, I used the word monitoring in order to highlight the
three large organizations’ focus on legislation. Monitoring, however, implies
passivity, which partly was the case, but the organizations, although information
is scarce here for obvious reasons, were also actively influencing the legislative
processes. Husqvarna worked with EPA, CARB and ISO; Duni through its
participation in the two firms working with reuse and recycling; and FMV with its
ambitions to influence the law on public procurement. Monitoring should then
be accompanied by a more active concept, such as influencing. One example of
influencing instead of (not together with) monitoring was GreenZone’s impact
on the municipality’s system on connection fees to the municipal water system. It
changed the law and opened the door for similar environmental projects. Per’s, as
well as the municipal representative’s, argument was that the fee should be linked
to how much the water system would be used. The fee should be linked to the
environmental impact.

Environmental impact

The environment is a stakeholder and to reduce environmental impact is a
driving force. The cases, however, were more diverse in this category compared
to the others. Per Carstedt argued that the transportation industry had to change,
to better align with the conditions set by Mother Nature. There was no choice
really. Per did not only base his arguments on population booms and increasing
demands on artifacts, but specifically on the sector’s contribution to the
greenhouse effect. He based his arguments on what was an eye-opener for him,
TNS and its founder Karl-Henrik Robert. The systemconditions became a
compass for GreenZone and reducing environmental impact became a driving
force behind the vision of GreenZone. But being pro-active, and by marketing
the project as a road towards sustainability (as in the logo), it also meant that environmental impact was, in a sense, disconnected from the firms in GreenZone. Through linking the project to the way out of environmental destruction, the project was freed from those destructive actors “lagging behind”, that is, basically the rest of the industry. Despite GreenZone’s many environmental benefits, however, the car dealer still sold cars powered by fossil fuels; Statoil (as stated, it is in the name) sold diesel and gasoline; and McDonald’s sold globalized fast food.

For firms in the Green Guide, their environmental impact was not a major driving force in the environmental work. Other stakeholders, predominantly large customers, played that part. If the Green Guide firms contributed to environmental destruction, they played a minor role. Their environmental work was mainly preventive, it was argued. The Öjeryds used mineral fertilizers minimally; Anders at Bebos mentioned that they had some troubles with some chemical substances used in the surface treatment of the wood; and, Lars-Gunnar mentioned the surface treatment of the coffins and transports as the aspects Samhall had problems with. Baseco used oil in their processes and treated the wood with lye, but it was very diluted, Monika emphasized. They also had to carry everything by truck, which was an environmental downside. Fredrik and Jenny at Grundnäs Kött also singled out transports as their main impact, while Roger at Sorsele Trä argued that their sawmill was already the most environmentally adapted one out-there. MGV and Malå Järn & Färg did not really address linkages between environmental destruction and their firms.

For Husqvarna, environmental impact did not seem to be a major driving force. It was not, for instance, one of the three imperatives driving the Electrolux Group’s environmental work (legislation, resource- and cost-effectiveness, and market forces and customer demand). The respondents and the reports did not present Husqvarna as an environmentally destructive firm. What emerged in the interviews was instead the firm’s influence on the environment through, for instance, the areas considered in the green index: noise, emissions, energy consumption and material. Still, the index was more in focus than the firm’s impact. It was up to the reader of the reports, for instance, to link the firm to environmental destruction.

At Duni, the case was similar to some extent. There were statements aiming to de-emphasize the firm as environmentally destructive. The scale studies, the arithmetical example and the ski-race example came with a similar message: It looks worse than it really is. Still, there were issues of environmental influence to consider for the firm. In the scale studies, Duni’s impact consisted of using energy during production, pollution to air during manufacturing, and pollution to water from paper and pulp factories when producing paper and cardboard. Their use of oil was also mentioned as well as the symbolic aspect of their products after use becoming “visible” waste. There was also the index, housing raw material consumption, energy use, production, emissions to air and water, waste, and transports. These aspects were mentioned in the encounters with Duni, but
they were not coupled to being environmentally destructive. Disposable products were no more harmful to the environment than reusable dishes, it was argued. Duni’s disposable products were thereby not matched against the environment, but against reusable long-time use products. The reusables, and not the environment, were the benchmark. There were mentions in the environmental reports, but a lot of them were hard facts on Duni’s environmental impact. These facts were up to the reader to interpret and not problematized in regard to the firm as a polluter.

Along the same lines as in the GreenZone case, both interviewees and official reports had FMV as an environmentally destructive actor. The environmental manager and the environmental reports singled out three areas of impact: indirect effects, direct effects and internal operations. The environmental impact was also framed in terms of the organization’s energy consumption, providing a simple overview of proportions in energy use. One example brought up in one of the reports was the use of ammunition within the Armed Forces. They released about 180 tons of lead into the environment each year. Simply put, one of FMV’s driving forces was the organization’s environmental impact. But listening to the two project managers, this driver had a hard time being translated into the greening of the projects. From one perspective, this means that when the organization translated talk into practice, environmental impact was not an imperative. Still, comparing FMV to the other cases, it is, along with GreenZone, the organization where environmental impact was considered and problematized the most.

All cases have some kind of environmental work. Many even have a thorough environmental work. To different degrees, they are all based on the need to deal with the organizations’ environmental destruction. Per made this a main argument for GreenZone. Reports and interviews at FMV made this clear. 180 tons of lead into the environment each year! It might be less clear in the other cases, which might make this category a bit awkward as it does not cut across the cases in the same manner as the other three. A point is, however, that it is a category and it has to be a category. The latter is of course a fairly normative, maybe even non-constructionist, statement, but the organizations did not embark on a greening path merely because customers, owners, legislators or a profit-hunger demanded it. There were linkages between problems caused by the organizations and their environmental work. This area, environmental impact, is listed as a main area due to this. Leaving it as a secondary force and stakeholder would render the environmental works as completely cosmetic. This was not the case, in any case.

So, these are the four main areas of driving forces and stakeholders. They are not the only ones. There were also signs of other stakeholders, such as internal environmental lobbyists, media, suppliers, competitors and local politicians. There were also signs of other driving forces, such as being perceived as a credible organization and simply for the sake of doing good. This points at the dynamics of the range of drivers and actors involved. With the emphases in
the cases, however, these actors and forces were rather integrated into the four main areas. The suppliers, for instance, were present in the cases of GreenZone, Husqvarna and FMV, but they were not framed as particular actors in the greening process. FMV claimed that the suppliers mirrored legislation, but FMV wanted to go further in demanding greener products from them. This was, however, in the first place a matter of legislation, of influencing the law on public procurement. Competitors were mentioned in GreenZone as the drivers of the legal process against the municipality; Öjeryds and Sorsele Trä in their alliances; Husqvarna's main competitor Stihl would solve the issues too; and Duni which had many and none competitor. Still, the competitors were not assigned a particular role, despite their presence.

The next two sections aim at taking the analysis deeper, towards more intangible and abstract aspects of the organizations' approaches. Matters of identity and worldview take the approaches, one could say, from practice to theory.

**Identities**

The construction of identities centered on the tensions between playing the business rhetoric, being one of a kind and the organizations' destructive aspects. On one hand, there was an emphasis on being perceived as a capable, constructive, reliable, resource-generating, customer oriented and modern firm. On the other hand, there were reflections on the organization as unique as well as environmentally destructive, on being one reason for the necessity of an environmental work. Hovering around these aspects were also tensions between perceiving the organization as agency oriented and as structurally oriented, between holding the organization as an actor and as a node. From one perspective, the battle took place between the identity of a perfect and rational organization, and an imperfect and irrational organization. There was, hence, strivings to conform as well as to resist what seemed to be a larger norm of how especially firms were expected to act in regard to greening. Conforming in a way meant that one size, or in this case one identity, fitted all. In contrast, resistance voiced the concern for situation specificity, contextual dependency and individual circumstances. The discussion on identities across the cases aims at taking heed of these tensions. It is divided into two aspects, below labeled *a modern firm* and *a destructive organization*.

**A modern firm**

Despite adopting a critical stance towards the transportation sector's way of dealing with environmental issues in the beginning, GreenZone never really questioned the assumptions on business organizations as generators of economic growth and shareholder value. Even though they criticized many traditional businesses through the project, the laws of the market had to be played along
with. They would challenge an entire industry, they argued, but they held the basic drivers of this industry as given. A part of GreenZone's identity construction was therefore to be perceived as a "regular" business, as one venturing for new markets and profit frontiers. Albeit the main theme of the project, the environment was embraced by these aspects. As such, GreenZone conformed to an institutional pressure on how businesses are expected to act. They were different and even radical to some degree, but they were still a traditional business organization, selling cars, gasoline and hamburgers.

MGV in the Green Guide did not want to be linked to the idealistic environmental movement. There had to be integration and understanding of the market mechanisms if greening would be embarked upon. When Feder realized that this was a possible merger, MGV took on a green identity, implementing ISO 14001 in record time. In other words, it was okay to be identified as an environmentally considerate firm as long as it was subordinated to being a for-profit organization. For the other firms in the project, there were similar situations, but being a modern firm was also a struggle for these actors. They were small firms and larger ones seemed to decide the rules of the game. In the encounters, there were efforts to emphasize this smallness as part of their identities. Business life in the region was difficult. They were the Davids doing what they could, playing according to the market forces. But they were up against the Goliaths. Roger at Sorsele Trä and the unjust conditions in the FSC discussion is probably the best example, although Öjeryds' struggle against large-scale farming through the Sorsele Alliance is also illustrative. Those firms being influenced by their large customers are basically all examples of the struggle. The introduction to the case, describing the region from my perspective, is also an example. One part of their identity constructions was, hence, their emphasis on their smallness as business actors. Structures beyond the firm's control mounted for those thinking about greening. In the process, responsibility shifted to the outside of the firm, to the project managers, the large customers and legislators, to mention some. They strived to be modern firms, but conditions set by others made it difficult.

Respondents and reports representing Husqvarna described the firm as modern and successful in market orientation, technological development and profit generation. There were several good examples of the proactive character of the firm. One was the example on the catalyst in the story of 40 being bigger than 70. Husqvarna was too early with their innovation, too pro-active. The market was not ready. Husqvarna was also sensitive to the customer, not only in terms of ergonomic issues such as weight and vibration, but also regarding emissions from the chainsaws. The health of the user was important. As quoted by the environmental coordinator, the identity they seemed to be constructing was one where the firm was seen as "more innovative, flexible, sensitive to customers and less ostentatious". There were, however, several traits that disturbed this identity. As will be noted further on, there were no mentions of Husqvarna as a destructive actor. Also, if the firm was as successful as they made it appear to be,
it becomes difficult to comprehend the intense focus on legislation. These traits point at a mixed view of the firm. On one hand, there was an agency oriented view of the firm as capable of changing products and legislations. On the other hand, there was a structurally oriented view of the firm as incapable of influencing market demand. This means that the traits assigned to Stihl by the investigation quoted by the environmental manager could also characterize Husqvarna to some extent. That is, the firm also had hints of being “technical, top down, authoritarian and inflicting”.

In the encounters with Duni, the firm was cast as a market orienting firm with a strong technical capability. The environmental pressure they had been facing since the 1950s had made them comfortable in handling environmental issues, it was argued. Concerns for their products’ environmental impact was met with technical investigations of their fairly modest impact. The identity of Duni as an environmentally responsible business was conveyed through several examples. The environmental scale studies made use of a simple metaphor holding the firm as not more destructive as your personal favorite (porcelain) coffee-mug. The oil based arithmetical problem conveyed the same message. The firm used oil in their products and production processes, but we should not start by kicking plastics out. We should instead focus on fossil fuel based transportation and heating of houses. The ski-race example carried a similar message. Duni also asked their stakeholders not to rely on any knee-jerking reactions, but on hard facts. Despite these messages, the firm was framed as environmentally destructive. It was seen as a symbolically important actor concerning environmental issues, pointing at other dimensions in their identity that was not reachable through life-cycle assessments. The matter was rather about consumer mentality. The tensions in Duni’s identity were obvious. They tried to be the modern firm, but found themselves in a battle of legitimacy, partly taking place outside the traditional organizational context.

For FMV, the case is different. They fall under this heading in the spirit of the general trend on privatizing and rationalizing the public sector. In short, they worked with and imitated what seemed to be the business community’s mainstream way of approaching a harsher business context as well as a greening process. The reorganization towards project work and the emphasis on ISO 14001 represents two main trends in the business community. The first is organizing in projects, in which the diffusion of project management models constitutes a sign. The other is the environmental management trend, in which ISO 14001 is spreading like a wildfire. FMV was supposed to be a part of these trends. Others were doing this and FMV had to keep up. Being identified as a modern multi-project, knowledge-intensive and environmentally concerned organization was also one way of enhancing the organization’s legitimacy. FMV’s identity does differ from the others, but not in this sense, at least not in any major way. It rather has more to do with another characteristic, with the organization as environmentally destructive. This side was also a part of the cases’ identities, providing a counterview to the modern firm.
Behind GreenZone lay reflections on how the transportation industry played a part in creating environmentally destructive patterns, particularly the link between the use of fossil fuels and the greenhouse effect. These findings are not hot news for industry or society. They have been around for a while. What is a bit remarkable is that Per, as a within-the-industry actor, made a specific point out of it when envisioning the new site. He held these findings as objective facts, as facts that GreenZone and all other future projects had to be based on. In this sense, GreenZone became an alarmist's signpost. From these reflections came a desire to act: "Who has the most to gain from greening the car industry? Well, those who work in it and depend on it everyday of course!" This conveyance of agency as part of GreenZone's identity was also evident from this quote: "We will influence the industry and the world, people will follow". One part of the project's identity was that they were destructive, but also that this should be linked to opportunities. As mentioned earlier, however, reflecting on the destructive aspects of the transportation industry and doing something about it, such as constructing an entirely new site, meant that the site could be seen as decoupled from being an environmentally destructive actor. They were instead a good example. Destructiveness was, to some extent, left behind. Leaning towards the modern firm emphasis, GreenZone was a positive, proactive and profitable (at least for the car dealer) enterprise.

For the Green Guide firms, trying to act according to the laws of the market was not easy. They were at a disadvantage, both in terms of their size and their location. But many had also through the environmental audits, for instance, pondered how they were influencing the environment in a negative way. There were chemicals, minerals, oil, diesel and more, even though it was still argued that the firms' impact was relatively small. They use it minimally, and it was very diluted, were some of the comments. Two issues stick with the firms' identities in this case. First, the firms were upfront with the destructive sides being identified in the audits. They did not, in my encounters, neglect their destructive sides. Second, they did not perceive their firms as especially destructive. On this issue, there are similar reflections as those made by Duni representatives. Even though the small firms were destructive, they were just minor parts in a larger frame. Do not come chasing us. Look for the larger villains. The identities in this way moved between an agency oriented view of their destructive aspects (as in the audits to some extent) and a structurally oriented view where they were merely one out of many, damping the acuteness around dealing with the matters.

At Husqvama, no respondent or report held the firm as destructive. They were not an organization that in regard to greening should be questioned in any way. In other words, the destructive side of their identity was not as obvious as the constructive and proactive side. This raises the issue of why the environmental work, as in ISO 14001, Eco-Know-How, Green Index, Green
Range, product declarations, and more, was needed in the first place. One example was the concern for the user's health. Inhaling the emissions from the saw was not healthy. This was not emphasized as Husqvarna's responsibility, however, but rather as a problem the firm took as their task to solve anyway. They were concerned for the user and they developed the catalysts in order to reduce emissions. Users did not care for the environment, though, it was argued. The concerns for the users' health might rather have originated from trying to conform to the toughest legislative demands in the world, as stated in an official report.

Husqvarna as a destructive actor was not stressed in the encounters, which leads to the question on whether or not the respondents had reflected on it. Where was, for instance, the link between the use of two-stroke engines and the greenhouse effect? The answer is that they definitely had reflected upon it, but that it was not entirely unproblematic to communicate this as the firm thereby was linked to environmental destruction. It was better to be linked to solving the problems. As stated in the case, there was also a fear of not being perceived as a successful and positive firm in my case account. Such impressions point at the firm creating a green façade. The point here, however, is not that underneath the façade, there were bad things. There might have been, but the firm had several exciting environmental solutions and a thorough environmental work. With such an encompassing environmental profile, being more open in the encounters with stakeholders about their destructive side might even have contributed to their identity positively. This links the analysis to Duni.

"There are situations... where you are open, maybe more than you should be, and it proves to be quite harmless", Duni's environmental manager stated. Even though it was argued that the firm was used to dealing with environmental issues, openness was a strategy pursued in the mid 1990s. The figures in the 1995 and 1998 environmental reports were also signals that environmental destruction was a topic in stakeholder communication. Still, the figures were mainly technical data and not weaved into the broader discussions on how to approach greening. In the greening process, the firm was perceived as a symbolic actor: "So, how people handle Duni's products will constitute a good example of how a resource efficient behavior might look like", the vice president of R&D and Environmental Affairs stated. This complicated Duni's identity construction process as, in the words of the environmental manager: "There is no significant difference between our products and a china cup, but we cannot communicate that". The firm was symbolically a large polluter, even though their investigations and stories indicated another reality. Duni was still identified as environmentally destructive due to the link to the consumer mentality. They had started to combat this through openness and transparency, but were at the same time held back due to the market orientation of the firm. The firm was cast between the environmental group's efforts to make the issues a natural part of the organization and the market orientation where the environment would not be a part of the organization's culture. Being identified as destructive was not easy.
At FMV, the organization was identified as an environmentally destructive actor. They also had an ambition to do something about it. They released 180 tons of lead into the environment each year; consumed office papers; polluted the air when testing fighter aircrafts; and many more examples encountered in the interviews and in the reports. A faith in agency, both in terms of identifying their actions as destructive and in dealing with them, was evident, especially in the discussions on being allowed to discriminate suppliers on environmental grounds. This was also an Achilles heel, it seemed. Even though these reflections were present, however, there was the matter of FMV’s environmental work being concentrated on compliance. The two projects, Visby and Viking, indicated such a view. The mentions of FMV as having difficulties conforming to the new Environmental Act also contributed to this impression. Reflecting on FMV’s situation had therefore also led to an emphasis on other actors and circumstances. They emphasized that greening was also a responsibility of the whole system, not only for FMV, as Visby’s project manager claimed. As a destructive actor, they were also in the hands of others.

As a particular part of many of the cases’ identity construction, there was a faith in market orientation, on being a modern firm. The destructive and irrational aspects were not as evident, even though they were present. In further search for an understanding of the organizations’ approaches, this analysis takes a deeper look at the worldviews encountered across the cases.

**Worldviews**

Judging from the interviews and the official statements, the organizations had the environment as out-there and as embraced by the business rhetoric. This was also what some of them meant by changing the established way of thinking about business activity. The change meant going from the view of the environment as a mere externality to a view in which the environment, albeit still out-there, was considered as another factor deciding the competitive advantage. Greening, they argued, could be profitable ventures. The predominant way to accomplish this was through finding less harmful ways of mastering the environment. It basically meant developing new and more technologically advanced and environmentally sound products and processes. This was also combined with the implementation of new administrative structures where process control and organizational legitimacy were supposed to be enhanced. This added to the technocratic impression of the cases’ worldview.

The discussion on worldviews is structured into three categories. The first points at *the market* as the bottom line in the cases. Greening had to be grounded in a business type of thinking. The second category targets the emphasis on a faith in *technology*, both as a perspective and as a savior in the greening processes. The category frames the technocratic influences on what the organizations should be doing and how the organizations per se are viewed. Third, and as a
consequence of the premier two categories, the environment was cast as out-there. It was not, on the whole, granted a moral status.

**Profiting the environment - the market as the bottom-line**

Depending on how this category is perceived, the market could be seen as choking the environmental movements, turning them into money-making ventures leaving the environment as a simple commodity in the supplies and demands of the market. It could also, however, be seen as promoting environmental movements as the market connections, in some instances, gave greening a greater momentum in the organization.

In GreenZone, Per talked about the project being pedagogical. The target was more than an energy efficient building. It was about changing the way industry’s relations to the environment was perceived. The industry had to change. It had to adapt, not just technologically, but in the way of thinking dominating the industry. The environment had to become opportunities, Per argued, and not merely seen as a threat or a hinderance. The pedagogical twist was to make actors in and around the industry reflect and understand this. Per was quite convinced: ”If I had worked as a stockbroker or in the capital industry, I would be classified as an insider”. GreenZone, however, still shook the business rhetoric. Ola said in the beginning that: “Usually one starts the dealership and in the end try to make as much money as possible”. He continued by explaining the tensions in the view adopted in the project: “Parallel to my engagement in cars, I have, among other things, been a field biologist and it is possible to combine, even though it is basically an impossible combination”. GreenZone made this impossible combination possible. Greening and profiting from car sales was not an odd couple. But when things got around, even though Ola’s quote illustrates some of the issues pondered via the project, the underlying view of the change process was still about doing business: “Now, we have to sell cars like never before”.

Peder at MGV, in the Green Guide, stressed his view of the project’s greatest advantage, which was the way it made him think about environmental matters. It was actually possible to combine a profitable business with a greening process. A greening process could lead to competitive advantages. This gave MGV’s environmental work a particular momentum. For the other firms in the Green Guide, even though the market forces were never abandoned, they did not express the same enthusiasm over potential win-wins as Peder did. They had, however, identified win-wins. They were based on their strategic position close to the raw material (Sorsele Trä, the Öjeryds, Grundnäs Kött) or on their small-scale processes leading to only minor pollution (Baseco, Samhall), but the customers did not seem to be interested in this. For them, the environment did not pay off. They did not see the merger as clearly as MGV or GreenZone.

At Husqvarna, good profitability was a prerequisite for their environmental activities, as expressed in the environmental policy. As the market was not ready
to pay extra for the environment, good profitability, as formulated in the policy, would make environmental investments possible anyway. Husqvarna was profitable, representing 29.5 percent of the Electrolux Group's profit. They also had, as a vision of a proactive environmental work, products lying ahead of environmental legislation. The firm was also aiming to increase their process efficiency through a number of measures, for instance, the EMS, the IPD and the focus on core competencies. This would mean that if these measures have a positive effect on their financial performance, additional resources could be allocated to the environmental work. Basically, though, as inherited from the parent, the worldview conveyed at Husqvarna was still one where business came first. The environment was not ascribed a moral status in this view. It was subordinated to good profitability as a precondition for greening.

In Duni's environmental policy it is stated that the environment must become a natural part of the organization in order to ensure a prosperous business. Judging from the policy, it is as if the environment is the bottom line (or at least a competitive tool as stated in the 1995 environmental report) for doing business. From the encounters, however, this was not the case. It was rather the reverse relationship. The environmental work, as also stated, had to be economically feasible. Otherwise it was dropped. Basically, making the environment economically feasible means that the environment is perceived through an economic lens, or embraced by the business rhetoric. One reason for this, mentioned by the environmental manager, was the context in which Duni as a multinational firm operated in: "you sell yourself to the world of finance when you become a managing director for a corporation". Investments and changes had to be motivated financially. With the ongoing reorganization, focusing on core competencies, a new model for project work, as well as the ISO 14001, Duni was moving towards increasing market orientation. The environment, however, was not evident in the organization's culture. The environment was an uphill slope, making the products more expensive and thereby less attractive on the market. On the other hand, Duni showed several areas where the environment was considered, but this did not influence the basic view of the business.

For FMV, the matter is similar as for the other cases. Even though the organization is a public organization, there were several signs of a worldview in line with the business rhetoric. The new project organization with the CC centers was one example. The focus on earned value in the project work and the idée fix on the EMS were two others. In the two projects, Visby and Viking, environmental concern was, along side a legislative matter, a financial matter too. The TTFO, the project managers' bible, it was argued, could be greener. What separates FMV from most of the other organizations, though, is that the pressure to manage the finances more efficient did not make them less open about their environmental impact. This openness was, however, as in Duni, often about gathering and communicating technical data, even though FMV was clearer about their environmental impact compared to the other two large organizations.
With the market orientation processes developing in at least the three large organizations, the possibilities for any issue, environmental issues included, to be heard in another language than the business language seem to be scarce. This might be natural, but consider the investments made in GreenZone. Despite the money involved, it managed to extend the idea phase, perceive the process as a learning process, as well as retain a capacity and a possibility to change the process while on the way (the bug and the tree, for instance). GreenZone’s openness still leaned on the one-bottom-line, but the solution made money off was far better from an environmental point of view than most other car-service blocks. The structuration of Husqvarna, Duni and FMV's development processes, for instance, makes the flexibility and learning aspects peripheral. Husqvarna also confirmed this aspect with their problems of evaluating projects, as project managers did not find time to read old reports (and to write their own reports to begin with). This connects to the next category.

_A faith in technology - as a perspective and as a savior_

Alongside the economic bottom line in the organizations’ worldviews, there was a focus on technology and on technically oriented systems as the way to go. Problems encountered were predominandy dealt with through technologically more sophisticated solutions. Cleaner products, new fuels, EMSs, LCIs, indexes, matrixes, and other systems and tools; problems were identified and measured, indicating a faith in the organization, as well as the world as such, being suited for such treatment. The view is basically technocratic. The organization is mechanical and made more cost-efficient through more sophisticated and controllable structures and routines. Also, although framed as a tussle in the Husqvarna and Duni cases, market (economically feasible) and technology (technologically possible) often went hand in hand.

From one perspective, GreenZone represented a faith in the human capacity to change inert structures and ways of thinking. Per continuously stressed the pedagogical side of the project. But there was another side, a technical side, managed by Anders, the architect. This side was a sticking point in the project. When visiting the site, the predominant attractions were the different technological solutions integrated in the buildings, such as the grass on the roof, the living filters, the waste water system and the FFVs. Technological solutions were also key factors in changing the way of thinking, that is, factors leaned on in the pedagogical side of the project. In GreenZone, the future of the transportation industry was seen as full of opportunities, but it had to be seized through other solutions (ethanol cars, self-providing facilities, etc.) than those used to build our current infrastructure. What balanced the project a bit in this regard was, however, that although the technical emphasis, change did not come about solemnly through new technological innovations. They had to be accompanied by thorough education and information on why the new technology was needed.
In the Green Guide, a faith in technology was evident in many firms' greening processes. Anders at Bebos linked environmental work to cleaner production, which cost a million and nobody was ready to pay. It was also about finding substitutes to environmentally destructive substances, as in Baseco, Bebos and Samhall. The demand, voiced at the initial information meetings, of a concrete hands-on environmental work also indicated that greening should not be about social change through abstract and emotionally loaded processes. It should be about concrete practice, put to work in order to better the firm's performance. Conducting an audit, for instance, and using it in stakeholder relations, meant that there was a concrete outcome of the project. The EMS work initiated by several firms also meant that with the system came new administrative structures and routines for how to deal with greening, resulting in less ad-hocracy and more bureaucracy. This added to the technocratic impression. But as noted in the Green Guide case, the managers did not always feel comfortable or enthusiastic with the EMS work, indicating a view to some extent resisting technocracy. Some of the managers did not feel at home with the standards.

At Husqvarna, there were many signs of a faith in a technically oriented worldview. There were, as product development demanded, focuses on power, weight, manufacturing processes, vibration and ergonomics. There were the engineers, constituting the main actors in the greening of Husqvarna. In the environmental work, there was also the emphasis on technically oriented tools and systems such as the Green Index and the EMSs. As stated by the vice president of R&D: "concurrent with our growth there is a need for routines and structures". There was, though, resistance to this, as expressed by a design manager: "The firm has not grown out of routines and it is starting to become a strain now". With the ongoing reorganization process at Husqvarna, however, the technocratic emphases became a main impression.

There was a similar situation at Duni. The respondents were all engineers and the emphasis was on new technical tools and systems. Together with official reports, they stressed that reviewing the firm's environmental impact demanded rational thinking and not any emotional knee-jerk reactions. The scale-studies, the LCIs, the KPI, the EMS, and more, were signs of how greening was viewed at Duni. The issues were suitable for technocratic measures. Still, there were signs of a counterview through the encounters with, for instance, the SSNC. The firm was, despite their hard facts, targeted as a destructive actor. This seemed to have questioned the rational technocratic view, but it was still the way the firm combated the pressure from actors such as the SSNC. It even seemed as if this pressure made the technocratic aspects of the worldview more visible.

Johan at FMV illustrated their situation well: "What is difficult with the environmental issues is that engineers, they are used to dealing with everything with a folding rule". There was, hence, a scent of resistance to the technocratic worldview in Johan's statement, but he also stressed the risk matrix and the need for more unified assessments. The EMS was also the way to fix it. Still, it was
difficult to get the quick answer and the technocratic view was, through Johan’s metaphor, confronted by the helicopter view. Combating the folding rule with a helicopter view meant kicking and pushing the projects forward, though. One of the project managers still stressed that “it is more a mental matter, a matter of education, to make people aware”. When it came down to practice, however, the worldview became real through more immediate concerns for finance and technology.

Linking the technological emphasis to the market as the bottom line, one important difference between market and technology is noted in the account of Husqvarna. There was a love for technology alongside strivings for profits: “Towards the Group you feel the demands for profitability, but towards Husqvarna you feel for the quality of the product”. In the extremes, there is basically a difference between the two. The technology-lover sees environmental problems as technological obstacles overcome by new technological innovations. The financially focused actor labels it a money-dependent issue. Green investments demand money and they should have a positive effect on financial performance. Market and technology, as stated, often come hand-in-hand, though, but they are also often found in different places in the large organization (in the small firm perhaps with different persons). There are usually designated departments for each of them. The money-issue sits with the financial and marketing group. The technological issue sits with the R&D department and the engineers. Movements in the three large organizations in this study showed that these two sides were on the way of being merged, mainly through the market crossing the departmental borders. One point here, however, is that the market side has always held technology as a key factor.

The focus on technology, as discussed above, is, as many representatives of the organizations emphasize, an important part in reducing the environmental impact of their operations. New administrative structures also assist in keeping the environmental work under control and in staying on track towards what they define as a more sustainable path. What is striking with the respondents’ accounts, though, with exceptions of course, is that there was an evident lean towards a technical emphasis in both perspective and practice. The environment seemed to be neglected or subordinated to this as well.

The environment as out-there

As a consequence of market orientation and technocracy, the environment is addressed through a business oriented worldview. It becomes cast as out-there, as boxed-in and bereft of any moral status. What might be an exception is GreenZone.

GreenZone had the environment as the framework, as the outer frame for all human activity. There were undisputable scientific facts supporting the project. The environment was not negotiable, which the use of TNS’ systemconditions in the trainings indicated. Even though the environment
through such a view is taken into greater consideration compared to one simply translating it into monetary figures, the environment is out-there. But there were examples of this view being challenged. The bug and the oak, for instance, altered the project’s outcome. Placing the pump at a strategic location meant that a concern for the environment was inscribed into a nonhuman actor, which subsequently became a part in influencing our choices and attitudes. There were "liquid" nails, such as screws or bolts, making it possible to reuse the planks and beams. The environment was not out-there in those examples, but rather right in-here, floating along with the human actors working at and visiting the site.

In the Green Guide, what many seemed to believe was that there were no major environmental problems in their immediate surroundings. This was also the sentence almost all audits began with. The environmental work was predominantly preventive, it was stated. What they saw was not a troubled environment, but a large and durable environment. From such a view, the environment was out-there, as a pantry of resources for them to draw from. But there were also signs of the environment being right in-here. Nature, at least in these rural districts of northern Sweden, co-dictates the working and leisure life to a large extent. It is more immediate. Urban centers with subways and huge indoor shopping complexes are not the everyday life for the rural citizen. For him or her, the relation to the environment seems to be more intimate in this sense.

At Husqvarna, the environment, as conveyed in the discussion on identities, was not reflected upon in a larger and more holistic picture. It was considered through the users’ health and through legislative demands on emissions. They were in a way the spokespersons for the environment. Through such a view, the environment was not only for somebody else to consider on behalf of the firm, but also one translated into the organization through market adaptation and technologically oriented indexes.

At Duni, “High environmental quality is achieved by adapting the business and products to a sustainable society”. The environmental manager also stated that: “The important thing for Duni’s products is not the environment, but that we manufacture products with the right quality and that they function as they should”. There are, though, several signs of the business and the products not being adapted to a sustainable society, at least not one where ecological sustainability is aimed for. The environment was an uphill slope and not part of the culture, for instance. Also, the environmental wave was over, it was argued. Other concerns had taken over, such as genetic food and mad cows.

For FMV, the environment was translated from key issues of long-term survival into risk assessments, matrixes, folding rules and an EMS. The environment was reached through these activities, indicating an environment out-there bridged by technocratic tools. But the organization also indicated movements toward bringing the environment into the core view. Also, accounting for the environmental impact caused meant that more links between
their operations and the supposedly out-there environment had the chance of being constructed.

**Main categories**

The cross-case analysis, going from practices to assumptions, has singled out a number of aspects demanding further discussion. The analysis should not be read as a synthesis, though. Many aspects worked both ways, although there were several traits cutting across the cases, resulting in main impressions, or a set of main categories. A closer look at the environmental work in practice, for instance, came to center on systems and tools (ISO 14001, indexes, LCI), actors (engineers, outsiders, lobbyists, groups) and communication (official reports, audits, education, little external relations). Exploring the driving forces and stakeholders resulted in four categories: market and profits, customers and owners, legislation, and environmental impact. The organizations' identities were in flux. There were, however, some common aspects as they balanced in the tensions between performing according to the archetype business (a modern firm) and reflections on their environmentally destructive sides (a destructive organization), as well as between agency and structure. That is, how their particular actions mattered in the context. On the worldview level, there were three categories: the market (wins-wins), a faith in technology as perspective and as savior, and the environment as out-there. These main categories are summarized below, using the analytical guide from chapter four:

<table>
<thead>
<tr>
<th>In practice</th>
<th>Identity</th>
<th>Worldview</th>
</tr>
</thead>
<tbody>
<tr>
<td>System and tools</td>
<td>A modern firm</td>
<td>The market</td>
</tr>
<tr>
<td>Actors</td>
<td>A destructive organization</td>
<td>Faith in technology</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td>The environment is out-there</td>
</tr>
</tbody>
</table>

![Figure 10.6: Approaches to greening across the cases - main categories](image)

For the following analyses, these impressions are considered as input, or invitations, for more reflections. Even though questions have been answered in this chapter, there are more dimensions deserving to be connected to the cases. There is also a need for a deeper analysis.
11 Technocentrism and reflexivity

In this chapter it is argued, albeit with seeds of resistance, that the dominating approach is characterized by a technocratic practice foremost driven by external actors and imperatives, especially legislative ones. The identities become mainstream through a standardization of greening and the worldviews are strongly technocentric in orientation. In sum, it all resembles a modernistic approach.

Introduction

In practice, the organizations dealt with greening through systems and tools (ISO 14001, indexes, LCI); through assigning particular actors the task of working the issues (engineers, outsiders, internal groups); and through communicating their work through different channels (official reports, audits, education, alliances). These categories have rendered new connections in the analytical process. First, linked to systems and tools, there were evident strivings for standardization in how the organizations dealt with greening in practice. More ad-hoc movements were seldom addressed or accounted for. Second, linked to actors and communication, there were signs of specialization in the cases. There were emphases on greening demanding specific knowledge and a specific place in the organization. There were also signs of generalization through, for instance, a broad participation in environmental trainings, but these signs were not as visible. Third, connected to actors, there was an engineering focus in who attended to greening in practice. GreenZone and the Green Guide were exceptions, housing a mix of educative backgrounds, but even in those projects there was an apparent engineering focus. In sum, these new categories, representing the practical part of the approaches, are labeled technocratic practice.

In regard to the driving forces and stakeholders, the cases frequently touched on imperatives and stakeholders outside the organizations. This part is therefore labeled external drivers and it is divided into four categories. The first points at the tightening of the financial screw, influencing the greening processes in a market direction. The category is labeled top management and the objectified market. The second category targets the customer as the benchmark in greening processes. The customer was, as discussed, assigned the responsibility of setting levels of greening, but this was also a rhetorical device. The third category aims at legislation and is named regulatory environmentalism, emphasizing the keen focus many organizations’ had on what the legislators were up to. The last, and also the most diffuse category, is about ethical aspects of why organizations approach environmental matters. It is labeled doing good.

For the third part of the approaches, identity, the keyword in the analysis is reflexivity. Living in the tensions between performing as the business archetype, or the modern firm, and developing an own character in times of environmentalism and globalization comes with a demand for reflexivity. Some had interpreted this
as an opportunity, but the majority seemed to have played it safe and strived towards being identified as a business as usual. The discussion is divided into two categories, having an own identity and agency and structure. The latter targets how the organizations' roles were perceived in different aspects of the environmental work.

The final part of the approaches, matters of worldview, shows that there were technocentric traits in the worldviews, but also signs of cross-sectorial movements. These movements were not as obvious, though, as the bottom line was still about anthropocentrism and technocentrism. This section is therefore labeled as such. The section includes only one category, technocentric ways of thinking, emphasizing the mainstream view's focus on economy and technology. The figure below summarizes the main categories for further analysis:

![Figure 11.1: Main categories for further analysis]

The following analysis is structured according to the figure above, beginning with practice and ending with matters of worldviews. The categories derived from the cross-case analysis are in the process also explicitly merged with matters of philosophy (chapter two) and theoretical reflections (chapter three). The end of the chapter reconnects to the research objectives posed at the outset.

**Technocratic practice**

This part is structured into three categories. The first, standardization, specifically represents the spread of the ISO 14001 standard, but there are tensions in this process as well. From one perspective, these tensions, expressed as resistance and skepticism against the EMS trend, constitute an ad-hoc side of the standardization process. In the second category, specialization, the designation of environmental tasks to specific individuals and departments is discussed. Specializing the environmental work was, however, also merged with hints of generalization. There were, for instance, thorough environmental trainings of employees and implementation of environmental solutions across product families. These two categories, standardization versus ad-hocracy and specialization versus generalization, might create a dualistic impression of the discussion. But although the main impression has the cases as leaning towards the premier aspects in the pairs, there are the tensions between them that create
some dynamics in the greening process. The third category, engineers, targets the domination of engineers and engineering perspectives in greening.

Standardization (ad-hocracy)

According to Rikhardson & Welford (1997), the implementation of EMSs, specifically ISO 14001, is a standardization process. A particular interpretation of the environmental work, as something to be structured, controlled and routinized is sedimented in the organization. Implementing the scheme is usually a top-down process, entering the organization in a technocentric guise. Such an interpretation, however, could be different depending on the organization in which the management system lands. It is after all contextually contingent. But the point made by the authors is that the system per se is a standardized framework and when stabilized in the organization, it suffocates possibilities for alternative interpretations. It is a step towards inertia in the environmental work.

This inertia is also a matter for industries as such. There is a risk, or chance, depending on who you are, for industry-wide standardizations as organizations globally implement the same system. This means a shared framework and a shared conceptual base, which might be fruitful from a benchmarking perspective. It also means, however, that one system fits all, from the rural sawmill to the world-leader on the chainsaw market. The momentum of the ISO 14001 diffusion (ISO World, 2002) also makes it hard for organizations caught in the supply chain to find time, knowledge and money to develop and invest in an own EMS, more suiting to their specific operations. Not all organizations have the benefits of hiring subsidized experts, such as Erik and Staffan in the Green Guide.

Placing a particular faith in an EMS would also point at the quandary discussed by Burns & Stalker (1961) on the mechanic and organic management system. The authors argue that organizations tend to, through time, drift towards the mechanic style. Focusing on the environmental movements in industry (c.f. Hoffman, 1997) and the EMS trend, it fits well with the unwritten character of the early phases of environmentalism compared to the latter phases’ corporate hijacking of the issues through, for instance, ISO 14001. What might be a result of this process is a rapid spread of EMSs, but it might also, as noted, result in inert structures that are difficult to change once new knowledge and information are encountered (c.f. Sweet, 2000).

The pillars of the mechanic approach also fit with the EMS requirements on leaving bureaucratic marks throughout the organization, as well as with the characteristics of technocentrism (c.f. Dion, 1998). ISO 14001 is a top-down system and it promotes a mechanic structure. Such an approach was evident in Husqvarna, Duni and FMV’s faith in ISO 14001, as well as in their process orientations through new project management models. The development models would make the organizations more focused on foresight and control. They would also save time and money. Stages and phases were broken down and
structured. Mistakes were front-loaded and the actors participating in the process had to report on the progress at each step/checkpoint/tollgate. The environmental work was subordinated to this as well, leaving less room for more organic and ad-hoc practices to develop.

A technocratic approach, though, might fit a firm such as Husqvarna. It was a world-leader, operating in a stable environment, which was continuously made even more stable through a focus on core competencies and the Group’s acquisitions. They also had a couple thousand employees that had to be coordinated in some way. Still, as pointed out by Burns & Stalker (1961), even a stable business environment is continuously changing and an organic management system might create a platform for coping with such fluidness. Focusing on environmental risks, such risks have also led to so-called stable (business) environments being dramatically altered (c.f. Beck, 1992). There are, for instance, the energy sector’s developments since Chernobyl; the link between the transportation sector and the greenhouse effect; and the link between farming and eutrophication. Firms, as well as entire industries, equip for stability, but live with change and uncertainty. ISO 14001 might be one way to avoid environmental surprises, aiming to reduce uncertainty, but it is still a mechanical administrative system that sediments the way greening should be approached. The standard is also built on a traditional stakeholder view, in which the buyers and suppliers along with legislators constitute the main actors.

Also, the ISO 14001 standard as perceived by some of the cases, that is, as something enhancing the organization’s legitimacy, might overshadow the fact that it is not an eco-label. It was developed and is controlled by non-democratic institutions, i.e. the firms themselves. Rikhardson & Welford (1997) chose to perceive this as a power-related problem. The power is to a large extent in industry’s hands at the same time as industry is the targeted polluter. Environmental management in terms of ISO 14001 therefore means that firms are self-regulating their activities to some extent. The issues are hijacked, Welford (1997) claims.

If the ISO 14001 is the frame, however, the matter is also what the organizations fill it with. The framework is there, but what about environmental destruction? There is no way around that what the organizations’ do is very much up to them. The basic demands in ISO 14001 are to follow existing legislation and to make continuous improvements. The core issue is what they make of it in practice, how they walk the talk. Do they turn it into an administrative issue (we aim to implement an EMS), a business issue (to consider the environment whenever it is financially feasible) or an environmental issue (we take responsibility for the environmental destruction caused by our operations)? This is probably a sticking point in the EMS debate. It is not the system per se, but the content the implementer chooses to fill it with. ISO 14001 is a standardization process, but its content does not have to be. The large organizations in this study were in the process of implementing the systems, but through policies, targets and strategies communicated in official reports, there were mentions of what the
systems would be filled with (see further on under anthropocentrism and technocentrism). These statements were, however, more characterized by administrative and business emphases than environmental. Targeting the content ahead of the system also meant a different focus. GreenZone’s approach to the system differed, for instance, from FMV’s. For GreenZone, the standard was not the way to fix it, as at FMV. Even though ISO 14001 cut across the cases, there were opportunities for ad-hoc responses to the standard. Judging from the cases, however, they did not seem to have grasped these opportunities.

Rikhardson & Welford (1997) are critical to the standardization process lead by ISO 14001. I subscribe to their point of view, but it should be emphasized that there are opportunities in this process as well (c.f. Welford & Gouldson, 1993; Söderbaum, 2000). Within what seem to be engineering organizational cultures, the EMS work is a way in for environmental issues. The standards give them legitimacy and a space to flourish, which perhaps might not have been granted otherwise. The EMS also assigns the issues and the firm legitimacy on a global market. Other actors recognize the systems. This results in at least, although to different extents, environmental issues being pondered. From this view, EMSs push organizations onto a path where the environment becomes an inherent part of their processes.

**Specialization (generalization)**

In the cases, there was a matter of delegating greening to specific parts of the large organizations and to actors outside the small firms’ boundaries. But there were also signs of generalization. At Husqvarna, they aimed at spreading the environmental network. At FMV, the System Safety staff “generalized” themselves to the projects. In GreenZone, Per was knowledgeable in the environmental area, but he also brought in Anders, the architect, and Esam, the trainer. All employees were also supposed to be environmental ambassadors. Even the building, with all its environmental solutions, “communicated” environmental concern.

There were, though, particular impressions of specialization. GreenZone, albeit an example of a broad environmental engagement in the project, was divided (specialized) into a technical side and a pedagogical side. In the Green Guide, the specialists were the project managers. They had the insight and the specific knowledge required to assist the small firms. They were also left to deal with the greening process. The small firm managers seldom had the time. At Husqvarna, the R&D department dealt with the environmental issues. At Duni, Environmental Affairs kept up with legislation, the EMS, the KPI, and more. At FMV, the environmental group monitored the environmental matters (see also table 10.1).

It could be argued, however, that specialization is needed due to the scope of the environmental area. With a growing legislative framework and with stakeholders increasingly integrating environmental issues in their routines, for
instance, via EMSs, there have to be actors within the organization keeping track of the developments. But, as a counterweight, the issues also fit in a larger and more holistic frame. Their characters permeate all activities, being right here instead of out-there (Peattie, 1995). They are matters for the whole organization, as they are inherently cross-disciplinary as well as value-loaded (c.f. Egri & Pinfield, 1999). With specialization of the environmental work follows a number of consequences. One is that the environment becomes an issue only for some, for instance, the environmental group (Duni and FMV, R&D at Husqvarna) or the project manager (the Green Guide, and maybe also for Per in GreenZone). Another is that greening is framed as possible to treat in such a manner. Organizing greening based on specialization into a specific department and with, on some occasions, tailor-made staff made up of environmental engineers, signals a particularistic view of the issues.

There was, as stated, some resistance to the specialization of greening. Catasus et al (1997) noted that the environment often meant a great deal to environmental managers. They were even claimed to be the social conscience of the organization, but they were also constrained by their roles as environmental managers. At Duni and FMV, the environmental groups basically took on the role of the environmental lobbyist. They knew they were not voiced as loud as they would like to be. They were also the specialists. This meant that they could, if decided upon, argue that as they were the specialists, they would take care of the issues. Just leave them to the environmental group. Instead of confronting Meima’s (1997) so-called green wall, though, they hovered around, above and under it. They mantled the task of handling the greening process, but with the purpose of making sure that their days as the lonely specialists were numbered. They tried to get the issues into the right phase, making the issues ride easier with the organizations’ development processes. They targeted procurers, gave them a handbook. They carried out environmental trainings. They tried to integrate the project work. If the issues would get momentum, they argued, they had to get out of the environmental department. Specialization would not get the job done. Generalization was needed.

**Engineers**

The persons working with environmental issues were predominantly engineers. When framing how organizations approach greening, there have been those referring explicitly to the engineer. Wolff’s (1998) “engineers” and Söderbaum’s (2000) “the engineering habit” are two examples. The engineer also associates, as in Wolff’s article, with the expert, or the ecologist, and his or her strivings to frame the problem, develop the correct solution and implement it in the organization’s greening processes. In this way, the engineer’s methods, similar to the economist’s, of measuring, boxing-in and modeling the greening processes, become central. The “engineers” were apparent in all cases, albeit to a more modest degree in the GreenZone case. Indexes, matrixes, LCIs, folding rules,
environmental scales, and more, indicated the particular expectations on what kind of actor that was suitable for the environmental work in these organizations. That is, greening demanded engineers. Further, these experts’ knowledge is not only required to pursue the problems, but also placed above competing views in a technocratic knowledge hierarchy. Wolff (1998) argues that such a focus neglects the complexity of environmental issues and social systems (see also Wynne, 1996). Even though experts often are right, they are often wrong too.

Duni, for instance, met their stakeholders with expert-led investigations, providing hard facts in contrast to the knee-jerk reactions sometimes confronting the firm. Husqvarna also had their index and their product declarations. As engineers occupy green positions in organizations, it is an indication of how management perceives the greening process. The choice of the engineer could also, however, be explained by what kind of people management has access to within the organization. If there are predominantly engineers to choose from, engineers are most likely to occupy the environmental positions. Appointing trained engineers, though, basically means that the issues are, albeit a bit simplified, issues for the technocrat. In the cases, there were no environmental staffs with a background in sociology, humanities, history or organization theory. Probably this was because such backgrounds were not required to develop environmental indexes or life-cycle inventories. The environmentalist’s role in the firm was defined as an engineering role. This might even be labeled a “greengineer” approach.

If we accept that experts and not only laymen are wrong from time to time and that greening is more than technology, the organizations are left with but one side of the matters. They are left with the capacity to speak but one language, or with but one position in the circle. There is a smaller space for reflexivity built into the organization. One aspect that might lead to a deeper understanding of this situation is the question of why organizations work with environmental issues in the first place.

External drivers

The main attention in the case encounters was devoted to actors and imperatives outside the immediate organizational boundary. Labeling it external drivers, however, might imply a static and closed view of the organization instead of a more open-system oriented view. In-here is the organization (internal). Out-there is the organization’s environment (external). The point is that this was the main impression when it came to what and who motivated the cases’ environmental work. The section is structured into four categories. The first, top management and the objectified market, might signal an exception to the external focus (top management would be internal). But although top management, as well as the owners, was the actor, they in turn stressed external imperatives, especially the market forces out-there, out of reach for the corporate actors. The second category targets the flexible use of the customer as a driver in the greening
processes. The customer is played both ways, as both a reason for and against greening, resulting in the customer as the benchmark.

Third, regulatory environmentalism, frames the focus on environmental legislation as a particular imperative in the environmental work. The cases provided different approaches to this driver, shifting between voluntary proactive change and technology forcing, but there was a lean towards the latter approach. Power also becomes an issue in this part of the analysis. The fourth category, doing good, is brief and touches on the ethical aspects of why the cases approached greening. In GreenZone and at FMV, in some instances, there were emphases on reducing their impact on the environment, regardless of finance. It may be symptomatic for these cases as FMV did not face the same pressure to create shareholder value and as GreenZone was a highly unwritten and visionary project. Still, there are aspects to consider here linked to all cases.

Top management and the objectified market

At Husqvarna, Duni and FMV, as well in some of the Green Guide firms, the owner tightened the financial screw on the organizations, leaving a defined space for greening. The owner steered the relationships towards market orientation and, as at Husqvarna and FMV, the systems in place at, or favored by, their parents came in the shape of the younger brother inheriting his big brother's clothes. At Husqvarna, tools and programs, such as the Green Range, Eco-Know-How, the IPD and the vision of the environment, were Electrolux issues from the beginning. But, as stated, the owner did not only transfer environmental toolboxes. It was also about the space given to the firm to go about its own path. This mainly came down to finances. Green had to be dollar-green for the environmental work to pick up speed. They work with environmental issues because they are good for the business, because they present market opportunities, because they can be integrated into the market mechanisms. This might be a dilemma, Catasus et al (1997) note, when many environmental initiatives cost more than they bring in (money-wise). The owners along with top management, being held responsible for generating shareholder value, seem to be those predominantly driving this view. Top management, however, is a dynamic driver. They play the business rhetoric, but they also at times challenge this rhetoric through different ideas on greening.

At the three large organizations, top management, as expressed by the environmental manager at Duni, works in the world of finance. But at Husqvarna there were mentions of the former Electrolux CEO, Leif Johansson, and his commitment to the environment. Although he promoted a green ideology based on the business rhetoric (Strannegård, 1998), he increased the attention to the issues. His conviction seemed to have been crucial for the issues gaining momentum even at subsidiaries such as Husqvarna. At GreenZone, albeit also emphasizing the market forces, Per had his mind set on greening. At times, the money spent on the project seemed secondary to the concept. The project would
be for the world to see. It would be on BBC and CNN. As the leader of the project he enrolled other actors to this vision. This indicates the importance of top management as a carrier of green imperatives.

There are several examples beyond the cases of top managers, and owners, constituting a particular driving force in greening their organization (c.f. Anderson, 1998; Roddick, 2000; Luke, 2001). These examples also show that it seems to be top management that decides that greening should be approached in the first place, as well as how and why the organization should approach it. Respondents at Husqvarna, along with Strannegård (1998), emphasized the importance of Leif Johansson’s role, but this also meant implementing a particular business-driven environmental ideology. Jones’ (1998) study of The Body Shop, as one of the green spearheads in industry, has the firm as unitarist when it came to creating a culture around greening. Behind this lay Roddick’s (2000) conviction of the way to go. Anderson (1998) decided that his Interface would become restorative and it changed the firm forever. Bill Ford, Jr. and his FMC claim that the customer could have any vehicle as long as it is green (Luke, 2001).

Basically, even though environmental initiatives taken by top management many times are praised by employees, academics, politicians and others, there is also an underlying dilemma with a too particular emphasis on top management as a green driver. Echoing Fineman’s (1996, p 493) words on privileging a top management perspective: “it fails to engage with the values of non-executive personnel”. Stressing top managers and owners’ role in moving the organization towards market orientation and/or greening is also but one answer to the why question. They were one group of actors in articulating the approach to greening. The customers constituted another.

The customer as the benchmark.

The customers did not demand environmentally adapted products, or they did, but they were not ready to pay any extra for them. In other instances, the customer actively demanded environmental adaptation, searching for the eco-alternatives, rewarding the supplier by buying them. What is interesting, however, is not that a firm has customers with different needs and wants. What is interesting is that the firm homogenizes customers in both ways. In an environmental report, the CEO singles out the customer pressure as tough and as something the firm must respond to. On the other hand, those working with R&D, being in contact with customers in the product development processes, argue that the customers are simply not interested in environmental issues. What matters is the price in regard to basic demands on performance (not environmental). Whichever view you choose, though, the customer is to some extent given the responsibility of being a green benchmark and managers use this.
This is sometimes referred to as the customer rhetoric (c.f. Fineman, 1996; Dion, 1998; Crane, 2000). Fineman (1996, p 489) also argues that this creates some slack in the organization (as in Cyert & March, 1963/1992), working as a cushion for management to retain its autonomy and control. Why does the firm not work with environmental issues? The customers do not demand it. Why does the firm work with environmental issues? They do it because their customers require it. They can, in other words, play the argument as they choose. In this way, management does not take a stance on the matter. Such an approach is amoral (Crane, 2000), not only towards the environment but also to, for instance, the employees. Management in this view does not include leadership, that is, guidance on what environmental values are considered playing along with the organization’s goals and strategies. However, linked to the previous category, being clear on this point would perhaps neglect the values of non-management staff, but being clear on values does not automatically mean that non-management values are neglected. The struggle at The Body Shop for finding a good mix is one example (Jones, 1998; Roddick, 2000).

Returning to the customer, Per at GreenZone was clear in his statement on the GreenZone vision. He did not explicitly point at the customer as a stakeholder demanding greener products. He was convinced that greening was necessary regardless. He was so convinced that he believed in convincing others of this as well, among which there also were potential customers. It is like the entrepreneur seeing something others do not see and subsequently tries to convince others of the benefits of his or her new combination (Schumpeter, 1914/1971). What this also means is that for those driven by an “environmental conviction”, the customer as a driving force in the environmental work is less immediate. If convinced, the entrepreneurs in the firm will persuade the customers and the employees. This seemed to have been the case in Anderson’s (1998) Interface Inc. and Roddick’s (2000) The Body Shop as well.

Targeting the Green Guide firms, that is, small firms that often are dependent on large firms as customers, the slack in this category seems to be smaller. They are often more dependent on the large customer than the customer is on them. The large customer has a high degree of influence. In such a line of reasoning, large firms become a particularly important actor in the greening of industry. The large customer becomes a key actor in how the small firm managers interpret the environmental work. That is, as the key node in the supply chain, the largest structural opportunities to influence the level of greening lay with the large customer.

The point with the customer rhetoric, though, is not that it does not matter what the professional chainsaw user, or the household buying Duni products for a barbeque, demand when it comes to environmental performance. Customers are important stakeholders. That is no doubt. The point is that the firm, as the supplier, does not take a stance on the matter, or better, it takes several stances. Perhaps they do so because they fear a loss of customers. Customers usually represent a diverse set of interests. Some like eco-labeled products whereas
others remain skeptical towards such products' performance. Using the customer rhetoric, however, shifts the responsibility from the organization to the customers. This is the case for the small firm as well, on occasion blaming it on the large customer. The firm is through this slipperiness taking an amoral stance. The mere existence of advertising is, though, a sign of firms trusting their capacity to help customers on the way, choosing what products to buy and not. Still, as encountered in this study, there are those that argue, as a reason for holding the greening process back, that they cannot tell the customers what they should buy or that they are facing a market that is not ready yet. The point here is that they are in many ways already telling the customers what they should buy. Another actor defining what is traded between buyers-suppliers is the legislative actor.

Regulatory environmentalism

On legislation as a driving force, Rikhardson & Welford (1997) suggest that it might be the only thing working when transforming TNCs toward sustainability. There is a point with such a view when reflecting on the cases. With reference to the historical backstep in chapter three, many firms in this study approached environmental legislation as firms were singled out to have done in two of Hoffman's (1997) phases, industrial and regulatory environmentalism. In other words, there is a 1960s' self-regulation (industrial) approach apparent in the large firms lobbying and ISO 14001 implementation processes. This does not mean that firms felt little if any pressure from NGOs, governments and others. They did, but in practice the conditions were still to a large degree set by industry. The firms were involved, influencing the legislative frameworks. As indicated by a design manager at Husqvarna, this was important since legislators did not have the insight concerning their products' complexity. It was not as simple as to just reduce emissions, the manager argued. It was dependent on a range of interdependent factors. Husqvarna therefore had to be involved in the processes leading up to new legislation.

Judging from the reactions to the legislative demands, especially those to the new Swedish Environmental Act, there was also an element of regulatory environmentalism (1970-1982 in Hoffman's account). The new act is an example of the government striving to impose tougher environmental demands on industry. Hoffman talks about technology forcing. From this view, there is a traditional dichotomized relationship between legislator and polluter. During the 1970s, as indicated by Hoffman, there was a faith in such an approach being the solution to the problems. Porter & van der Linde (1995), however, argue that legislation should not be technology forcing, but rather technology stimulating, encouraging firms to innovate. A more voluntary approach is promoted ahead of a more forcing approach. Placing a particular faith in tough and forcing legislation instead assumes that firms are irresponsible. It means that they will pollute if they are not forbidden to do so. Rikhardson & Welford (1997, p 60)
imply that firms adopt a fairly reactive position (comply, nothing more) because of their established power positions and that if nothing else works there is indeed a need for tougher legislative actions:

The power which industry has in the current economic system is therefore a barrier to further development of the concepts of sustainable development. Thus the only way to bring about a change in this sub-optimal dominant ideology is to challenge the very basis of that power. Without a fundamental revolution in the way we organize our society, such a challenge can only come about through a legislative process.

The authors link the role of the legislators to the growth of transnational firms, making the latter economically larger than entire nations (c.f. Gladwin, 1998). Welford (1995, pp. 12-13) argues that TNCs, due to their dominance over international trade and production, should be held responsible for much of the environmental destruction taking place. Those firms are able to set their own conditions on a global market and those terms do not necessarily fit with the needs of the less privileged. Although these patterns are worrying, an approach, in its entirety, cannot be characterized by a technology forcing view on business organizations, even though there are examples where such a view might be necessary. At Husqvarna, they were focused on legislation, which might play the advocates of a technology forcing view right in the hands. But there was also the complexity of the Husqvarna products. In GreenZone, legislation was involved, but more as an additional reason to change now instead of later. It seemed as if future legislation, as perceived by Per, was rather a motivator instead of an obstacle.

As the customer driver hinted at, firms have their power because customers, legislators and others continuously do so. Others perform this power, reproducing the patterns that make the particular firm powerful (c.f. Berger & Luckmann, 1966; Latour, 1986). When Rikhardson & Welford write about legislation as a key way (or almost like a threat) to deal with TNCs’ environmental destruction, they are also constructing those firms as such. When firms in the Green Guide argue that they have slight chances of changing the way things are, pointing at the large actors in their line of business, they are also constructing the way things are. Of course, going up against Goliath, as in refusing a law or a large customer's demand, might have negative consequences. The small firm arguing that it will not implement an EMS merely for the large firm's sake, might lose its largest customer. Still, the power is performed and it could be otherwise. Erik and Staffan in the Green Guide showed that it in many cases were enough with small-scale EMSs. Duni showed that in some instances, being open did not hurt. GreenZone showed that lobbying to change the regulatory framework paid off as the project received a reduction on the fee for being connected to the municipal water system. GreenZone’s quest showed the fragility of regulation, something firms on occasions are criticized for taking advantage of.
Legislation is just one part, though. Pushing the legislative demands forward might mean that firms develop environmentally sounder products, or find new ways to avoid the legislative pressure. It does not, however, mean that wider environmental, ethical and social issues are reflected upon. Doing better in product development does not mean that the firm is doing good in a broader sense. Duni experienced a contrast to their technically oriented approach when being perceived as a symbolic actor. Following the law was not the key matter. There was more to it.

Environmental legislation can also not be the innovative edge. Legislation is rather about securing conquered territory. Firms, such as Husqvarna and Duni, seem to believe that environmental legislation will always hunt them. As soon as they have accomplished one level, there is a legislative pressure to take the next. This goes on and on, and the pace is tough. But such a stance, although not the only part of these cases' approaches to legislation, is limiting. The greenhouse effect, for instance, is based on the release of carbon dioxide. Once this pollution has reached what might be regarded as more sustainable levels, the issue is off the agenda for the organizations fixing the levels. There are also live examples of firms that have minimized their use of fossil fuel based release of carbon dioxide, which have rendered in the greenhouse effect not being a threat to their business. Imagine Ray Anderson's mission for Interface, for instance. He wants his firm to become restorative, to not only reduce their environmental impact radically, but to pay back to the environment (Anderson, 1998). As conveyed by Anderson, legislation is not even close. It is not an issue. This brings the discussion close to the next aspect.

**Doing good**

Working with the environment for the sake of the environment, without stressing the necessity of profiting from it, was rare among the cases. FMV was perhaps the best example through their emphases on their environmental impact. But then again, they did not have an explicit profit demand driving their operations. Doing good financially seems to make being open about damaging the environment difficult. A point with this category is that it is short, as there is little to analyze here. With the three previously discussed aspects, the conclusion is therefore similar to that of Fineman & Clarke (1996). Green "ethical" stakeholders are seldom involved and if they are, they are translated via owners, customers and regulators into the business rhetoric. The way a set of legitimate stakeholders is framed by the organization also results in a business driven setting. The ways stakeholders are framed, however, also indicate an organization's identity.
Reflexivity

The matter of the cases’ identities is a matter of reflexivity, of thinking deeply or carefully about the organization and its approach to greening. Environmental issues are for many organizations new issues and as such linked to uncertainty. As such, they are also often dealt with as to fit existing ways of doing things (c.f. Blomquist & Sandström, 2002). Organizational actors predominantly handle unknown issues through standard operating procedures (SOPs; Cyert & March, 1963/1992). But new issues, such as environmental issues, also present opportunities for reflection. They are reasons for reviewing how the organization interacts with the environment as well as reasons for reflecting on how environmental matters influence the organization’s identity and reputation. Many stay within the corporate boundaries in their reflections, though. The concern for the environment is translated into existing SOPs. It becomes business-as-usual and the way to legitimate greening is to embrace it into the business rhetoric.

At the same time, there are resistances to this corporate hijacking from a wide range of actors. Statements in official reports in the three large organizations in this study at times touched on the environment as ethically relevant, even though their ways of walking the talk were based on incorporating the environment into the market orientation processes. Some scholars argue that environmental destruction is linked to such orientations, to the generation of corporate profits on the organizational level (Korten, 1995; Welford, 1995) and to economic growth on the societal level (Costanza et al, 1997; Söderbaum, 2000). As organizations do not want to be seen as green washers, or as not walking the talk, they have approached the matter. But they are also drawn between having to stress their capacity and commitment to produce value for their shareholders. They are left pondering which path they should embark upon and what it might say about the organization. There is also the matter of what values the organization would be linked to as a consequence for choosing a particular path. They are, in other words, constructing their identities in the tensions between different institutional and individual desires and demands. The organizational identities are constructed in a mix of institutional and individual reflexivity (Giddens, 1991/1997).

One example, as mentioned earlier, is the managing director of the car dealer at GreenZone, Ola: “Parallel to my engagement in cars, I have, among other things, been a field biologist and it is possible to combine, even though it is basically an impossible combination”. He had GreenZone as a project making the merger possible. The project also aired several tensions in the greening debate. For GreenZone, in this example, the organization balances between corporatism (in line with materialism) and environmentalism (in line with idealism; as in Gergen, 1999). The former constitutes a well-known territory, the cosmos side. The latter tends to be more on the chaos side. GreenZone, along with the other cases, however, leaned towards the cosmos side.
This section on identities is structured into two categories. The first is labeled *having an own identity*, pointing at the tensions between the opportunities greening comes with to construct an own identity and the parallel pressure of conforming to the mainstream. This category also draws inspiration from the music industry. The second category is labeled *agency and structure*. It cherishes the dynamics between being an actor with a faith in that one’s actions can accomplish a particular outcome (a faith in agency) and being a node in a network held back by inert structures.

**Having an own identity**

In line with arguments and empirical examples presented by Klein (2000; see also Roddick, 2000), an American TV-documentary targeted the way popular music traveled from being an unnoticed underground movement to a global megadollar product. The stereotype example conveyed in a lot of pop artists’ success stories is that of the first struggling years, spent in the garage, playing the small, open-till-morning clubs. After several strained years, the artists finally reach the big scene. This storyline underlies the music industry, as well as many other industries, such as sports. One point with the documentary was that young people often created an underground movement (small clubs, unknown stages, odd hours) with which they could identify. Many bands working underground were a reaction to the mainstream M<sup>TV</sup> acts, to the mega-dollars and to the global corporate-led power-centers. The bands and their fans did not feel at home in the mainstream, so they searched for refuge elsewhere.

One example discussed in the documentary was the American rock band *Limp Bizkit*. This band started under the surface of the market, as an underground cult. The band was aggressive and appealed to many youths reacting to globally oriented consumption-trends in society (more McDonald’s, Nike, Starbucks, M<sup>TV</sup>). These kids wanted their own movements, their own identities, better matching who they were becoming. What then happened was that the music industry’s TNCs (a handful TNCs control 90-95 percent of the music industry) noticed the growing interest among youth. They consequently did what every marketer would do. They bought the rights to the product; repackaged it; and sold it right back to the kids. Do you want Limp Bizkit? Here you go! The band was promoted through radio stations, TV channels, videos, Internet, newspapers, clothes, collector cards, computer games and books. What was underground all of a sudden became mainstream.

As also noted, Tsoukas (1999) suggested new organizational context made these processes more powerful. *Distanciation* and *instanciation* via different media (Giddens, 1991/1997), and youths were accessible to corporate actors on a global arena. The issue here, though, is where the kids seeking refuge from the mainstream should go when their own movement was on M<sup>TV</sup>, asking millions of viewers worldwide to dig the same music and artists. Most likely, they would have
to seek new symbols, ideas and places. Many, however, stayed with the developments and became early adopters of a new global trend.

The point with this story is not that being underground is another right way in contrast to being part of a bigger scheme, or the grand narrative. The point is rather that the tolerance towards having an own identity seemed to be low in this case. Pressures to follow the mainstream were strong. In Hannerz's (1992) way of reasoning, the cultural dumping processes were making their presence felt. In these processes, there are, of course, reactions to the dumping, perhaps resembling the underground movements before they were transformed into corporate commodities. Through reflections on larger trends, through detraditionalization (Giddens, 1991/1997), for instance, there are also reinforcements of group identities and local norms (Hannerz, 1992). This was evident in the Green Guide, which, at least geographically, represents peripheral actors and areas in this study. Some bought into the EMS trend, whereas others were skeptic. Some also felt that they had no choice but to engage in it. They seemed to have reflected on their situation, though, at times arguing that these systems were not made to fit their specific operations. The project managers helped them in the translations and to some degree showed that minor audits were enough. These audits could also be their way of working with an EMS.

The rural and the small versus the urban and the large is but one, and maybe stereotypical, example. There were similar reflections within the large organizations. At Husqvarna, the emphasis on administrative routines and structures met resistance. Concurrent with their growth there was a need for routines, but the firm was not built on routines, a manager argued. At Duni and FMV, the environmental groups reflected on their role in the new organizations. As expressed at Duni, they were unfortunately dependent on bad examples where it should have paid off involving them at the beginning. At FMV, they had to kick and push the projects in front of them, and the new organization had also, as claimed by the Viking manager, created a type of formalism in which you did not feel at home.

In the environmental debate, the environmental activist, and lobbyist as the environmental groups above, is often singled out as a force of resistance. The stereotype holds the activist as being against things without providing "adequate" or "practical" solutions to the matters. The critique has been the main thing and they have therefore become linked to such an identity. Similar lines of arguing have been pursued in the quest for discrediting postmodernists (c.f. Tsoukas, 1992; Alvesson & Sköldberg, 1994; Parker, 1995). Postmodernists are deconstructing, not constructing. They shatter ideas rather than construct them.

Influencing the mainstream, however, wherever it is, is difficult. Finding space to have an own identity is also a struggle. In the environmental debate, Egri & Pinfield (1999, p 219) state that radical environmental reformers, as the most radical category, might have influenced the directions taken on some occasions, but "they have not yet produced either a coherent social movement or a set of proposed social reforms likely to be accepted or adopted by organizational
members in mainstream society”. This, it seems, is an established norm. Unless organizational members in mainstream society accept the radicals’ reforms, they are not accepted. This is a fundamental problem. As part of their identity, managers often stress that their firms are seriously taking own initiatives in their approach to greening. They are proactive. At both Duni and Husqvarna there were statements claiming that they had always considered the environment. Although this might be true, it is for certain that the priorities assigned to the environment in these firms were low compared to other issues, such as product quality and market adaptation. Otherwise we would not have as intense environmental debate as we have at the moment.

The firms are not alone, though. In other words, there is a wider set of actors driving firms towards greening. As also showed in this study, there were individuals and groups within the large organizations that lobbied for greening, but for the greening process to gather momentum, actors outside the organizations’ boundaries are bound to play an important part. The radical reformers, for instance, might have a larger influence on the process than Egri & Pinfield (1999), and some of the reports and respondents in this study, ascribe them. Duni and the SSNC was perhaps the most obvious exception. The underground cults, although seldom exposed in media, might have a particular importance in the development of music worldwide. The environmentalist being perceived as radical by mainstream actors might have a particular influence on the creation of environmental values.

The stereotype view of the radical reformer and the postmodernist carries seeds of truth of course. It is a standpoint, but it is a typically modernistic one. It might even be considered a rude and dangerous standpoint. As in this study, all cases, from Per in GreenZone to the project managers at FMV, indicated that their localized knowledge was necessary when developing environmental solutions in their particular context. They were not one in the same. This is one of the basic points in Wynne’s (1996) chapter on the Cumbrian sheep farmers. Localized, and even what is considered as lay knowledge plays an important part. A representative epistemology has its limits. This is, however, to some extent choked when global standards are implemented, even though some actors implementing them argue that they have reflected and concluded that this particular standard suits them. At FMV, for instance, they were convinced that this way. There are still tensions in these processes, though. The main impression from the three large organizations was that they had assigned the standards a particular importance, as discussed earlier in this chapter. But as explicitly noted in the Green Guide project, there is in the process a pressure to conform to a mainstream approach to greening. FMV strived towards being allowed to demand an EMS from their suppliers. The question is whether or not the one in the same standard, in these cases ISO 14001, fits the identities constructed in all organizations.

Focusing on the standardization of greening, Rikhardson & Welford’s (1997) worry about the sedimentation of a particular interpretation is echoed.
Sedimentation might risk reducing the moments of creativity in meeting these issues and thereby limit the range of ways possible when moving towards less environmentally destructive actions. One example of this is the laundry detergent industry in Sweden. Some time ago, a small firm on the Swedish west coast started to develop less environmentally destructive detergents. They also began eco-labeling their products. They had their niche. Once the market for eco-labeled detergent was large enough for large-scale actors, however, the large firms in the industry entered the market with their “new” products and quickly gained market shares. The creative agent was the small firm, but in the process it was placed in the periphery.

The positive side of this example was that the environmental impact of using and producing laundry detergents was reduced. The negative side was perhaps that there was little room on the market to differ in environmental approach. Once seized by the large actors on the market, the way to approach greening was decided. The example also showed that there is often the small and flexible actor that manages to wander outside the traditional paths. Large ones tend to be imprisoned by inert cultures and structures. Similar examples are GreenZone, as an innovative project in an industry controlled by less than a handful TNCs, and the East German firm developing the CFC replacement for Electrolux’ industry (c.f. Strannegård, 1998; Sweet, 2000). Another example was encountered at Husqvarna. Their Solar Mower was not developed in-house, but bought from another firm. Husqvarna, through its focus on core competencies, which was also the case at Duni and even at FMV to some extent, limited the capacity of venturing outside the defined borders. Radical solutions, such as the Mowers, were either acquired or, as stated by the vice president of R&D, seized through alliances. The museum tour also indicated this concentration of the firm’s innovative borders, making their identity more pinpoint and less diffuse. This is standard business school material, however, but the downsides of such developments are seldom discussed or reflected upon. Also, being more pinpoint about what the firm does is not a guarantee for a coherent identity of the firm.

The heart of the matter here is that the space for reflexivity seems to be scarce. In the identity construction process, the organizational actors live in the tensions and this requires some degree of reflexivity. But as standardization and specialization increase, there is little of it built into these processes.

**Agency and structure**

Larger and more specialized structures, embraced by new routines and procedures, vouch for inertia. When it comes to matters of identity, this creates a situation where the organizational actors seem to point outside the organization in the process of identifying their own role in greening. If so, Richardson & Welford’s (1997) plea for a fundamental revolution might be a way, but it is just one way of framing it. Another way is to reflect upon the linkages between agency and structure, and to bridge the two (Janssens & Steyaert, 1999; Gergen,
and build-in or institutionalize reflexivity. Bridging is based on an active view of our actions. That is, structures are there, but what put them there are our actions. If a manager perceives the firm as an actor, attributed with little agency, stuck in the system, the structures become hard facts, or objective entities. From such a perspective, change comes about through the rules of the organizational context being changed by an actor outside the firm. This is, however, basically a deterministic view of managers and firms. Instead, Gergen (1999) invites us: construct reality. Per at GreenZone invites us: change the industry and the world.

An active view, a faith in agency, could be a bridge between the organization and the structures, but this is for the utopian voluntarist, the critic argues. Structures, once-and-for-all truths and natural behaviors amount for those tempted by the invitation. And not to forget, large parts of the so-called developed world have it quite well as it is. The incitements for radical change are small.

In this study, there were examples where organizations leaned towards an agency oriented view. GreenZone was perhaps the best one, but the fire in Roger at Sorsele Trä’s arguments for why the conditions of the market had to change, or be more correctly followed, was also an illustrative example. For some of the others, though, such as Husqvarna and Duni, things seemed to be okay as they were. There was little need for change in the environmental area. Change also lay outside their reach. But although a main impression, this is also a bit deceptive. The cases also shifted in their identities. At times they were agency oriented and at other times they had a structural lean. At times they could actively influence structures, such as the legislative ones. At other times the market out-there was not ready. A similar impression is found in Luke’s (2001) FMC case. The firm was placed in the hands of American legislators and SUV customers, who also constituted actors the firm could work actively to influence. The identity of the organization depended on issue and situation. The identity could therefore be referred to as dynamic, or from another perspective, as slippery.

Playing the business rhetoric, of being a profit generator with growth targets and controllable structures, has firms as a similar kind. They are framed in the same category. The Body Shop founder, Anita Roddick (2000), argues that what separates her firm from other firms is their values. Ray Anderson (1998), founder of Interface Inc., echoes this as he attempts to make his firm restorative and thereby separate his firm from not only competitors, but from most other firms on the market. They have taken the chance, it seems, which the environmental movement has presented to them: to reflect upon their role as firms in the overall greening process and to create a unique corporate identity. As environmental issues are complex, political, emotional and a whole lot of other attributes, there are also opportunities to develop an own interpretation, at least to some extent. Anderson and Roddick have listened closely to those presenting resistance to corporate led environmental destruction. These relationships, outside the buyer-supplier model, have been a part in defining their firms’ missions. They too could of course, and have been, under the critical scope, but they are also two examples of the diversity of identities that could be created in a greening process. As the
standardization process evolves, however, the opportunities seem to vanish. The small firms, as well as FMV, for instance, were feeling this pressure to conform. Conforming is, though, easier then resisting and the business rhetoric was a reoccurring aspect in the organizations’ identity construction processes. It appeared in all the cases. Next, in the discussion on matters of worldview, the business emphasis together with other elements, are elaborated upon.

Anthropocentrism and technocentrism

This section is structured into one category, technocentric ways of thinking. Basically, it frames what seemed to be the dominating worldview in the cases, a worldview that is technocentric in orientation and thereby strongly anthropocentric. Ontological matters were not explicitly reflected upon, though. Focus was on an epistemological level, on which the respondents seemed to further a prescriptive and technocratic view on knowledge. There were, however, signs of alternative movements, of movements towards acknowledging other views. From an alternative perspective, all views also included ethico-politico aspects, but the point is still that this was seldom acknowledged in the encounters. In the cases, as well as in the mainstream writings, the tolerance for alternatives was limited to the technocentric borders.

Technocentric ways of thinking

As partly shown in the historical introduction to the theoretical chapter (chapter three), firms during the 1960s and 1970s tended to perceive environmental issues as complicating, unwanted and unnecessary, affecting the business negatively. This view was in the 1980s and 1990s challenged by a more pro-active stance where the environment and its advocates were embraced by industry, a stance Hoffman (1997) refers to as strategic environmentalism. NGOs were framed as partners in alliances (c.f. Stafford et al, 2000) instead of counterparts in emotionally loaded media debates (c.f. Tsoukas, 1999). Borders between the environmental activist and the environmentally destructive actor were thereby blurred (c.f. Fineman, 2001). Everybody wanted a healthy environment and everybody was working towards it. There was no clear opposition. If hammered with being environmentally irresponsible, firms countered with, for instance, eco-labels and EMS certificates. Customer, legislative and other environmental demands were translated into new business opportunities, not threats. They were not a constraint in the firm’s approach to greening. They were win–wins where the firm and the environment were singled out as winners. This, it seems, is the corporate actors’ new way of thinking about greening. GreenZone played according to this view. It thrilled Peder at MGV. It was the basic requirement for dealing with greening at Husqvarna, Duni and FMV.

This way of thinking, however, was, which might be a bit contradictory, from another perspective not apparent in the cases. The point is simple. Many
reports and respondents did stress the need for market orientation and also argued that the market forces had to be played along with in the greening processes. Just as Electrolux in Strannegård’s (1998) study argued that the color of money was green, which was referred to the Green Range products’ contribution to the total profits. This eager to merge ecology and economy was, as stated, evident in the organizations in this study. What makes this way of thinking as not apparent is that there were no equal mergers between the environment and the market. The environment was not ascribed a part in the negotiations, or a moral status, but was perceived as an additional factor, not an actor, that had to be considered in progressing the business. There were no reflections on an ontological level and few signs of movements toward alternative epistemologies. The metaphor should rather be one of acquisition instead of a merger. The economy was the buyer and post-deal, it became the owner. There were no win-wins in this sense. The environment got explored in a new, albeit more environmentally efficient way. Such a view must, however, take for granted the link between economic growth and environmental destruction. But if this link is not identified and trusted, the win-wins are still not win-wins since it would mean that the environment was not a loser in those relationships to begin with.

In the cases, there was also this thing with the environment being more than kicking and testing, an aspect accounted for by some actors. Per’s pedagogical twist to GreenZone; Peder at MGV’s emphasis on the way of thinking; Duni’s symbolical role; and the Visby manager at FMV mentioning the environment being more a mental matter, a matter of education. Greening was, in other words, more than a technological matter. It was also about changing the way of thinking. As argued, however, the new way of thinking was carried out within a worldview characterized by strong anthropocentrism, environmental protection, consumerism, corporatism and technocracy, that is, a technocentric worldview (Dion, 1998). These basic aspects, or to some extent root causes, were taken for granted. It is just as with some of the acclaimed shifts from modernity to post-modernity. The main framework is still there (Murdoch, 1995; Hanseth & Braa, 2000). It is still based on a passive and mechanical approach to the environment. The responsibility is first to corporate finance, not to a sound environment or a healthy community. Greening is considered if it advances the firm’s competitive advantage and if so, based on a similarly mechanic view of the organization, it leads to the implementation of new structures and systems. The main task for management, as framed by Gladwin et al (1995), is to add to the capital stock. Good profitability, as framed by Husqvarna, is a prerequisite for greening. The ontology is dualistic and the epistemology is representative.

The environmental policies encountered in the cases, for instance, (the policy is one of the first steps in the EMS process), were to a large extent rhetorical statements about the organization’s concern for the environment. Husqvarna, through Electrolux, echoed the Brundtland commission’s definition of sustainable development: “Our operations and our products must be integrated in a cycle, so that we can satisfy the needs of our customers without
jeopardizing the prospects for future generations”. For them, this process came down to resource efficiency, recycling, actively distributing information, protection and good profitability in order to afford to develop new environmentally adapted technology. This definition of sustainable development has received its share of criticism, as it does not abandon the basic project of indefinite economic growth, or the dominant social paradigm (Egri & Pinfield, 1999).

At Duni, “High environmental quality is achieved by adapting the business and products to a sustainable society”. Adapting in this case meant conforming to existing legislation and improving resource efficiency when it was technically possible, economically feasible and environmentally sound. This also involved making the environment a natural part of managerial decisions, but as claimed, the environment was not a part of Duni’s culture. Duni was, however, committed to an open attitude, which seemed to have led to new experiences in the firm’s way of viewing environmental issues. The business was basically still the main theme, though. FMV framed their vision as a participator in long-term sustainable development of society. They listed a range of aspects in accomplishing this role: being knowledgeable; considering a life-cycle perspective; placing demands on their suppliers; conforming and contributing to legislation being developed from an environmental perspective; and, by improvements in general. FMV’s statements were the most modest ones, but also the ones that seemed to match what was encountered in practice the most.

Basically, these to some extent polished sentences indicate a business-as-usual view. The acclaimed vision and path towards sustainability is a movement within the technocentric worldview. Many of the corporate critics could still launch the same critique. The bottom-line is economic (individual) gain and the language used to illustrate the win-win view is business oriented. Problems are solved through new technological solutions, which are best left to industry to develop. This view has gained a particular momentum throughout the business community (c.f. Lidskog, 1998) as well as throughout management studies (c.f. Gladwin et al, 1995). Luke (2001, p 320) calls it “one of the latest economic growth ideologies”.

As discussed earlier in this study, there are emphases on embracing concepts such as sustainable development and social responsibility in the greening debate. This as the debate has moved in a direction where the interdependencies between environment, economy and society are acknowledged. There are sometimes talk about the triple bottom line. In this study, this triple is at the most a double, made out of market and technology, framed by the concept of technocentrism. The market is the context in which to act, technology is the area of despair and hope. The problems are linked to old technology and the future lies in new technology. Technology is the business of business, as Hart (1997) stated. New technological solutions are core parts of the engine powering increasing market orientation. There are less polluting chainsaws; scales studies proving short-time use products’ environmental
excellence; lighter vessel bodies; ethanol powered cars; and more. The environment is there, but the quandary is how to integrate it into the other two. It is not perceived as an area to be assigned a similar value as the market, for instance. Such a view cannot be ecocentric or weakly anthropocentric. It still rests on the one, or the double, bottom line. It rests on a technocentric worldview.

**Technocentric approaches**

The organizational actors in this study emphasized technological and market orienting parts of their organizations’ approaches. Movements related to environmental, social, political, ethical and philosophical aspects were scarce and if encountered, they were integrated into the two main parts. In the cases, this resulted in, for instance, efforts to environmentally adapt products and processes, and in implementations of environmental management systems. Greening took place, but the way the matters were dealt with was, within a representative view of knowledge, to implement controllable and cost-efficient recipes. Focus was basically epistemological and did not include deeper reflections on how and why greening was approached in a particular way. Reflections on the ontological level, on the ecocentrism-anthropocentrism continuum to use this study’s terms, were not encountered. This might indicate a limited interest in such connections and tensions. The way greening was approached still carried ontological assumptions, though. It was not free from such matters. In the cases, these assumptions were predominantly grounded in a strongly anthropocentric view.

In order to illustrate one view of the dominating characteristics of the approaches encountered in the cases, the figure below consists of two axes. The horizontal one is the ecocentrism-anthropocentrism continuum (see figure 3.2) and the vertical one targets the basic interest of the approach. As framed below, the technocentric approach is, due to its dualistic ontology, strongly anthropocentric. The technocentric approach also has a predominantly epistemological interest, an interest in packaging and presenting knowledge in a way that explains greening and that provide solutions that are practically possible to implement in furthering the organization’s development. There is little room for ontological reflections:
There are more to the approach than the figure reveals, though. It only frames the dominating impressions and it only travels on a worldview level. Tensions within the approach are not ceased, but the figure indicates where such tensions might arrive from as well as where organizational actors could move to encounter alternative views on their approach to greening. The figure shows where we could go to become more aware of the diversity.

It is, however, at this stage of the analysis, time to explicitly reconnect to the purposes of the study. Are there any answers? What have been accomplished? In the first chapter, three purposes were outlined. Although answers have been joining the text ever since and partly been summarized by the previous figure, the purposes and suggested conclusions are addressed below.

**Characteristics of organizational greening**

With the first purpose in mind, to describe characteristics of organizational approaches to greening, the aim was to contribute to the knowledge gap on how organizations are approaching greening through adopting a more holistic view, especially through framing the approaches from practice to assumptions. This purpose has been accomplished predominantly through chapters five to nine, where the empirically close encounters were accounted for. Each case is in a way, as discussed in chapter four via Boje (2001), a theory of its own. Even though characteristics reappeared between the cases, each case represented an own combination. In chapter ten, a cross-case analysis seized the reappearing impressions as well as the tensions within them. This resulted in main categories and characteristics of the organizations' approaches.

As discussed in this chapter, the basic characteristics originated in a technocentric approach (top right corner of figure 11.2). Albeit a bit simplified, they went from a top-down technocratic practice, where the EMS work and the...
engineer were central, to a technocentric worldview, where greening was incorporated into the business rhetoric. However, as the figure also invites, but does not explore, other characteristics were there as well. A point was, though, that they were not allowed to maneuver in any particular way, but they were there and they contributed to the approach in the end. Even though many green initiatives seemed to be radically green, many were still linked to the bottom-line. They were more about incremental, within-the-view changes and did not lead to immediate revisions of or reflections on any root causes (more on this in the next chapter). Slow movements are also movements, though. These movements together with the tensions housed by each case might result in more encompassing (root cause focused) changes, albeit in the long run.

The conceptual base on organizational greening

The second aim was to contribute to the conceptual base on theories on organizational greening. It was argued that the existing base was technocratic in orientation and that this might restrict movements to other corners of greening. Answering this purpose was mainly done in this chapter, chapter eleven, where the categories from the cross-case analysis were merged with the conceptual framework from chapter three. In this study then, the technocratic dominance has been illustrated through the use of concepts, such as greengineer (engineers and engineering perspectives dominated the handling of organizational greening), standardization (as predominantly in the EMS trend and the structuring of development processes), specialization (specific environmental managers/groups were assigned the task of greening and the technical bias on the knowledge required for greening), technocratic practice (all of the above), the objectified market (it was out-there, disconnected from organizational influence), regulatory environmentalism (the focus on legislators as green stakeholders), the customer as the benchmark (as in the flexible use of the customer as a decider of level of greening) and technocentric ways of thinking (the dominant worldview). They are per se not new concepts. The context in which they have been discussed, however, has them as contributing to the furthering of alternative viewpoints, as in a quest for the unoccupied spaces in figure 11.2, and not to the dominating approach. In other words, the majority of the concepts point at actual and potential problems with technocentrism.

To illustrate what might be neglected by the technocratic conceptual focus, there were hints of reflexivity, participation and transparency in the approaches, on widening the concepts and perspectives to include social, ethical, political and philosophical movements as well. Reflexivity emphasized the becoming and unwritten character of organizational greening. The tendency to keep within a stable system view has greening, as well as organizations per se, as possible to rationally control and predict. The use of the Medicine Wheel aimed to show that there are different views and that truth is a particularly difficult concept. It is a moving target and there are a lot of actors involved in these movements.
Participation meant that greening many times is treated within a traditional stakeholder model, but that the nature of environmental issues, as in consequences of an industrial project, is often a matter for a wider range of actors and rationalities. It demands a wider view of who should participate. Such a view was not a main impression from the cases, though. Transparency, along the same lines as reflexivity and participation, meant that organizational decision processes on environmental matters, as environmental consequences are not only local and tangible but also global and abstract, have to be made more visible and open for those actually and potentially affected. Closed doors do not seem to be a way to go. This side of the conceptual focus, going beyond technocentrism, is, however, not fully addressed. We are not done yet, bringing us to the third purpose.

End of story?

The third purpose, to open up for reflexive dialogues through discussing alternative organizational approaches on greening, has been a theme throughout this study, predominantly through chapter two and three, but also in the analysis. This stance holds that more perspectives are needed in order to make the diversity of greening visible in organizational life. With the previous figure as one version of this study’s conclusions, there is a bias towards technocentrism. Keeping the dialogue on greening alive is not done through a one-sided focus. A reflexive dialogue demands ecocentric and ontological movements as well. The analysis so far has also been more focused on describing how things were in the cases and the theories. It has not in any particular way addressed the issue of how we could move organizational greening forward, that is, the modernist’s question to the postmodernist of what then (see Parker, 1992; Egri & Pinfield, 1999). Purpose three, as well as purpose two to some extent, is therefore partly unanswered.

There are, as noted, nevertheless conclusions to be drawn already at this point. The environmental aspects considered in the firms’ development processes were not at all part of a major change process. They were rather part of an incremental change process, embraced by the modern emphases on playing the market and on developing the technology. Such incrementalism (slow movements) may, however, be a sound strategy considering the complexity inherent in organizational greening processes, as well as in environmental issues per se. A more thorough or radical changeover might backfire, as the environmental debates so often do. They come on too strong and people react by pulling away. But a social scientist’s task is also to portray and suggest alternatives. We have to go both deeper and wider, or vertically and horizontally as in figure 11.2, in search for alternative approaches. Czarniawska (1999, p 8) suggests that: "As theoreticians, we should be telling practitioners about what they could never come to think of themselves, and not about what they know already and better". Hopefully this has to some extent already been accomplished, but as Czarniawska (1999, p 9) further claims:
In the specific case of organization theory, the task of the researcher, as I see it, is to free practitioners from the 'iron cage' – from the trap that the world they have constructed for themselves has become for them. By convincing them that it does not exist 'out there' objectively and immutably, but that it is constructed by people in a joint effort, the researcher can also persuade them that other constructions are possible.

In this study, this particular task is translated into a chapter where an alternative approach is pursued. Although technocentrism was evident in the cases, it was not all there was to them. They all carried seeds for alternative approaches, for ways out. One of them is explored next.
Beyond technocentrism

In this chapter, the technocentric approach is trespassed in an effort to construct reflexive dialogues on greening. This is predominantly accomplished through moving towards increased ontological awareness. One path, seen from two viewpoints, is explored. The chapter also touches on managerial implications as well as recommendations for future studies.

Introduction

Technocentric approaches come in the guise of modernism, or post-modernism, as in the new period after the modern (c.f. Parker, 1992; Tsoukas, 1992; Chia, 1995). They carry a habit of narrowing perspectives, of homogenizing ways of thinking. They are, as expressed by Burns & Stalker (1961), continuously drifting toward mechanism. A technocentric approach could also be compared to the traits of the positivistic researcher. Things are out-there to be molded and measured. Scientific findings are truths and the expert’s language is undisputable. Progress means discovering ways to improve our instruments. We just have to find these ways. Our instruments are also the means with which we search. To borrow Gabriel’s (2000, p 4) words in framing this study on greening, positivists out-power storytellers.

With the ongoing transformations in society, such as the information technology development and the environmental movement, we are at times reminded on the fluidity of (con)temporary truths (Giddens, 1991/1997; Beck, 1992). A question is what characteristics are emerging in such processes. One aspect seems to be an ability to reflect upon things taken for granted, to take the task of occupying at least one new perspective in order to create a closer understanding of the subject matter. It is about an ability to keep the dialogue alive (Janssens & Steyaert, 1999), aiming to see matters through another network of actors/actants (Latour, 1999), in order to handle the transformations and to counterwork inertia in dealing with them. Such an ambition has in this study been framed as a postmodern trait. The postmodern traveler equips herself to speak more then one language, although not only to be taken literary (c.f. Parker, 1992). As Chia (1995) pointed out, this is not only an epistemological venture, but it is also about exploring ontological connections in these movements. This traveler seems, however, to be granted a limited space in the organizations encountered in this study.

The existence of a homogenized language and a dominant approach, which is a main impression from the empirical encounters, is reason enough to look beyond it. Strivings toward unity and cosmos left little space for chaos and diversity. There was no balance, few linkages, little trespassing, few meetings across the lines, but then again, who would dare to go? Probably not the established actor in the well-established network. So, the pendulum again swings in the modernistic direction.

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Through a more general perspective on industry as such, greening originated in an environmental movement where critics were easily identified (c.f. Jamison, 1996). Fierce activism and other measures brought the environment onto the corporate agenda. Once there, in Welford’s (1997) view, they were hijacked and suffocated by TNCs. The borders between critics and polluters have been blurred, though, despite the fact that there are more critics as well as more firms out-there. Firms are also increasing their environmental impact as global population continues to grow and thereby, perhaps more important, so also the global market and production apparatus. A large share of the earlier neglected markets in the so-called third world, although not neglected when it comes to extracting resources to produce for the so-called developed world, is also demanding similar levels of material wealth as the developed world has lived with for quite some time. They are not only locations for cheap production anymore, but also evolving markets. Still, following the modern project’s traits, TNCs and many other firms argue that they are much wiser today compared to earlier. Greening is in safe hands, even if their operations grow greater and more global. Growth is also, in the business line of arguing, a precondition for the environment and the welfare being protected.

As shown in this study, the way to approach greening resembles to some extent the faith of Limp Bizkit. Once the environmental movement became large enough, the corporate community took over the charge. They promoted a mainstream product in the ISO 14001 and became certified as environmentally considerate. Small, large, local, multinational, producing and service-providing organizations in this study worked with the standard. This study might be a limited sample for such a claim, but reviewing the literature as well as the increase in numbers of new certificates (ISO World, 2002), the system is spreading like a wildfire. But this fire is at the same time not so wild, as it from one perspective is controlled by industry. In contrast to the EU controlled EMAS, ISO 14001 plays more in the hands of the corporate community. Just as in the music industry, however, there are those who still provide resistance and reflection. Some of them also have ISO 14001 certificates. A reason for these firms’ resistance is that this might not be the way for their particular organizations to approach greening. They are often caught in the middle, though. They live with and reproduce how an organization should approach greening (the technocentric way), but they also have own green demands and desires as parts of their identity construction projects (Giddens, 1991/1997).

Environmental issues are also acclaimed to generate emotions and uncertainty due to their complex, value-loaded and cross-sectorial linkages. For them to be approached, a tolerance towards their becoming character must be allowed to exist. Things are moving. This is why continuous reflexive dialogues on the standardization processes in general in organizational greening are crucial. We do not know about the environmental consequences of a particular process or substance until, in some instances, several decades later, if ever. As an example, we continuously find dioxins never encountered before. Our chances of
finding out more about those, and about why such substances are, or were, needed in the first place, would increase if more viewpoints were invited and allowed to address the matter in time. It seems as if this is not the common case. Environmental NGOs, some small firms and even some TNCs, are reacting to this. They try to launch different views on the matters, allowing for heterogeneous approaches to meet and mix on the path towards reducing human-led environmental destruction. Despite Jones' (1998) claim on unitarism, The Body Shop is an interesting example of a TNC working towards sustainability. For them, the existence of these reflections seems obvious, even though they have both ambitions and problems trying to institutionalize it. Roddick (2000, 274) asks: "how do you impose structure on creative chaos?" How to impose this, or to begin with, to allow this, is perhaps the burning issue for both the manager and scholar targeting organizational greening. How do we institutionalize movements that continuously make us more aware, as well as more tolerant, of the diversity?

Environmental issues spark diversity and speak against homogeneity. Why work against this? The environmental crisis spark underground, grassroots or bottom-up movements in order to deal with its complexity (Beck, 1992; Wynne, 1996). Why not acknowledge these movements? One reason for the modest ambitions is the sizes of our modern ventures. There are usually larger and larger projects, higher and higher towers, more complex and interdependent infrastructures. The Electrolux Group employs several hundred thousand and manages several large subsidiaries, such as Husqvarna. Duni is growing and preparing for the stock market. FMV develops products where one particular vessel might result in over a billion EURO in procurement. Large ventures mean larger risks, financially, socially and environmentally (c.f. Danielsson & Holmberg, 2002). Recalling the relation between control and risks (Hanseth & Braa, 2000), small is beautiful (Schumacher, 1973/1988), but big usually comes out on top, whether it is a standardized chainsaw model, a new ship or a new EMS standard.

The size of the operation also has a particular influence on the approach adopted, even if traditional size also could be sidelined in environmental disputes (Tsoukas, 1999). In other words, small firms are links in supply chains, but larger firms usually guide these chains. The Green Guide firms felt the pressure, as some of them were the last, or rather the first, actor in the chain. The Body Shop, as the main link in their chain, also controls its supply chain, forcing suppliers to conduct ethical, social and environmental audits (Wycherley, 1999; Roddick, 2000). Although this might be perceived as praiseworthy efforts, encouraging suppliers to reflect upon their role in the local and global communities, it is still a matter of a top-down process. It might even be a dialogue, but it does not guarantee bottom-up driven reflections where the suppliers are drawing on their specific knowledge and culture to reduce their environmental strain. The pressure to conform to another actor’s approach becomes strong.
Connected to how we view greening in the research community, Schwartz & Wolff (1989) stated that social science aspects of greening were close to disregarded until about the time of their report. When preparing a conference paper on Swedish green management research (Sandström, 1999b), I searched for ongoing research projects in the area. Sweden's largest financier in this area was MISTRA. An overview of the projects MISTRA financed in 1998 showed that out of a total 79 projects, 8 belonged to the social sciences (MISTRA, 1999). A handful of them explicitly dealt with organizations and their change processes. The technocentric emphasis encountered in the firms in this study was similar to the situation in the Swedish research community (MISTRA was at the time of this study aiming for the social sciences).

In the international research community, organizational greening became somewhat of a legitimized topic in 1995 when the Academy of Management Review published a special issue on the environment. Many frequently quoted articles are also from the early and mid 1990s (c.f. Dobers et al, 2001). Studying such articles and books, however, there is a particular emphasis on technocentrism in their approaches. Although environmental and social issues have received a lot of attention during the last decade, there is still a one bottom-line, not a triple one.

Basically, the argument here is that in order for reflexive dialogues to be constructed, there is a need for more ontological awareness, embracing the postmodernist's faith in a becoming reality, and thereby a becoming greening process. As noted in the outset, though, several acclaimed postmodernist accounts are actually quite modernistic (Hacking, 1999). Scholars claim ecocentrism, but are still stuck with a strongly anthropocentric ontology. They use concepts pointing at the need for deeper reflections, at the need for revising ontological connections in dealing with greening, but they direct their attention to incremental issues on an often very practical level. Such approaches are valuable contributions to organizational greening, but they are limited to a worldview that has been singled out as a root cause to modern environmental destruction. Movements do not occur on all levels. They mainly target the development of prescriptive knowledge.

There is, however, no interest here to completely replace such a worldview, a paradigm shift it might have been labeled. Technocentrism is satisfying our needs too, but business and technology alone, based on a dualistic ontology and a representative epistemology, do not result in a sustainable development. It is not as simple. As presented in figure 11.2, we are limited in our movements, indicating a low tolerance for and a low interest in exploring other approaches. Instead, approaches driven by less anthropocentric visions and more ontological awareness take as their task to open up the possibilities to deepen and widen our understanding of greening. Using the simplified metaphor of a wheel, it is probably a less destructive wheel if the number of spokes is increased and if the hub is made out of reflexivity.

On this topic, some might argue that business and technology are for firms to take care of, while social, political and philosophical aspects are better left to
activists, politicians and academics (as business students often say, as lecturers, we do not work in the real world). As shown in this study, though, scholars and managers are not apolitical or separated from what is going on outside and inside their often narrow view of the market. They are embedded in a much more diverse context. Events, such as Brent Spar, Dáva and others, also show that the technocentric approach has difficulties dealing with the dynamics of greening.

The following figure is a further use of figure 11.2. Technocentrism is still situated in the top right corner and there are movements within this corner, but the emphasis is on within. There are few efforts to cast the dominant approach under a different light. Some versions of sociocentrism and politicocentrism (as in chapter three) could even be positioned in the same place as technocentrism, as they predominantly represent an interest in constructing new recipes for greening based on strong anthropocentrism. That is, the difference between them is their different ideas on how to practically solve the problems, while the ontology remains the same, untouched. Indicating the power of the dominating worldview, this study could also be seen as failing to move towards less anthropocentrism and ontological awareness. As stated in chapter two, scholarship tends to be guarded by what senior scholars have recognized as central achievements (the literary infrastructure), making ontological leaps a bit difficult. Certain scientific perspectives are judged as legitimate while others are not. This study is nevertheless an effort. It points at the limits of our dominating approach and suggests a way out.

Reconnecting to the categorization of approaches conducted in chapter three, the main sociocentric approach was framed as having an interest in showing how the taken for granted becomes taken for granted. This means that such an approach is concerned about ontological connections to everyday practices, moving vertically downwards in the figure. The base is still anthropocentric, however, as the nature-society divide is not challenged. The world is socially constructed (Berger & Luckmann, 1966). The most radical version of the politicocentric approach, in the introductory chapter framed as deep ecologists, would in the figure move diagonally downwards toward the corner of ecocentrism and ontology. Their values are ecocentric and they have a particular interest for the ontological divide between nature and society, a divide leading to non-harmonious and oppressing relationships. The main politicocentric approach would, though, move in a similar direction as the deep ecologists, but not as far. It would be fair to state that the approaches discussed in this study would still be situated within the boundaries of the top right corner. They are anthropocentric and carry a predominant interest in epistemology. This indicates the limited worldview movements of organizational greening. Radical reformers, as in the critique forwarded by Gladwin et al (1995) on the ecocentric paradigm and by Egri & Pinfield (1999) on the radical reform environmentalists, for instance, are also accused for their limited movements. They are, in these cases, criticized for not moving toward the top left corner. That is, moving toward ecocentric values, but with a representative view on epistemology,
providing packaged and presentable practical solutions to how their radical views could be implemented in practice. The issue is the efficiency of the radicals’ critique as they are not able to provide working solutions to the problems. Criticizing radicals for this, however, indicates that those launching the critique have a faith in such a type of knowledge being possible as well as necessary for greening to develop.

One step encouraging reflexive dialogues on the ways, and the assumptions underlying these ways, we approach greening is, however, to identify potential paths toward increased awareness, as well as to point at the necessity of continuous movements. The figure below aims at this, as was also the case of the constructionist research philosophy developed in chapter two and the more reflexive approach developed in chapter three. In searching for ways out, the figure has the circle from chapter two (figure 2.3) as the background. It constitutes another dimension, serving as a reminder of that one perspective on greening is but one perspective and that there is a multitude of them together constructing reality. For us to create a better understanding, there is a need for continuous movements in order to occupy yet another viewpoint. The alternative explored in this chapter aims to move along the path of the three arrows, mainly towards ontological awareness and a weaker link to anthropocentrism. It is, as stated, though, questionable if this is accomplished. The creation of a reflexive dialogue, which is the purpose, is still to some extent bound to take place within the top right corner, without crossing the lines to ecocentrism and ontology:

![Figure 12.1: Movements beyond technocentrism](image)

Technocentrism is a particular part of organizational greening and in order to shed light on its limits, movements out of this approach are necessary. This also demands a continuous focus on the approach as such, that is, to still link practice with assumptions. Figures 11.2 and 12.1 have a worldview focus, which is why some sociocentric and politocentric approaches could be considered similar. In
other words, there are characteristics in the foliage that separate them even though the trunk often is the same. We move and we reflect, but often in a familiar place. This study is no exception.

Sources of inspiration for the alternative approach are found in the theoretical frame of reference, but also in the empirical encounters in this study. Seeds for such movements could be drawn from each case and they have been riding with the text ever since the within-case analyses. The cases mainly inspired movements on a practical level, but they could also be linked to the worldview level. Some of the striking points are GreenZone’s integration of nonhumans and the ideas on a more proactive and responsible business; the Green Guide’s context, which per se was “questioning”, contrasting the urban and large firm mainstream approach; and, Duni’s less technocentric reality when targeted as a symbolic actor in the greening process, leading to discussions on the fluidness of greening (next issue: mad-cows) as well as on corporate transparency (openness does not hurt). In the Green Guide, at Husqvarna, Duni and FMV, there were also a focus on merging environmental management with other areas, such as safety, health and quality. At times, this indicated that the issues were embedded in the same settlement as well as something for the whole organization to approach, not only for a specific department or group of people. They had to be considered through a less particularistic view.

This chapter does not cherish and explore all of these examples, but is rather focused on constructing an alternative, a way out, seen from two different viewpoints. This emerging alternative does not compensate the lack of approaches, but it is one suggestion on how to move ahead with the debate on greening, on how the keep the dialogue alive (Janssens & Steyaert, 1999), on how to construct a transformative dialogue (Gergen, 1999, pp. 154-164). The third purpose of this study is therefore explicitly answered. The second purpose is also contributed to in terms of the concepts explored in this chapter. The definitions we use are important in constructing the dominating approach as well as the alternatives.

The alternative is framed through emphasizing the organizational context and the individual’s needs, and thereby the tensions in which this way out is constructed. A symbolic agora questions the taken for granted technocentric view of the market and opens the context for the reflexive dialogues to take place. Symbolic is used to contrast economic, as well as to point at the argumentative and diverse character of the agora. Satisfiers in organizational greening target the limits of the representative, or standardizing, view on human needs promoted in the technocentric approach. It takes a worldview-based stance, pointing at the diversity of actors on the agora. It also ponders the question of whether it is possible to be more eco-sensitive (Hanson, 1996) and more satisfied (it is of course), a path some firms have begun identifying. In terms explored further on, the alternative frames organizations as acknowledging and living with the tensions in greening instead of being framed as agoraphobic producers of materialistically dependent satisfiers. Living with the tensions also means that
three is a natural place for reflexive dialogues to be constructed. The emergence of the alternative is summarized below:

![Diagram](image.png)

**A symbolic agora**

The technocentric view of the organizational context is, under the light of environmentalism, drifting towards a symbolic agora, towards a public and open space in which individuals and organizations meet to argue and trade (c.f. Beck, 1992; Beck et al, 1994). So far in this study, Tsoukas’ (1999) account of the Brent Spar controversy and the brief review of the Däva heat station (Sandström, 2001a) frame this idea to some extent. This discussion sets off by reviewing some empirical examples of the viewpoint. It closes with a theoretical connection and a tentative model, requiring further studies.

**Empirical connections**

Duni’s products were linked to a consumer mentality. As such, the symbolic value assigned to the plastic cup thrown in the trash, or on the ski-track, was high compared to the actual environmental impact of the product, at least according to Duni. This did not matter, the SSNC claimed through the words of the vice president of R&D and Environmental Affairs. Duni was still targeted. They were a symbolic actor, representing a way of life not consistent with sustainability according to the SSNC. The agora on which they were acting did not predominantly consider the technical data on environmental impact that Duni was transmitting in a strict and rational way. Other aspects such as the patterns of consumer action, as well as other actors such as the SSNC, were mixed in the process. The agora housed a more diverse set of evaluation criteria. At Duni, this was dealt with through, among other things, two strategies. One was to continue to emphasize the scale studies. The other, as the scale studies showed that they were not worse than reusables, was to adopt an open attitude in the environmental work. They could, however, not proactively put things out-there.
as their legitimacy regarding environmental issues seemed to be low (short-time use products, consumer mentality), but they could be open to those interested in finding out about the products’ environmental impact. What might be considered a dilemma for Duni, though, was their continuous focus on technocratic counter-examples. Duni did not seem to develop their stance in a way that might have enabled them to actively put things out-there.

In some of the other cases, there were also signs of a symbolic agora. In GreenZone, Per and his team had seized the links between environmental destruction and a pressure to do something about their operations’ role in greening. But it seems as if they had started building legitimacy ahead of the environmental pressure, that is, they jumped ahead of a pressure that they were convinced would appear in the near future. This gave them some slack perhaps, but it also meant that they added to the momentum in the creation of a symbolic agora due to their emphasis on the need for their industry to embark more seriously on greening. They might, in other words, have speeded the greening of the industry up. For FMV, the case was similar to some extent. They did not face a fierce pressure to motivate their environmental impact, but did so anyway. One of my favorite lines from the FMV reports is the one on the Armed Forces’ annual release of 180 tons of lead into the environment. That was an example of openness. Perhaps FMV could afford this, as they did not fear the agora. Their openness might even become something to be expected from firms dealing with FMV. It might be contagious. For Husqvarna, they predominantly constructed a technocentric view of the context. The fiercest pressure, if relying on their accounts, was the legislator. But these processes were not played in a public open space.

Another example, albeit outside the empirical parts of this study, is the Swedish-Swiss firm Asea Brown Boveri (ABB). ABB is a TNC with encompassing programs on how to be ethically, socially and environmentally responsible (c.f. ABB, 2002). The reach and dept of their responsibility were, however, questioned during an intense debate on their involvement in the construction of a dam on Borneo, the Bakun dam, in the mid and late 1990s (c.f. Tomorrow, 1997). The project aimed at providing a growing urban population with electricity and would result in about 2.000 new Swedish jobs. It also meant cutting down 70.000 hectares of rainforest; risking immediate eradication of 12 animal species; removing the habitats of an additional 70 species, all protected by Malaysian law; making approximately 10.000 inhabitants move and find new ways of making a living; and more. The firm’s involvement was basically explained by the argument that if they did not take on the assignment, some other firm would. Another firm would not be as responsible and reliable as ABB. This argument did not hold on a symbolic agora. The closed door processes of the dominant technocentric approach were revised mainly through the involvement of academics, the general public and media, making it a public event (the debate even had effects on parts of the academic elite in Sweden). The Bakun-example shows how a seemingly business-focused decision process got reconstructed.
when a more diverse set of actors and rationalities participated in the process. Perceiving this example as played on a symbolic agora makes these meetings and dialogues natural, but in the technocentric view, they would represent a disturbing mix of business, politics and emotions.

In the theoretical chapter, The Body Shop was singled out as a spearhead in the greening of industry. However, the firm is not an example of an actor being asked to consider environmental issues. It is rather a firm, partly in line with the GreenZone project, constructing an agora where they together with other actors encourage self-reflexivity, communication of values and to stand up for something. Roddick (2000, p 16) calls for a moral leadership in industry: “Public accountability is an important criterion by which presidents, prime ministers, bureaucrats and politicians are judged, so why not the CEOs of huge corporations as well?” She further calls for interference of business and politics, which is a trait of a symbolic agora. All actors on the agora are political. But in trying to create such an agora, there are also risks of being overruled by those preferring the technocentric mindset: “Concern for the environment, a refusal to test ingredients on animals and as a result a determination to pursue community trade proved to be enormous handicaps in the USA” (Roddick, 2000, p 143).

Still, The Body Shop even attacks other firms they feel should widen their views of their stakeholders, as well as increase their responsibility for their operations. They push other firms onto an agora. Shell was targeted in their affairs in Nigeria, as well as Unocal and Total in Burma. The Body Shop has on numerous occasions been teaming up with environmental NGOs to drive campaigns. This, a skeptic could argue, is because it will give the firm a better image and thereby enable their sales to increase. In response, Roddick argues that they are pushing to create a symbolic agora (although she does not use these words) since she knows that no one will offer them any competition in such a place (although not place in a materialistic sense). This might not always benefit the economic bottom line, Roddick (2000, p 170) states, but it “give us an identity that is recognizable”.

**Legitimacy through participation, self-reflexivity and transparency**

Viewing the organizational context as a symbolic agora, partly created by environmental movements, opens a space for reflexive dialogues to be constructed. It also centralizes the organizational task of actively building credibility and legitimacy. Traditional financial strengths through size and technocratic arguments developed in expert systems are not taken for granted, but quickly set aside if the particular organization does not manage to enroll and convince a wider set of stakeholders in, for instance, a project being questioned due to its potential or actual (future or instant) environmental destruction. A dilemma is that it seems as if the enrollment processes are carried out within a cost-benefit mindset. On an agora, fallacies and downsides of the technocentric view are made visible. The existence of rationalities, emotions and values of
business activity is acknowledged through reflections going deeper than the epistemological and practical levels. As this is embraced, there are opportunities for reflexive dialogues on the counterparts' worldviews, identities and practices, as well as on the own approach. Hindering such dialogues would hinder organizational learning.

To be trusted on an agora, organizational actors therefore have to listen to and communicate with diversity of actors anxious about, or in other ways interested in, the environmental consequences of a particular activity. In this sense, there is a need for openness. Such approaches are in practice about transparency and about letting those affected by the firm's activities in on the construction of the knowledge used in the decision-making processes. It is about inviting potentially affected parties to participate. Such approaches are also more ethical (ethicocentric if you like). They do not, however, seem to be common in organizational greening.

But some firms are forced to account for their operations, albeit often at a time when it is too late. Others jump at the possibility ahead of a potential pressure from other actors. Firms, as examples in this study conclude, predominately approach greening in technocentric ways (ways of solving matters, ways of thinking). The alternative view advocated here rather holds greening as a matter of business through more open doors, as decided in relations with a wider range of actors (media, academia, local communities, politicians, NGOs, employees and others). Firms, under such light, have to house and allow a capacity to speak several languages as well as to reflect upon the assumptions furthered through claiming to the business rhetoric. Greening concerns not just the narrow corporate stakeholder view (owners, customers, legislators). Local communities in which the firm conducts its business, for instance, as well as the distanced communities that are affected by the firm's environmental destructive activities, are other ethical stakeholders in the process. Distances are also, as outlined by Giddens (1991/1997) and Beck (1992), not limited to physical distances. Information about firms' operations could instantly reach a mass audience, especially when organizations monitoring corporate action have developed their multimedia competence and global networks. Greenpeace is one example of such an organization (Jamison, 1996; Beck, 1999).

All too often, powerful actors (in the technocentric approach) neglect less powerful actors. The large firm out-powers the small subcontractor and the TNC out-powers the local community in which it produces. In contemporary times, however, a single journalist, employee, activist or manager could turn a project around. In a sense, this makes organizational activities fragile, but it also becomes more difficult for organizations to act unethically. This also means that managers and other representatives have to remain self-reflexive about how and what they decide. The organizations have to aim for a built-in reflexivity, or as Gergen (1999) labels it, keep to the promise of polyvocality in order for them to handle controversies or complex processes in general. People, Gergen (1999, p 162) assumes, already house this capacity:
Thus, in self-questioning, we relinquish the ‘stand fast and firm’ posture of conflict, and open possibilities for other conversations to take place. Such self-reflection is made possible by the fact that we are polyvocal. We participate in multiple relationships – in the community, on the job, at leisure, vicariously with television figures – and we carry with us myriad traces of these relationships. In effect we can speak with many voices.

There is more on the individual in the next viewpoint, but a sticking point here is that corporate actions are influenced by a pressure to conform to the business rhetoric, or mindset, leaving little space for taking advantage of this polyvocality. Organizations are in a sense agoraphobic, aiming to reduce uncertainty and to control contingencies rather than embracing a becoming reality. This makes the construction of reflexive dialogues more difficult.

To summarize the idea of perceiving the context as a symbolic agora, a tentative model is suggested (figure 12.3). On the two axes, the pressure to account for the organization’s environmentally destructive actions (environmental pressure) is matched against the legitimacy created in the interactions with stakeholders on this more public and open agora. The ideal positions in the model are allocated to the right of the dotted line, where legitimacy is higher than the environmental pressure. Below, the cases in this study are marked in order to show one interpretation of the model:

![Figure 12.3: Legitimacy on a symbolic agora](image)

With such a view on the context, as touched upon earlier, a burning issue for the manager and the scholar targeting greening is how to allow for these reflexive dialogues to continuously evolve in order to deal with the environmental pressure, while keeping some sense of collective direction and structure. In other words, how is reflexivity institutionalized in organizational greening processes? Roddick (2000, 274) asked this question and she also tried to answer it: “That is
the secret I have yet to discover. Maybe it can’t be done. Maybe what you set up is a series of little companies alongside the big company so you have breathing space to see whether they evolve into something.” There is again a reference to size, as she seems to be skeptical about succeeding in the large organization. The small and flexible unit could perhaps shoulder the reflexive traits and tasks demanded on a symbolic agora. This is a classical approach in organizational innovation theory. Isolate the innovation process from the inert and tradition-bound organizational line, and great things could happen. This is also a common case when new products enter the market. As shown by Sweet (2000) and Strannegård (1998), linked to Electrolux, a small manufacturer outside the core of the industry developed the CFC replacement. The small firm on the Swedish west coast, developing eco-labeled laundry detergents, referred to earlier, is another example.

Assigning such actors the role of thinking outside the existing organizational boundaries is a limited approach. It is also a contradiction as the demands in the supply chain to a large extent are still about conformance to a large organization’s ultimatums. This was experienced both from the large and the small organizations’ perspectives in this study. That is, if the small actors are not allowed this flexibility, or space for setting up reflexive dialogues, what is the point of organizing them? A conclusion is rather that reflexivity should not be perceived as a task for another actor as this would again point at the tendency to allocate responsibility elsewhere, outside their domain, keeping within the well-known boundaries. Reflexive dialogues should be grounded right-here in individual and organizational relations. Perhaps this is dealt with through a focus on a different view on size, but this would most likely go against the whole business rhetoric.

One idea on dealing with this issue falls back on the greengineer point made earlier. As MISTRA managed to endorse, technocentric perspectives are dominating the scene. An idea for the interested manager and scholar would be to strive towards a greater diversity of backgrounds among those working with or studying greening. Cross-disciplinary organizing, which was one of the purposes with the reorganization processes in the large organizations encountered in this study, should in other words be taken more seriously (c.f. Sandström, 2001c). The opportunities for polyvocality and reflexive dialogues, as well as ontological awareness, might thereby increase. The organizations might thereby be better equipped to act in a context where environmental destruction constitutes a core issue. There seems, though, to be scarce interest for such an idea in times of specialization and rationalization, but MISTRA is one actor beginning to work along these lines. It might be a start.

Another idea is based on an already existing phenomenon. It is a scholarly task of following the process of openness or of firms deciding to emphasize openness in their approaches to greening. Openness endorses reflexive dialogues. Duni tried it to some extent and it was not so dangerous, the environmental manager argued. It even became decent learning opportunities. The questions
are, however: What happens when a firm chooses to be open about something in their greening process they would under normal circumstances keep to themselves? Who are enrolled? Who are lost? What is reflected upon and by whom? This study is too superficial and instantaneous (only snapshots) to thoroughly account for such aspects. In terms of methodology, the actor-network theory’s strive to follow the actors has much to offer such an approach to the study of greening (c.f. Latour, 1999). Such a focus could mean that the often management oriented perspective has to be abandoned to some extent. Green movements, as partly shown in this study, take place where talk is translated into new products, new facilities and new ways of organizing. A too intense management focus might neglect those actually translating the organizations’ environmental work.

**Satisfiers in organizational greening**

Another question is how to illustrate the diversity of viewpoints in organizational greening. What is a symbolic agora made of? It is not objectively out-there, but made out of something. Different views meet, but what is meant by it? This viewpoint originates in the satisfaction of human needs, as in TNS’ fourth systemcondition (reviewed in chapter two) and in Welford’s (2000) Buddhist path (see also Max-Neef, 1992; Korten, 1995). From a technocentric view, humans are seen as fairly simple. In such a view, it is also easy to neglect the purpose of the organization’s operations. In other words, it is easy to mix ends with means, or goals with tools. In this study, the characteristics of organizational greening were more about market orientation then about satisfying needs and about doing so in less environmentally destructive ways. Market and satisfaction do not have to be the odd couple, though, but as the point about the customer rhetoric indicates, it is the corporate strivings for cost-efficient and profit-increasing processes that are prioritized. The profit is the end and the customer is the mean, but the corporate focus could (or should?) be the opposite. A world focused on profits and market shares will grow our monetary economy perhaps, but it might also shadow the well being of customers, and in the long run the well being of citizens and environment. It might shadow individual and cultural diversity.

Pursuing a path where earlier identified characteristics of a more reflexive approach such as participation and transparency are accentuated demands reflections on all levels of the approach. The basic questions raised in this process are: How do we perceive and satisfy human needs? Can we become even more satisfied and greener through altering our views and through changing “inefficient” satisfiers in favor of more “efficient” ones? How does this influence corporate actors and their operations? Does it provide a better understanding of organizational greening? The discussion sets off reviewing how the cases and other empirical examples got this perspective going. It closes with a theoretical discussion.
Empirical connections

A core idea with this viewpoint is to travel towards less anthropocentrism and more ontological awareness (see figure 12.1) through another view on the satisfaction of human needs. The idea is to shift focus from the traditional produce-consume mantra of the market to a more human-centered as well as eco-sensitive viewpoint. The practical aim, which basically is the same for radicals, reformers and dominators of greening, is to satisfy needs with less environmental destruction. Perceived as such, all cases in this study presumably presented examples of this.

GreenZone supplied similar goods and services as any car service block does (fuel, hamburgers, car-service), but they produced them with radically less environmental strain. They reused heat and water; supplied ethanol and ethanol cars; had an environmentally improved carwash; and more. In the Green Guide, MGV made tires out of old tires that served the mainstream driver just as well as virgin tires. Husqvarna kept the same level of performance, but reduced the chainsaws’ emissions through catalysts. With the Solar Mower, the firm also had a potential innovation that could beat the regular lawn mower when it came to doing more with less. The Mower does not demand supervision or fossil fuels. It just eats away as if it was a live sheep mowing the lawn. At Duni, they kept the same or better level of quality while reducing the amount of raw material. The customers got the same, or even more, but for less. At FMV, they came up with new materials that would reduce vessels’ weights and thereby the fossil fuel consumption. All these examples, and there were more, point at the organizations finding ways to satisfy their customers, but in less environmentally destructive ways.

The respondents did not explicitly reflect on potential links to the satisfaction of basic human needs, though. The technocentric traits of focusing on the economic goods (the products) and the structures behind producing them (the product development processes) were mainly addressed in the encounters. There is also a technocratic lean in these examples. Even though they could be seen as good examples, underlying these and similar ones lay a scent of greening as a technologically advanced and market motivated process. Greening in another direction would play on Peder at MGV’s prejudices about an idealistic greening (or as in Latour’s account of the science wars, it would lead us into a primitive and barbaric age). Reflections on the organization’s role in greening rather meant better product development and product quality. It meant positioning the firm closer to the market, but not in the sense of better matching the diversity of customer demand. Standardization was a key to cost-efficient processes and economically vital businesses. Driving this, which seems to be taken for granted by both managers and scholars, are assumptions on a continuous production-consumption trend and a standardized consumer. These aspects are not explicitly reconsidered. It is a technocentric view of the market. The organizational context is not perceived as an agora.
In the environmental debate (this was not a general pattern in the empirical encounters, though), it also seems that when materialistic aspects of greening, as well as of quality of life, are questioned or problematized, accusations of foot-dragging are made. It is difficult to be perceived as both a promoter of better quality of life and greening while simultaneously holding the materialistic focus as problematic. It might be due to our modernistic traits (as in chapter two). We tend to see things in black and white. You either believe in economic growth or you do not. Organizational actors in this study tended to meet any signs of a symbolic agora through arguing that they could fix both. They could consider both the customer and the environment’s needs. They knew how to combat these issues. But as framed in the analyses, this meant market orientation through technocentric driven processes. Such an approach is not unproblematic.

Again, I turn to The Body Shop. Roddick (2000, p 172) ponders how one could add value to her firm when: “No one needs anything we sell”. That is, we are not really dependent on beauty products to survive, but we still consume heaps of them. Our basic needs are in a way separated from these products. Something else makes people buy them. Roddick’s answer comes down to values, but there has to be values in order for values to be added. One of those values is to consider other actors’ values. In other words, to consider other people’s needs and specifically the ways they might want to satisfy them. On both the level of the personnel strategy and the company mission level, Roddick (2000, p 178, 195) states that “there are few motivational forces more potent than giving staff an opportunity to exercise and express their idealism” and that she would rather be judged by how she treated “the weaker and frailer communities I trade with than by how big my profits are”. Two central issues in trespassing the technocentric organizational approach to greening are highlighted here: people’s needs and how they are satisfied. Reflecting on them is at the core of this viewpoint, as well as at the core of showing the diversity of the context in which organizations are developing their approaches.

On satisfaction of human needs

It seems that ‘more is better’ is an inherently frustrating game promoted by the fallacy of confusing quantity of things with quality of life. It turns out that the best things in life are not ‘things.’ In fact, having fewer possessions does not need to deprive us, but can be liberating. (Of course, we already know that, but do we act as if we did?) True fulfilment comes from being with others and contributing to their lives, rather than from taking and withdrawing. (Wackernagel & Rees, 1996, p 136)

This might be easy for a Swede to say, having one of the highest levels of material wealth in the world. Billions do not have decent access to clean water (UNEP, 1999). But this type of thinking has not originated from the so-called developed world. It is not a Swedish phenomenon. It is rather based on thinkers in what the developed world labels the undeveloped world. It has, for instance, been suggested that it originates in a Buddhist type of thinking (c.f. Schumacher,
Having given the economic perspectives and imperatives, such as economic growth and profit maximization, their chance, it is time to allow for other perspectives to co-exist (c.f. Hawken, 1994; Costanza et al, 1997; Söderbaum, 2000). On a symbolic agora, quantity of things and standardization of customers, as well as the economic goods with which they are satisfied, are only some of the aspects of our movements. They are here not taken for granted as means and ends. This does not mean that this viewpoint excludes economic growth, but it is still radically different compared to the technocentric approach. Focus is instead on a more grassroots oriented view on participation (c.f. Korten, 1995; Jones & Welford, 1997; Söderbaum, 2000) as well as on the satisfaction of human needs (Max-Neef, 1992). Such a core aims to indicate the diversity of an agora and the necessity of vertical and horizontal movements (see figure 12.1). One way to approach this matter is suggested by Max-Neef (1992). He singles out nine basic human needs:

Understanding  Protection  Identity
Subsistence  Basic human needs  Participation
Leisure
Freedom  Affection

Figure 12.4: Basic human needs

These needs are characterized by a number of traits (Max-Neef, 1992): They are the same fundamental needs throughout the world; with the exception of subsistence, there is no hierarchy or fixed order between them; they are limited, meaning that when a need is satisfied you cannot satisfy it even more; they are not exchangeable; and, they are classifiable and thereby separated from each other. This results in a somewhat different view on, for instance, poverty. Economic poverty is a yardstick of the technocentric mindset. People need money in their pockets in order to transform their demands into consumption and thereby fuel a healthy, growing economy (as in GDP). But: “It is suggested here that we should speak not of poverty, but of poverties. In fact, any fundamental human need that is not adequately satisfied reveals a human poverty” (Max-Neef, 1992, p 200; see also Roddick, 2000, p 268). This would probably be a more actor-close and less standardized view on the issue of poverty. However, powering environmental destruction, among other things, is a perceived or taken for granted demand for new and more artifacts. This, though, besides satisfying some of our needs, also inhibits our and future generations to meet their needs. Here is where the Brundtland report’s (WCED, 1987) definition of sustainable development is awkward. For them, and for many other
protagonists of sustainable development, this merger between economy and environment is necessary. In this alternative organizational approach, such a combination is not unproblematic as many materialistically dependent goods and services are not efficient in terms of use of resources in relation to degree of needs-satisfaction.

What complicates the satisfaction of needs further is that the ways in which they are satisfied differ between cultures. One *satisfier*, to use Max-Neef's term, might also satisfy one or several needs. Several satisfiers might also be required to satisfy one need. As satisfiers are culturally, and even individually, contingent there is no room for perceiving human needs as physical determinants: "The ways in which we experience our needs, hence the quality of our lives, is, ultimately, subjective. From the neoclassical economists to the monetarists, the notion of preferences is used to avoid the issue of needs" (Max-Neef, 1992; p 203; see also Söderbaum, 2000). As concluded in this study, the technocentric approach to greening carries neoclassical traits. TNCs, as well as other firms, aim to sell their products on a growing global market. These strivings are natural within the business mindset. They might even seem innocent, but there are particular forces of cultural dumping, as in McDonaldization and in Disney's small world after all (Hannerz, 1992). This might fit poorly with being sensitive towards satisfying customers in different cultures' needs, and in doing so in eco-sensitive ways (Hanson, 1996). The standardized products and processes are up against a diverse set of customers and thereby a diverse demand for satisfiers.

Lets take an example. In this study, it is claimed that identity is one part of an organization’s approach to greening. As individuals, we continuously construct our identities in the tensions between our own desires and the institutional pressures. As Ola at Carstedts pointed out, we could belong to quite different groups, indicating the dynamics of our identity construction processes. He worked at Ford and thereby, albeit implicitly, he was a motorist. As such, he had to defend the automobile industry in the face of environmental critique. He was also a member of the field biologists, a group strongly concerned for wildlife in times of environmental destruction. As such, he applied an environmental pressure on firms such as Ford. There are some interesting tensions here, tensions that might spark reflexive dialogues.

The car, as one of the sticking points in Ola's workplace at the time of this study, GreenZone, could probably be related to all needs, dependent upon who you are. You need it to get to work, to flee the city during weekends or to make a statement about who you are. But using the car is bad for the environment. It demands a road infrastructure (use of tarmac, reduction of green areas), continuous supplies of fossil fuels and new car models (more material from the earth crust). The image is that of the car as a quite popular satisfier, but the problem is that it is at the same time quite inefficient due to its encompassing demand for natural resources. What can be done about it? For instance, several traits of the car could be changed without jeopardizing the need-satisfaction for the mainstream user, as in the FFV Focus. It is almost identical to the regular
Focus. It demands a little tighter service interval and there are still few fuel stations supplying ethanol, but other than that, it is similar to the “regular” Focus. The main difference is the fuel used to power it, but that is no small difference. It partly deals with one of the burning issues in the industry, the greenhouse effect. Presumably, many customers do not care whether or not it is ethanol or gasoline in the pump as long as it is available to a decent price at a time when there is a need to fuel the car in order to leave the city, pick up the kids from kindergarten or go on a business trip.

However, the ethanol used to power the FFV still includes 15 percent gasoline. The FFV project also has the car as the way to go. The road to sustainability, as framed in the GreenZone logo. This also demands roads, parking lots and virgin material. As environmentally concerned I can, however, go on using the car feeling a bit better now that it is environmentally “friendly”. It becomes possible to merge being a field biologist with being a motorist. This image might neglect other alternatives, though. Reflecting further, there are carpooling, car-collectives, bicycles, good shoes, public transportation (buses, trains) and, not to forget, no transports (telephone, videoconferences, etc.). These are alternatives that might satisfy similar needs as the car does. Some of these might even lead to greater degree of satisfaction as some are less polluting, more socially targeted, save money, save time, reduce the amount of cars in traffic and thereby the long lines of cars during rush hours as well as the chances for traffic accidents to occur. These alternatives are, however, seldom assigned any particular importance by the automobile industry. This is not so peculiar, but in regard to the environmental pressure on the automobile industry, it is peculiar that the FFV is an exception on the market. New models being launched by manufacturers at the time of this study barely touch on environmental matters. They rather focus on engine power, comfort, joy of driving and safety. The excuse? Customers do not demand green automobiles. Some do, though, and maybe it should also be up to the manufacturers to encourage and initiate reflexive dialogues in order to better deal with the environmental destruction caused when developing and using their products.

On the market, as well as in Westernizing cultures in general, focus seems to be quite intense on such materialistic satisfiers. Welfare is often measured with reference to the quantity of materialistic satisfiers and not to our need-satisfaction. In some areas, car per capita is an indicator of wealth, which in a way is quite logical. You are probably materialistically wealthier the more cars you have. Per definition, you should also be happier (in Bhutan, Gross Domestic Happiness is launched). It is as if we have created a life at the service of artifacts instead of the reverse (Max-Neef, 1992; Korten, 1995; Welford, 2000). Max-Neef shows, however, that it is often the non-materialistic synergetic satisfiers that are the most multiple and effective ones. It is herein the potential of a focus on satisfiers in organizational greening lies. Placing the need in the center might make the process of switching from environmentally destructive satisfiers to less destructive ones a more satisfying journey. As conveyed in the technocentric
approach, though, many of the decisions and the ways they are developing in the process are not up to the individuals whose needs presumably are about to be satisfied. They are framed by preferences. This is just the way things are out-there on the objectified market. They are taken for granted. Diversity is suffocated as few actors have the chance to influence what is going on. Also, the fewer actors that are involved in the process, the more simplifications are needed. The questions asked are, or should be, matters for each group facing the consequences (good and bad) of the activities, but they seldom seem to be invited to construct a reflexive dialogue about how they perceive the matters.

Moving beyond technocentrism

Some firms are beginning to explore dematerialization (Giddens, 1991/1997), which might be a seed for an increased focus on how our needs are satisfied. Volvo's CEO, Leif Johansson, stated at the 10th Greening of Industry Network conference in Gothenburg that they were focusing on providing transportation solutions rather than buses and trucks. People need transports, not specifically buses and trucks. Electrolux has started with so-called functional selling. The idea is that the customer does not own the product. Electrolux does. The customer does not buy the fridge. He or sherents the service. A similar process lies at the core of Ray Anderson's Interface. They have started leasing instead of selling carpet tiles, which makes the control of the product throughout the life-cycle easier, as well as more beneficent in economic terms (Anderson, 1998). A dilemma, though, which seems to be neglected in these processes, is that they still take for granted the necessity of a universal demand for their products, as well as of a growing manufacturing apparatus. These firms are continuously trying to convince us that there is a need for their products, but there is no cross-cultural need labeled "chainsaw" or "Big Mac". There are satisfiers under such names, however, satisfiers pushed by those aiming to make a business out of them. Viewing their products as such, as shown in this study, is not obvious for the firms. They rather tend to be caught in a competitive context filled with predators and preys. The laws of the market become the realities for the firm, a reality handled through finding better recipes.

There is also a prejudice underlying the technocentric approach, holding people with a higher materialistic standard as people with a better quality of life. Combating this dilemma through a focus on less materialistic satisfiers, a technocentric advocate would challenge such a focus and through a representative epistemology call for ways of measuring the presumed need-satisfaction ratio. Even though there are people working on social and psychological indicators of quality of life, the question is whether or not it is possible, or more important, if it is desirable to measure how satisfied you are. Söderbaum (2000), targeting environmental aspects, works with the assumption that we have to realize that some aspects are suitable to measure whereas others are not. This should not, though, be a reason for valuing the measurable before
the un-measurable. Complexity is always there, along with values. Greening is a good example of this. Finding out what would be “efficient” satisfiers (as in as high degree of individual need-satisfaction as possible with as little environmental destruction as possible) have to be grounded among those actors and in those contexts that they will be launched or marketed. Viewing the context as a symbolic agora instead of as a narrowly defined market, and products as satisfiers instead of as needs, makes this more obvious. This view acknowledges diversity and change as natural aspects of greening. It also points at a demand for reflexive dialogues in order to move beyond technocentrism.

Max-Neef (1992, p 198) states that satisfying human needs cannot be a top down process or imposed by regulation: “There is no possibility for the active participation of people in gigantic systems which are hierarchically organized and where decisions flow from the top down to the bottom”. Participation is at the heart of sustainable development, Jones & Welford (1997, p 128) argue. From the view of those not at the top, however, the matter is how accessible the structures are for those closer to the bottom. Can they influence these structures? Can they influence their possibilities to influence their situations? How high and thick is the green wall (Meima, 1997)? At Duni and FMV, there were examples of a fairly high wall. The environmental groups fought to be heard. This means that there are opportunities within those organizations of bringing more perspectives to the circle on greening, more opportunities of learning, that are poorly taken advantaged of. My colleague in chapter two jumped at the opportunity. Many organizational representatives encountered in this study did not seem as enthusiastic. Emphasizing participation also points at that greening is not for a selected few.

This conclusion does not mean, however, that the circle on greening should ever be closed. What it suggests is that the dominating technocentric approach is a limited base for making us aware of a becoming greening process. It fails to see the diversity and moving character of the context as well as of the changing demand for satisfiers. It is not particularly sensitive. It aims to control the natural state of being, leading to a continuous search for system errors and system solutions. What we need is to get beyond the technocratic concepts and definitions in order to embrace change as a natural state. What we need is to make sure that reflexive dialogues are continuously constructed.

The figure below (12.5) is a summary of the way out advocated in this chapter. Reflexive dialogues keeping greening alive, as framed in the figure, are constructed in the tensions between the technocentric approach and the alternative approach advocated here. On one hand, there is the technocratic search for technologically more sophisticated and economically more efficient products and processes. This is one part, one necessary part, of organizational greening. On the other hand, there is environmental and cultural sensitivity, and an emphasis on the necessity of promoting transparent and participative greening processes. Together they create the tensions necessary for dialogues to occur and thereby chances of developing new practices and new perspectives, that is, new
approaches to greening. In this way, reflexive dialogues are also seen as a natural part of the organization's everyday life:

Figure 12.5: Moving beyond technocentrism
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