Communication in corporate environmental reports

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Abstract

Since the beginning of the 1990s the number of companies producing environmental reports have increased considerably, a rise that now has plateaued. Some critics claim environmental reports are merely an exercise in public relations. This study describes the ascent of and the motives behind corporate environmental reporting and examines the extent to which the messages communicated in environmental reports correlate with the messages contained in corresponding annual reports and actual corporate behaviour. The indicated praxis of steering attention away from environmental problems – a by-pass solution – can involve providing contradictory information to various stakeholders. This article looks into third-party verification impacts on the credibility of environmental reports and calls for stricter reporting rules. The paper also discusses how eco-efficiency and sustainability demands placed on the scope of environmental reporting could enhance the sustainability of this reporting phenomenon, by for example doing away with merely limiting reports to company-judicial borders.

Keywords

Corporate environmental report, CER, environmental reporting, environmental accounting, sustainability, by-pass, control-based, influence-based.

JEL classification

L21; M31; M41

1 Introduction

During the past decade, a new branch of corporate reporting referred to as corporate environmental reporting (CER) has developed from insignificance to an important channel for communicating company environmental issues and performance to its stakeholders. Today, mainly larger companies listed on the stock exchanges in OECD countries[1] produce environmental reports independently from their financial reports, often without being obliged to do so by legislative pressure.

The voluntary nature of reporting together with the increased interest in the environment shown by corporate stakeholders has created a new area of company competition and thereby driven the rapid growth in environmental reporting witnessed over the past few years. In other words, the underlying driving force for conducting these reports is chiefly one of corporate self-interest. It can be argued that communication through these separate reports has been performed where a net benefit for the company is achievable (Gray *et al.*, 1990). These net benefits may be difficult to estimate however, especially for the corporation executive teams[2].

Companies continue to exhibit a range of different strategies and benefits from their environmental reporting; for example adopting reactive positions in debates on environmentally-damaging issues, or proactive positions in relatively less damaging sectors. Hence, corporate environmental informatics has evolved in a diverging manner creating incomparable as well as implausible reporting. The divergence of content often fails to convey the actual informa-

[1] The Global Environment Business Magazine *Tomorrow* lists these Corporate Environmental Reports (CER) on the Internet, World Wide Web [www.tomorrow-web.com]. CERs can also be viewed at the Sunderland University site, Centre for Environmental Informatics [cei.sund.ac.uk]. The Corporate Register online database has a collection of environmental reports from companies on the Internet at [www.corporateregister.com/].

[2] Agent and institutional theories are applicable here for describing the control problem of specialised company units for corporate executive teams and how each unit is fighting for survival and expansion.

tion wanted or needed by the targeted[3] stakeholders, and may instead contain verbose accounts of what scant relevant material there is available within the business.

Ljungdahl (1999:59ff) shows that while there has been only a small increase in the number of information categories and an even smaller incremental enlargement in the number of quantitative categories[4] being reported on, there has been an explosion in the number of pages per environmental report.

This paper describes some of the reasons behind environmental reporting as well as the development of the voluntary reporting phenomenon. This paper discusses the credibility of these corporate reports and attempts to illuminate the gap between messages in environmental reports, on the one hand, with messages in annual reports and actual corporate behaviour, on the other. This paper also attempts to determine preferable delimitations on environmental reporting if these are to say something on sustainability issues.

Section 2 of this report presents an outline of how the practice of environmental reporting evolved. Reporting customs are then presented in Section 3. Section 4 illuminates the differences between environmental reporting, non-environmental corporate reporting and corporate action. Section 5 deals with third-party verifications and recipient appraisals. Illustrations are presented in Section 6 covering how to incorporate eco-efficiency and sustainability considerations plus measurements into environmental reporting. Section 7 addresses issues in designing environmental reports, discussion and a concluding comments.

2 The ascent of corporate environmental reports

> "Corporate environment reports have quickly become the key channel for companies to communicate their environmental performance and, just as important, have become an effective tool to demonstrate company-wide integrated environ-

For more thorough theoretical descriptions, please see *Corporate Environmental Reporting: an Innovation of Accounting?* (Cerin, 2000).

[3] Stakeholder identification is central to many reporters on environmental data.

mental management systems, corporate responsibility and the implementation of industry voluntary codes of conduct."

(UNEP, 1994)

From being the subject of professional interest chiefly amongst environmentalists and scientists in the 1960s, interest in environmental issues has nowadays moved into the mainstream of our society. Various sub-communities, consisting of politicians, NGOs, businesses, environmentalists, the media as well as ordinary citizens can have widely differing approaches and aims driving their environmental efforts; noted by Lars-Olle Larsson (1997:15). Due to the increase in society's interest in the environment, it has become increasingly important over recent years for companies to communicate their environmental performance to their company stakeholders. Stakeholders impact on companies in various ways, via investments, sales, governmental pressure and ultimately the size of future business profits (Hollander, 1998). Moreover, good environmental performance (or resource productivity) is being viewed as an advantage in dynamic corporate competition (Bonifant and Arnold, 1995; Porter & van der Linde, 1995a, 1995b). Therefore environmental concerns have to be integrated into corporate objectives emphasising that economic decisions underlie the holistic life-cycle approach to products, from the 'cradle to the grave' (Yakhou and Dorweiler, 1999www).

Environmental information may be presented to the world outside a company via a fiscal report or some other separate report. The term usually used for this is *environmental reporting* or *corporate environmental reporting*. According to some researchers, only the stand-alone reports ought to be referred to as corporate environmental reports (Brophy & Starkey, 1996). The current wave of producing separate environmental reports is strong, however many reporters believe that this is a passing trend (Ljungdahl, 1999). This was noted during the proceedings for the "Best Swedish CER of the Year 1998" award (*Affärsvärlden*, 1999; *Miljöguiden*, 2000)[5], where the awarding committee noted that the amount of financially-related

[4] Ljungdahl (1999:554) divided environmental reports into 11categories based on the recommendations from the UNCTC (1991) and the model used by Almer, Axelsson & Ljungdahl (1992) and Ljungdahl (1995).

[5] The author of these articles, Lars-Eric Bränfeldt, is one of the members on the committee for electing the best CER of the year in Sweden.

data was on the decrease, and was often being replaced with verbal explanation. In the following year (1999), the number of separate environmental reports entered in the same competition had dropped by 13 percent, mainly due to an increased focus on ethical and other social considerations (Affärsvärlden, 2000). The USA, which had the highest proportion of companies producing environmental reports in the KPMG 1996 survey, was the only nation where the reporting practice had dropped in the KPMG 1999 survey, showing a drastic drop from 45% to 30% (KPMG, 1999). Moreover, Miljöguiden (2000) identifies a similar development emerging in England.

Corporate environmental reporting emerged in North America in the 1970s in businesses wishing to conduct social reporting. The regulatory support was at that time scant or non-existent (Brophy and Starkey, 1996:177ff; Gray, 1994). The current approach to environmental reporting was initiated in 1989 when the state-owned Norwegian oil and chemical corporation, Norsk Hydro, was pressured by massive environmental campaigns to report on its activities in order to salvage and restore its reputation. In North America, Monsanto was the first company to report on its toxic emissions in a separate environmental report. Union Carbide and Exxon along with other companies found to be responsible for environmental disasters also produced environmental reports relatively early on (Brophy and Starkey, 1996). Dye (1985) and Pattens (1991) demonstrated that most companies operating in sectors afflicted by environmental disaster began to report their environmental data. Those companies that chose not to report, were indirectly affected by the disaster-driven attention, despite having nothing whatsoever to do with specific woe. Stakeholders reacted with suspicion to non-reporting companies as though they had something to hide (Patten, 1991; Walden and Schwartz, 1992).

This type of voluntary disclosure provides pressured businesses and sectors with an avenue for expressing their side of the story in the environmental debate themselves, thereby protecting their own immaterial asset - their legitimacy (Ness and Mirza, 1991; Patten, 1991). In the public's mind, companies have little or nothing to lose by reporting after an environmental disaster.

Apart from those companies struggling with environmental disasters, other early reporters of environmental data were businesses in sectors characterised by a being in close contact with end-consumers, and contributed considerably to environmental stress. As described earlier, these enterprises often have the spotlight turned on them by environmentalists as well as the mass media (Brophy & Starkey, 1996). Even within sectors associated with relatively small negative environmental impacts, some companies discovered relatively early on, the worth-while benefits of efforts put into to elucidating the environmental burdens they created; two such companies were Electrolux and The Body Shop. For these companies, making their environmental concerns public have therefore become a new weapon in the competitive struggle (KPMG, 1999www).

In a survey conducted by Deloitte Touche Tohmatsu International (DTTI) and the International Institute for Sustainable Development & SustainAbility Ltd. (1993), asking companies why they voluntarily reported their environmental performance to their stakeholders, the most common response was that it was their *"duty to the environment"*. Gray *et al.* (1993) also found the most common reason for environmental reporting to be duty-based. However the intention of company management is most likely to be the creation of added value for the company shareholders — the universal imperative of any business. In other words, ensuring the stockowners receive maximum profits (or satisfaction) from environmental disclosure is of major importance to company management (Bergström *et al.*, 1998:23f; Gray *et al.*, 1990; Gray, 1990:67f; Jaggi and Zhao, 1996). The asset gained by reporting could be an immaterial asset, such as moral support from secondary stakeholders (Clarkson, 1995). Gray *et al.* (1993:209) also state that, *"Motives for voluntary disclosures are unlikely to be simple"*, and that the underlying reasons depend largely on the culture within the company.

From the somewhat contradictory outcomes of the various different studies referred to above, it can be deduced that the boundaries defining the underlying evolutionary force are not sharp, and according to Skillius and Wennberg:

> "Surveys have shown that the most common reasons given for voluntary reporting were duty-based, such as duty to the environment or the public's right to know. Motivation for disclosure can also be one of self-interest, with companies choosing to report if they judge that the benefits exceed the costs associated with environmental reporting. However, the motivation for reporting is not likely to be based solely on duty or self-interest but will contain elements of both."
>
> (Skillius and Wennberg, 1998: 4.2: www)

It may be argued that the stakeholder group represented by 'duty to the environment' in the DTTI questionnaire is not a true stakeholder group. According to the definition of stakeholder provided by Freeman (1984), stakeholders are those entities able to influence a company or those that are influenced therefrom. Identifying "duty for the environment" as a stakeholder group thus opens the way for applications outside the limits of stakeholder theory. The formulation of the DTTI survey encourages a politically-correct and moral response, in line with prevailing institutional theory. However, there may be a cultural change in the attitudes and values within engineering professions and businesses, progressing beyond the theories of agents, institutions (legitimacy) and stakeholders. Laestadius (1996), Frostell and Laestadius (1997) and Halme (1997) all describe the perceived strength of such cultural changes.

Gray (1994:209f) quotes a major chemical company describing the growing impression among corporations today that:

> *"It is increasingly realistic to recognise the need for environmental disclosure. The political climate is changing and it will become impossible to resist it. We also want to take our medicine early and to go through the pain barrier early in the process. We also want to tell people what we have done."*

It is still today mainly the larger corporations based in the industrialised world that provide environmental information to the public (*Miljörapporten*, 1999:34f)[6]. There also remain entire

[6] Allan White, Chairman of the Global Reporting Initiative's Workshop in Stockholm 20-09-1999 brought up the same phenomenon. The importance of company size is shown when comparing the environ-

branches of business in the industrialised world today that do not normally conduct external environmental disclosures, in for example the following sectors [7]:

- Finance,
- IT,
- Mining and metal industries, and
- Agriculture.

Companies in these branches may not yet have realised, as Gray (1993) puts it, *the market potential of being green*, or have not yet been pressured into becoming green through concrete demands made by customers, investors and the legislature. However, the financial sector's attention is being increasingly drawn to companies that underperform or supply inadequate information. The Dow Jones Sustainability Group Index, for example bases 30% of its entire sustainability criterion on external communications written by companies about themselves. Another example is the Swedish *Green Index*[8], which focuses attention on underachievers in reporting quantified environmental data.

A probable cause for the failure of many companies to see the net benefit in this sort of reporting in some branches is the low level of demand placed on them by customers and focussed environmental opinion, as well as in many cases the existence of significant distance to the end-consumer (Ljungdahl, 1999:169). For instance, mining and metal industries often deal solely with industrial customers, that do not place the same level of environmental demands on their suppliers, as end consumers place on their suppliers. Therefore these businesses have often settled for reactive environmental efforts, such as simply complying with the demands of the legislature. Schuster (2000) sees that environmental reporting is also an important information tool within the industrial sector in a study including Tetra Pak and Er-

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mental reporting studies of Global 100 (Krut and Moretz, 2000), the Fortune Global Top 250 (Kolk *et al.*, 2001; KPMG, 1999) and Fortune Global 1100 companies (KPMG, 1999).

[7] According to Olof Herolf, Price Waterhouse, as well as the chairman of the jury for awarding the best Swedish CER of the Year, 30-09-1998.

[8] Miljö index is the Swedish name of the Green Index developed by the Insurance company *Folksam*, the daily financial paper *Finanstidningen* and the small environmental consultancy, the *Green Index*.

icsson[9]. An explanation for this may be that the brand names of the two companies are exposed to end consumers (either directly or indirectly) through the services that they themselves or their customers provide.

Gray (1993) sees that it would be useful to study why so many companies at that time (1993) did not carry out any environmental disclosures. Since then, the number of companies producing separate environmental reports has risen by 1000% globally (1993 to 1999), according to a prognosis contained in *Miljörapporten* (1999:35). The Tellus Institute (1999) found similar development in their estimations of the numbers of companies producing environmental reports annually during the 1990s. Moreover, when extracting data from the Corporate Register web site (2000www), which is a world directory of published corporate environmental and social reports, it becomes clear that a rapid growth in the number of environmental reports occurred between the years 1992 and 1999. This was followed by a drop in the number of reports produced in 2000. However, despite the rapid increase of reporting during the 1990s, there are still very few companies producing environmental reports. A report from the New Economics Foundation (2000) shows that a very small proportion of the companies listed on either the New York or London stock exchanges produce these types of reports. Furthermore, this study detected a similar occurrence on the Stockholm Exchange (see Section 7 below). The study also found that those companies altering the practice of producing separate environmental reports to including environmental sections in their annual reports all belonged to sectors having considerable environmental impacts.

A workshop for experts in the field, held during the 1996 *Eco-Management and Auditing Conference*, concluded that there was a need for standardising the reporting format, the reporting of significant effects and quantifiable targets. The majority of the participants also saw the making environmental reporting mandatory as beneficial for increasing the information flow from companies (Brophy and Rickhardsson, 1997).

[9] *"Die Notwendigkeit ist aber auch im Industriesektor bereits vorhanden, wie dies bei den Gesprächen mit Tetra Pak und Ericsson erkennbar war."*

The latest development in environmental reporting incorporates it into the triple bottom line of corporate responsibility — environmental quality, social equity and economic prosperity (GRI, 1999; Tarna, 1999; Wheeler and Elkington, 2001).

3 Motives behind environmental reporting

At the ceremony for awarding the Best Corporate Environmental Report in Sweden for the year 1997[10], the CEO for Scandinavian Airlines System (SAS), Jan Stenberg, explained the motives behind the company's award-winning performance to the audience, using the following: *"an honourable environmental profile is profitable"; "a true conscience is a bonus"*; and the urgent need to *"escape shabby political discussions"*[11].

The profitability of an environmental profile refers to the gains made by the stockowners; a phenomenon explained using *economic man* behaviour and *stakeholder theory* (Jaggi and Zhao, 1996). Stenberg's *true conscience* could be represented by the stakeholder group *duty to the environment*, used in the 1993 DTTI study referred to above. Avoiding political debate and actively steering public opinion are two efficient evasive communication tactics. Creating a positive image of the company is often monetarily more effective than implementing sweeping changes to one's own organisation (Ljungdahl, 1999; Wolff, 1986). However such behaviours can be seen as *by-pass* solutions . This term can be compared with the *end-of-pipe* solutions of the 1960s and 70s, and the *in-process* solutions of the 1980s.

Electrolux claims that environmentally-friendly products sell well and are keen to show how the company could gain business advantages by being proactively green[12] e.g. through their

[10] 30-09-1998: the award for the Best Swedish CER of the Year was announced by the Företagsekonomiska Institutet in co-operation with the business magazine Affärsvärlden (an annual event). Swedish companies and provincial authorities subject themselves to independent review. SAS has won the award twice.

[11] By using *agent theory* and the notion of the *economic man*, SAS is working towards a better environmental profile while they strive to increase revenues, which is the ultimate goal of any business. Hence SAS is taking environmental concerns seriously as these issues coincide with the even more important issue of shareholder revenue.

[12] Declared by Electrolux upon winning the award for the Best CER of the Year 1997, within the manufacturing industry, and by Henrik Troberg (from Electrolux) during his PhD lecture at the Royal Institute of Technology, Stockholm, 12Feb 1999.

environmental reports. Their environmental department had successfully demonstrated to management that *green range* products returned higher revenues per product to Electrolux than the average *product fleet* did. Companies that understand the advantages of being perceived as concerned about nature are trying to present a credible image of themselves to the public. Therefore by attempting to gain moral support from secondary stakeholders (Clarkson, 1995; Gray, *et al.*, 1996:46), reporters may explain in their reports that their ultimate purpose is to create shareholder value[13]. Therefore it is in the name of self-interest (increasing shareholder value), that Electrolux takes environmental concerns seriously.

When the performance of the green products yielding better returns was presented to Electrolux management, they soon realised that the green range was restricted to the more exclusive products. Products which may generate higher revenue than the average product fleet – environmental performance excluded - since this green range was adopted to more exclusive products with e.g. more control buttons. Electrolux has nevertheless gained a lot of positive attention as a result, and benefited from free advertising in for example, ISO TR 14032 (1999:63ff), wherein the Electrolux study was presented as an example of applying ISO 14031, *Environmental Performance Evaluation*, for reporting an increased shareholder value through good environmental product performance.

One reason why many companies report environmental data is the constant and increasing demand from their customers for environmentally-related product and organisational information via for instance questionnaires, observed by Ljungdahl in the Swedish pulp and paper industry (1999:169). Furthermore *Naturvårdsverket* [Swedish EPA] (1999) indicates that the identified stakeholders have been of immense importance since 1993 (Soysal, 1998; SustainAbility, 1996; DTTI, 1993).

Skillius and Wennberg (1998:4.2:www) argue that carrying out external environmental reports may have positive effects within the reporting company itself. Hence most companies experienced in corporate environmental reporting, often perceive gaining greater benefits from the

[13] According to Henrik Troberg's PhD, lectures at the Royal Institute of Technology, Stockholm, 12 Feb

internal information gathering procedures themselves rather than from the external communication. The information gathering process can work as an environmental tool, informing and engaging employees.

The way environmental information is handled within a company determines the nature and extent of these gains. Companies often work on their CERs in a centralised, project-oriented organisational structure. Within a specified timeframe (normally a number of months) a few selected individuals gather information relating to environmental performance under constant time constraints. The information gatherers usually work closely with the group responsible for environmental disclosures, however the information gathered is not destined to be used in the everyday management of the corporation. These project-orientated routines do not enrich the results with adequate accuracy or transparency. Instead, this could be better managed if new operational methods aimed towards continuity of data flows were designated, enabling faster as well as more rigorous feedback (Isenmann and Lenz, 2000a; 2000b). Moreover the environmental performance would then be accessible to those closest to where the effects occur, thereby giving them the opportunity to reach the data in almost "real-time", and avoiding having to wait unnecessarily for an inaccurate annual environmental report[14]. The process of collecting data could thereby become an integrated part of the environmental management system (EMS), providing input to everyday decision making, as ought to be the case in the ongoing process (ISO FDIS 14031:3.1).

Despite the motives described here, many studies indicate that no clear positive or negative correlation exists between environmental and economic performances (Schaltegger and Figge, 2000; Ilnitch and Schaltegger, 1995; Johnson, 1995), and hence represent low economic benefits to company owners. Stanwick and Stanwick (2000) however found a relationship existing between moderately-performing companies (financially speaking) and high rates of environmental disclosure and environmental commitment. Higher-performing companies

1999.

[14] 30 Sept 1998, the award for the Best Swedish CER of the Year is announced by Företagsekonomiska Institutet in co-operation with the business magazine Affärsvärlden each year. Wennberg as a member of the committee, mentioned the importance of seeing CER as a process and not as an annually recurring "project".

had a lower rate of disclosure (contradicting the hypothesis of the study), and the lowest indices of environmental disclosure were found amongst lower-performing corporations. Environmental reporting has the potential to be used as a tool for two-way communication for (a) determining stakeholder preferences, and (b) for improving the internal EMS, but is usually used merely for one-way information disclosure (Herremans, *et al.*, 1999).

4 Discrepancies in reported messages

The reliability of corporate environmental reporting has been brought into question (Azzone, *et al.*, 1996a; Maltby, 1997; Ljungdahl, 1999; New Economics Foundation, 2000). Niskanen and Niemen (2001) have compared the positive and negative information contained in the environmental disclosures of publicly listed Finnish companies with widely-known and related events, and concluded that *"…the environmental reporting sample firms cannot be considered objective…"*, which is likely to be mainly due to a lack of legislation and strict standards.

4.1 Comparing messages in environmental and financial reports

The main environmental disclosure messages conveyed by companies listed on the OM Stockholm Exchange through their environmental and annual reports presented in document format on the Web have been compared in this study. These companies are referred to in the report as DERI producers[15]. Within this group, 20 out of 24 companies produce separate environmental reports. The forestry company *AssiDomän* and the energy supplier *Graninge* have integrated their environmental reports into their annual reports for the fiscal years 1998 and 1999 respectively. The investment company *Industrivärden*, on the other hand, continues its long tradition of producing integrated environmental reports describing their investment policies and the environmental work relating to their core holdings.

Within the DERI group, there are some discrepancies seen between the strategic importance of environmental issues contained in the environmental reports and the financial reports. This

[15] Companies that provide *documented environmental reports on the Internet* (DERI). For more information regarding the DERI study describing those companies on the OM Stockholm Exchange that produce DERIs, see Cerin (2000).

paradox is in line with the findings of Brignall and Modell (2000), in the area of public sector management accounting, regarding the balancing of conflicting stakeholders through de-coupling; inducing organisational stability rather than change (cf. Bergström *et al.*, 1998).

The messages conveyed in the strategies, policies, visions, mission statements and the words of the CEO contained in the environmental and annual reports of the investigated companies have been compared in this study. For instance, 10 environmental reports out of 24, talk about the importance of environmental concerns for the company, while the corresponding strategic section of the annual reports for the same companies fail to mention the word environment altogether. It should be mentioned however, that annual reports containing strategic sections that are totally lacking environmental concerns do normally include subsections about the environment elsewhere in the report. These environmental/social sections are normally located further back in the annual report, varying from one column to two pages. Nevertheless – contrary to this practice - the European Commission's study on corporate environmental reporting (Jones, 1999) recommended the following in relation to inclusions in annual reports:

> "Chairman's or Chief Executive Officer's Statements…should include references to the existence of environmental policy/principles, Environmental Management Systems, environmental targets and objectives, and refer the reader to locations within the annual report, environmental report or other publications where more detailed information can be found."
>
> (Jones, 1999)

Insert Table 1 about here.

Akzo Nobel mentions the importance of a good environment in its environmental report. In their 1999 environmental report for instance, it states that: *"Concern for health, safety and environment is an integral part of Akzo Nobel's business policy."* The company fails however to mention environmental concerns altogether in the annual report's strategy and policy sec-

tion (The 1999 Akzo Nobel Environmental Report and the 1999 Akzo Nobel Annual Report, 2000).

Four companies among the 24 DERI companies on the OM Stockholm Exchange are currently foreign based. Of these four, only one manages to mention environmental issues in the annual report's strategic section, Boliden. Boliden has been found responsible for causing two major environmental incidents in the late 1990s, one in Spain and one in Sweden. The former incident, a dam failure in southern Spain is well known, and where almost 3,000 acres of farmland and the Dañana National Park including a 40-kilometre range of river channels were affected, leading to the decimation of local agriculture, and habitat for numerous bird and fish species. Boliden estimates the cost of setting aside provisions for the accident to total USD 42.5 million. This does not include the costs to the environment nor the immense loss of credibility for the company. In response, Boliden is now including phrases in the titles of their annual and environmental reports, such as "rebuilding value" and "continued responsibility" respectively.

Swedish-based companies also show dissimilarity paradoxes. The telecommunications provider Telia, which has direct, end-consumer contacts, declares in its business concept and environmental policy contained in its environmental report for (year) that: *"The environment constitutes a prominent part of Telia's business."* (translated from Swedish to English by the author). However in the corresponding section of their annual report (1999), it fails to mention environmental issues altogether.

4.2 Messages conveyed in environmental reports and corporate action

Not only are there discrepancies found to exist between messages conveyed by various company reports, but there are also cases of discrepancies occurring between what is reported in their environmental and social reports, and what has actually been done in reality. This was found by the New Economics Foundation (New Economics Report, 2000), who presented several examples of discrepancy between what companies report in their environmental reports and what they actually do in reality; using large companies such as BPAmaco and Ford as examples.

Four out of the five corporations[16] mentioned earlier in Section 4 – with an indicated decoupling in their reporting to different stakeholders and also to what they do - are also members of the Dow Jones Sustainability Group Index (DJSGI), the exception being Ford. Several indexes, derivatives and funds, have either directly or indirectly (through bolstering credibility by DJSGI listing) based their evaluation of companies largely on the companies' own external communication[17]. As this screening process is based on these companies' own communication, it therefore selects corporations with the highest market capitalisation value, thus the highest growth thereof (Cerin & Dobers, 2001a; Patten, 1991). Later on in the same year, the New Economic Foundation (2000www) raised the following question rhetorically: *"…we reward a company which manufactures harmful chemicals by placing it at the top of the Dow Jones Sustainability Group Index. Why? In part, because it produces a social report."* See also Fries and Feldhusen (2001) and Cerin and Dobers (2001b). Furthermore, the Foundation also states that:

> "To date, there is no concrete evidence that social reporting results in improved social and ethical performance, and without the pressure that would be required for increased uptake, few companies will take on the responsibility to issue the data, unless required to do so."
>
> (New Economics Foundation, 2000)

Ljungdahl (1999), Pettersson and Earl (1998), KPMG (1999) and Bränfeldt (2000; 1999) identify a need for increasing the level of quantified data in environmental reports, and thereby meet the needs of stakeholders through solving some of the discrepancy problems.

[16] *Akzo Nobel*, *AstraZeneca*, *Boliden*, *BPAmaco* and *Ford*.
[17] Environmental reports, brochures and responses to questionnaires.

5 Third-party verification, reporting standards, recipients and stakeholders

5.1 Third-party verification

By using the Corporate Register database on the Internet (2000www), information can be retrieved regarding various kinds of environmental and social reporting from businesses and other organisations. The environmental reports produced in Sweden during 2000 have been investigated in this study. Not even one third of these reports (31%) were verified by a third party. Similar results were gathered from the KPMG 1999 study on environmental reporting, which shows that amongst the 100 largest companies in each of 11 countries (a total of 1100 companies), only 24% produced environmental reports. Of these 296 companies, only 50 (19%) had their reports verified by a third party. Two sectors stood out as underachievers in the study, being electronics and computers, and construction and building materials, where no reports were verified; while the sectors of oil and gas, and utilities occupied a leading position with respect to verification. Country wise, the UK occupied a prominent position, where just over 50% of the environmental reports were verified. In contrast, only one US-based company subjected itself to external verification. Interestingly, only 15 verifiers carried out all these third-party verifications, with a select few accounting firms dominating totally. According to the same KPMG study, KPMG are the largest verifier of the companies on this list (the 1100 companies), beating the second place getter, PricewaterhouseCoopers, with twice as many assignments. Of those companies retrieved from the Corporate Register database that were verified by Swedish verifiers, Deloitte & Touche and Den Norske Veritas were the dominating verifiers.

Important to keep in mind here (and which can often be forgotten in the CER debate) is that these accountant and management consultancy firms are themselves stakeholders in this reporting development. In the short term, the uncertainties from loose and diverging standards provide fertile ground for profitable management consulting commissions instead of a regime of simply merely reviewing assignments.

The credibility problem—a case study:

Nike is the largest of all the sports retailers. In their reports, the company has stated that they are, *"the only buyer to require a full cash minimum wage"*, and that their *"corporate policy is to keep orders at or below the level equivalent to 48 hours of work"* per week (Nike, 1998www; Clean Clothes Campaign, 2000www). Ernst & Young and the World Bank have for example undertaken verifications of such statements. There are several indications that Nike does not practice what it preaches. For instance, Boje (2000www) states the following in his article on Nike:

"There have been abundant reports of Nike corporal punishment: women in China being locked in cages for poor sewing (Chan, 1996), arrests of workers for organizing in Indonesia (Ballinger, 1997), seven toilets for ten thousand workers in Indonesia, … (Manning, 1997)." Boje goes on to list others.

(Boje, 2000www)

Ernst & Young (E&Y) had been carrying out internal audits at Nike since 1994, investigating the correlation between Nike's principles and its labour practices. An internal audit performed by E&Y in 1997[18], found discrepancies between these policies and practices in a Vietnamese sneaker factory, contradicting the last 5 years of public declarations by Nike (Knight, 1997). In spring 1998, one Nike employee went public with the report, damaging the credibility of both Nike and E&Y. Some 77% of the employees in one Vietnamese plant were reported to suffer from respiratory problems due to carcinogen levels in the air that were many times higher than the amounts allowed by Vietnamese regulations. Other contradictions of Nike's principles related to emissions released into nature by subcontractors, to salaries, working hours and child labour. The entire E&Y report (Ernst & Young,

[18] In 1997, Ernst & Young performed an internal environmental and labour practice audit for Nike at the Tae Kwang Vina Industrial Ltd. Co., Vietnam.

1997) on discrepancies between what Nike say and do is available at Corporate Watch, URL:

http://corpwatch.org/trac/nike/ernst/audit.html .

As is apparent above, consultants carrying out environmental audits normally report to company management. Environmental audits are hence mainly of an internal managerial character (Maltby, 1995). Ball, Owen & Gray (2000) disturbingly found in their study on external transparency or internal capture of third-party statements, that the current verification practice manifests itself as a managerial consultancy rather than a commitment to transparency and accountability.

5.2 Reporting standards

The first phase of the development of corporate environmental reporting has been unstructured and diverging. In the current phase of development, an obstacle to third-party verification is that there are usually at least several NGOs and national bodies, all trying to influence reporting in their preferred way. Applying Utterback's (1994) theory of innovation dynamics this can be seen as an interim and fluid phase characterised by innovation in CERs and the attempt to achieve a *dominant design* in reporting. The interests trying to affect the CER process in the period post the emergence of CER are many, leading to a divergence within the process. The European Commission (Jones, 1999) indicated that there are 15 different guidelines being used by companies producing environmental reports. Naturally, all these parties do not share the same goals, and hence the development of reporting has not yet progressed in a converging way. The heterogeneity of information contained in environmental reports makes them incomparable (Jones, 1999). Today, initiatives aimed at converging the practices are being taken by for example the Global Reporting Initiative (GRI), which has received strong support and acceptance worldwide for its guidelines on sustainability reporting (see GRI, 2000). There exists also several guidelines for verifying environmental reports.

The core question for most reporting standards is for the reporters to ascertain who the stakeholders of the company are and to adjust the report thereafter. Thus a similar practice to what has been common practice in social reporting is being advocated (Roberts, 1992). In the

current – early phase of - development of the ISO guideline for environmental communications (external and internal) stakeholder identification is recognised as of key importance and will be dealt with further (ISO, 2001).

5.3 Recipient appraisal

Recipient appraisals of these reports do not seem to judge them highly. A study looking at social reports reveals that less than one third of British shareholders expect that companies producing environmental reports are run better than those not producing them. Only 15% of British stakeholders thought that these reports reflected a real change in corporate culture. Some 50% of business and financial journalists regarded these reports as merely glossy PR with little real substance, while 31% of the shareholders expressed the same sentiment (MORI, 1999).

A study by Pettersson and Earl (1998), investigating the environmental reporting requirements made by the financial communities, shows that they all ask for important quantitative data to be included in environmental reports. To them, the important data describe risks, costs and strategies in measurable terms. However, the analysts did not appear to appreciate information about environmental opportunities to any great extent. Bränfeldt (1994) also reported similar findings a few years earlier, from a Swedish context. Analogous results where also extracted from a report by *Naturvårdsverket* [Swedish EPA] (1999), who found moreover, that there are discrepancies in the target readers identified by the reporters and the actual readers of the environmental reports.

5.4 Stakeholder identification and consultation

Both Pettersson and Earl (1998) and *Naturvårdsverket* [Swedish EPA] suggest increasing the focus on targeting those to whom the report makers want to reach. GRI (2000), Skillius and Wennberg (2000www) and Haines *et al.* (1996) also highlight the importance of the stakeholder identification process. Azzone *et al.* (1996b), Azzone *et al.* (1997), Brophy *et al.* (1999) as well as IBM (1995) and Nortel (1995) also analyse the formatting requirements on environmental reporting of key stakeholders. Perhaps not so very surprising is that having

knowledge about what is desired by the stakeholders makes it easier to arrange the environmental information to obtain a higher degree of message penetration.

After first identifying the stakeholders, the process can then continue by consultation. Stakeholder consultation is found to be highly important in sectors that have a high level of public exposure. Stray and Ballantine (2000) have come to following conclusion:

> "If environmental disclosure is used to legitimise a company's activities in the eyes of its stakeholders, then it can be argued that consultation with those stakeholders about their concerns is a relevant and necessary activity."
>
> (Stray and Ballantine, 2000)

The Stray and Ballantine study shows that the *energy* sector followed by the *food and drink* sector and *water* sector puts the most effort into stakeholder consultation[19]. The *electronics* sector, followed by the *banking* sector, is least likely to conduct discussions with interested stakeholders[20]. The importance of early stakeholder identification is shown in the ISO Working Group for Environmental Communications – ISO 14063 – (2001).

[19] The sectoral dividing used in the Stray and Ballantine (2000) study is: Automobile, Banking, Electronics, Energy, Food and drink and Water.

[20] The authors (Stray and Ballantine) found this surprising since the electronics sector may perceive themselves as having larger environmental impact than the banking sector. After having browsed through numerous CERs I found that the mean environmental policies of the electronics community are to a larger extent focused on sustainability and the low-life cycle impacts of their products. Some companies are dealing with lowering the environmental burdens of the customers with their equipment. The banking sector, however does not have a tradition of environmental concerns, as they have very little direct environmental impact. As a consequence, banking has traditionally not as strong a focus on sustainability in general, and a greater need for orientation guidance by its stakeholders. If indirect impacts are included, banking may have much larger environmental impacts, through financing activities that are harming our life-supporting milieu.

6 Eco-efficiency and sustainability demands on environmental reporting

As Utterback (1994) points out, there are many parameters other than superior product functionality that determine what will evolve to be a dominant design[21]. This paper points out the emergence of a converging trend focusing on stakeholder identification in the process of conducting CERs. However this section intends to show the projected scope of an environmental report, if steering towards eco-sustainability as a stakeholder is pursued.

Stakeholder identification and tailoring reports thereafter is central in many environmental reporting guidelines, as indicated earlier in Section 6. Roberts (1992) indicates that stakeholder-adjusted reports are also common in social reporting; another reporting area which is not governed by a strict set of rules.

What information do company stakeholders need reported if they are to steer companies towards eco-efficiency and/or sustainability? Firstly eco-efficiency has to be defined. One definition which is often referred to comes from the World Business Council for Sustainable Development (Schmidheiny and WBCSD, 1992) and is commonly cited as follows:

> "Eco-efficiency is achieved by the delivery of competitively-priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life cycle to a level at least in line with the Earth's estimated carrying capacity."

Sustainable development as defined in *Our Common Future* (Bruntland Commission's Report - WCED, 1987:43) is world progress that "meets the needs of the present without compromising the ability of future generations to meet their own needs". This paper deals with the environmental and economical aspects of sustainability, mainly excluding the social dimension – an eco-sustainability. Hence, focusing on eco-sustainability on a global level encompassing the eco-efficiencies of lower levels (Cerin and Laestadius, 2000).

[21] Compare with the case of VHS versus Beta standards where the inferior technology became a dominant design.

In ISO 14001, Clause 4.3.1 (ISO, 1996) states that: "*The organization shall … identify the environmental aspects of its activities, products or services … to determine those which have or can have significant impacts on the environment…these significant impacts are considered in setting its environmental objectives*."[22] ISO 14031 deals for example with how to report and communicate an organisation's environmental performance (ISO FDIS 14031, 1998). In the case of the companies undertaking environmental reporting, a considerable number are system designers for end products and are large in size. When adopting the concept of eco-efficiency and the scope of an environmental management system stated in for example ISO 14001, it is insufficient to merely report on the carbon dioxide (CO_2) emissions limited to the judicial borders of the company divided by turnover. An improvement in emissions within the judicial limits of the company may within the scope of the whole life cycle of the functions offered by the product and or service, be a worsening of eco-efficiency (Cerin and Ramírez, 2000). It may, and in many cases should be asked: *to what extent can life-cycle assessments (LCAs) efficiently handle this problem*? Among the strongest critics are Schaltegger and Burritt (2000), whose comments on life-cycle assessments include the following: *"… of poor quality and … of little value for decision making and accountability purposes.*" The author and co-researchers concur with this view, recognising that the accuracy of LCAs are not as high as input/output analyses of small company units (see Cerin and Ramírez, 2000). However, it ought to be argued strongly that it is better to address the *right issues* (see ISO 14000: clause 4.3.1 and ISO 14040 series) in a fairly careful way than the *wrong issues* (or accounting with too narrow a scope) optimally. Regarding the question of accountability, the abolishment of judicial I/O for the use of life-cycle scope will impose great difficulties on the aggregating of data to macro level, due to considerable risks for double accounting.

Insert Figure 1 about here.

[22] This implies for example that a company owning a design should include the entire chain of value of its products and services into its considerations when setting the environmental objectives for its organisation (see also ISO 14040-series, 1997).

Nevertheless the need for one scope does not need to exclude the need for another. On the contrary there is a need for scopes covering both the *control-based* delimitations – as in judicial fiscal accounting – and the *influence-based* delimitations – as in ISO 14001 clause 4.3.1. The control-based delimitation corresponds to direct financial risk, since the organisation is directly affected by i.e. new environmental policies, and the influence-based delimitation to indirect financial risk, since other actors along the value chain are primary affected. The case study below illuminates the potential size of CO_2 emission costs from judicial entities and product life cycles.

The financial risk from product life-cycle emissions—

a case study

Cerin (2000) states that only 60% of the online-CER producing companies in that study could provide complete information regarding CO_2 emissions within the limits of the judicial company over turnover. Even fewer companies can extract information covering total emissions of CO_2 from the various different parts of the product life cycle and relate it to the designer company. Ericsson is one of the few companies that can. Ericsson's total CO_2 emissions (from both primary and secondary energy used for example in heating, travel and production) in 1999, from all sites, plus travel (including commuting) and product transports come to 0.8 million tonnes. Corresponding emissions for the entire product life cycles during the same year (1999) were 7 million tonnes (Ericsson, 2000). Restricting the focus to only CO_2 emissions from the judicial entity "Ericsson", which is the same delimitation as used in financial accounting, would only include the CO_2 emissions from primary energy use, which would be 200,000 tonnes. Hence, Ericsson's judicial CO_2 emission contribution is around 3% of the total CO_2 emissions generated by Ericsson products' entire life cycles. Note, that this percentage would have been even lower if the activities of suppliers and customers also had been included in the total figure.

In *Economic Outlook* (OECD, 1999) the OECD states that the implied carbon price required to achieve the Kyoto targets would on average be US $200 per tonne emitted CO_2[A]. Using the OECD emission costs with the Ericsson data produces the following:

Delimitation	**CO_2 emissions** (tonnes)	**Cost** (US$)
Ericsson 1 (judicial entity [JE] hence only primary energy)	200,000	11,000,000
Ericsson 2 (JE + secondary Energy and transports plus commuting)	800,000	43,000,000
Total life-cycle of products	7,000,000	378,000,000

Ericsson's gross margin[B] for the fiscal year 1999 was US $ 14,654,000,000[C] (SEK 89 522 million). Thus the CO_2 emission cost for the entire life cycles of their products produced during 1999 comes to 13% of Ericsson's gross margins (which was the best gross margin[B] in this company's history). The emission costs limited to the company only were not negligible, but much smaller at 0.38% (Ericsson 1), [1.5% (Ericsson 2)] of the gross margin[B].

Volvo can be used as an example of a vehicle manufacturer. Volvo's gross margin[B] for the fiscal year 1999 was US $10,494,000,000[C] (SEK 89,522 million). Corresponding life-cycle costs for the CO_2 emiss7ions relating to the products produced by Volvo during 1999 over Volvo turnover is estimated by using data from Volvo's annual and environmental reports, the Green Index (2000www) and from to Albrecht (2000a; 2000b). The CO_2

emission cost for the entire life cycles of the products produced during 1999 equals 64% of Volvo's gross margin[B].

Delimitation	**CO_2 emissions** (tonnes)	**Cost** (US$)
Volvo (JE + bought energy [not all transport-commuting])	614,000	33,000,000
Total life-cycle of products	174,000,000	9,400,000,000

A. Compare to existing tax in Sweden levied on the CO_2 content in fuels, being US $43 per tonne emitted CO_2[C] (0.37 SEK/kg CO_2) (SOU 1999:11).

B. Similar calculations may be carried out using for example *value added* in the denominator instead of *gross margin* thus showing the impact of CO_2 emissions on activity rather than profit. The value added is – besides volatile over time – more difficult to estimate, especially externally compared with the gross margin.

C. Exchange rate in December 1999 was 8.53 SEK/US$.

The life-cycle scope reporting, as is shown here, may be of interest to the financial community for determining the entrepreneurial risks resulting from financial impacts of possible tightening future legislation relating to eco-sustainability and the Kyoto goals (cf. Matten, 1996).

7 Concluding discussion

The environmental reports in their current forms started off in the beginning of the 1990s when businesses in the petroleum and chemical sectors wanted to provide their own side of the story in the environmental debate. These companies thereby took the public debate initiative, which was formerly more or less reserved for NGOs. In sectors plagued by environmental disasters, most corporations started to report in order to avoid the negative stakeholder impression that they had something to hide, even though these companies them-

selves may have had nothing to do with any specific environmental incident. Therefore by environmental reporting, businesses protect and expand their material asset of legitimacy.

Studies have pointed to the fact that that there is little quantifiable substance, such as emission performance indicators and quantifiable targets, contained in environmental reports. Despite the rapid increase in the use of corporate environmental reports during the last decade, it is primarily the giants among corporations that produce environmental reports. This growth has now also slowed considerably.

Companies in sectors under public pressure attempt to gain legitimacy by telling their sides of the environmental story, steering public attention into more positive directions and therefore away from actual problems. This phenomenon could be compared with the end-of-pipe solutions of the 1960s and 70s, and to the process solutions of the 1980s. Reporting practices wherein attempts are made to report around the real environmental problems are referred to as by-pass solutions; perhaps the additional dimension of environmental work aroused in the 1990s.

There are many guidelines drafted by various NGOs and governmental bodies that companies are currently encouraged to follow; but the majority of companies do not follow any particular practice. Consequently, there is great variety in the content of what is reported. Moreover, a gap is indicated between what companies state in their environmental reporting, what they state in their annual reporting, and what they actually do in reality.

Providing company stakeholders with information tailored to fit the sole aims of the reporters has resulted in contradicting strategic messages being conveyed in environmental reports on the one hand, and annual reports and company actions on the other. This phenomenon has been illuminated and supported by other articles using institutional theory.

This phenomenon with its double messages as well as immense inherent difficulties in comparing environmental reports, creates a credibility gap. The large number of organisations

trying to influence how and what to report on, does not necessarily make the situation any better. By failing to work together towards a common goal, NGOs may in fact be beneficial to the underachievers in environmental reporting, since these reporters do not have to stand out from a homogenous crowd of environmental reports.

From a macro perspective, this paper indicates a need for at least one accounting ingredient to be applied to environmental reporting - CO_2 emissions relating to either company turnover, value added or gross margin. One scope of emissions may follow the judicial entity enabling national aggregations as well as the direct financial risk due to possible environmental policy action to be ascertained, and the other scope follow e.g. the life cycle of the products of the companies owning the design, thereby elucidating the companies' overall financial risks as well as the opportunities presented throughout the entire value chains, on which it is dependent. I call these two scopes of environmental reporting respectively control-based and influence-based delimitations.

If environmental reports are to be deemed credible, they have to be underpinned by a firm set of rules preventing opportunistic behaviour by the reporting parties. The sustainability of environmental and related reports depends heavily on reducing the credibility gap. If the gap is not decreased, the decline in environmental reporting which we can already see signs of today, may escalate. Today's companies seek *legitimacy* by impression via the production of environmental reports. These company-based reports merely present the company's side in the environmental debate, while the regulated area of annual reporting with its well-developed reporting practices, forces companies to seek *legality* – legal legitimacy. The environmental reporting of today, therefore functions more as a marketing tool than an accounting innovation.

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The environmental reports (including social and sustainability reports) and annual reports covering the fiscal year 1999, available on the Internet in document format from 26 companies listed on the OM Stockholm Exchange. (Printed versions are published in 2000).

Table 1. Discrepancies in the strategy and policy sections of AstraZeneca's environmental and annual reports in 1999, describing the strategic importance of environmental concerns.

Environmental Report	Annual Report
"Safety, health and environmental (SHE) considerations are core to … all our activities shall take account of social, environmental and economic factors …"	*"The core of AstraZeneca's strategy is the application of science and technology to deliver a continuous flow of effective new products, designed to meet the needs of healthcare providers and patients; products which deliver true value in the treatment of disease."*

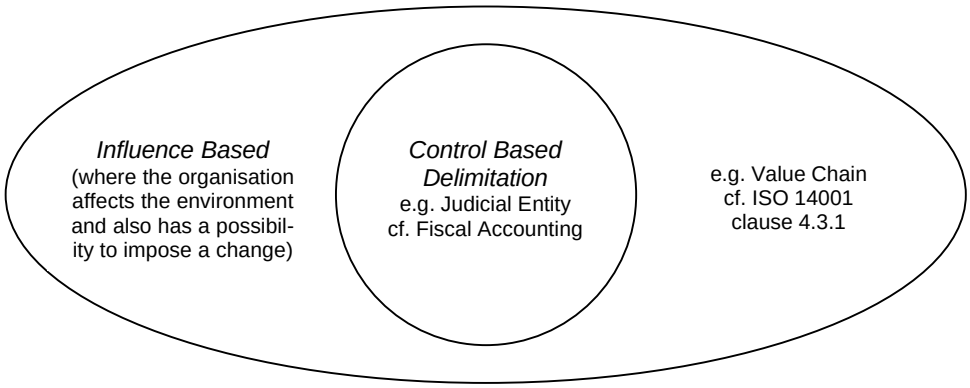

Figure 1. Reporting scope arranged according to degree of control.