REPORT

Management of Sustainability Issues in Industry – A stakeholder perspective

Lennart Swanström, ABB Corporate Research
Pontus Cerin, IVL Swedish Environmental Research Institute
B1684
Juni 2006

for
CPM - Centre for Environmental Assessment of Product and Material Systems
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2006

This IVL report is also available as a CPM 2006 Report at:
www.cpm.chalmers.se

IVL Swedish Environmental Research Institute

IVL Swedish Environmental Research Institute

Organization

IVL Swedish Environmental Research Institute Ltd.

Address

P.O. Box 21060
SE-100 31 Stockholm

Telephone

+46 (0)8-598 563 00

Report Summary

Project title

Är företagens miljöarbete hållbart?

Project sponsor

CPM/Chalmers Tekniska Högskola AB

Author

Pontus Cerin, IVL Swedish Environmental Research Institute
Lennart Swanström, ABB Corporate Research

Title and subtitle of the report

Management of Sustainability Issues in Industry – A stakeholder perspective.

Summary

The society and stakeholder demands on corporate handling of social and environmental issues have increased substantially during the last decade which has resulted in vast resources spent on developing and implementing management systems and tools for sustainability issues. An important question to consider is consequently how companies as well as their stakeholders perceive the economic, environmental and social benefits from using these systems and tools in companies.

The main findings of the study is that most stakeholder groups perceive that the use of systems and tools for managing sustainability issues result in higher environmental and social performance for the company and its products but it is not likely that the economic performance of the company automatically improves by taking these actions.

The main conclusion of the study is that the core of corporate strategies, management and product assessments of sustainability issues should be to deal with how environmental and social aspects influence company revenues and future market shares.

Keyword

Sustainability management, environmental management, business value, corporate responsibility, environmental improvement, social improvement, information asymmetries, power interests, cultural belonging

Bibliographic data

IVL Report B1684

The report can be ordered via

Homepage: www.ivl.se, e-mail: publicationservice@ivl.se, fax+46 (0)8-598 563 90, or via IVL, P.O. Box 21060, SE-100 31 Stockholm Sweden

This report approved
2006-06-22

Lars-Gunnar Lindfors
Scientific Director

Summary

The society and stakeholder demands on corporate handling of social and environmental issues have increased substantially during the last decade. As a response to this demand, the industrial sector has spent large amount of resources in developing and implementing management systems and tools for sustainability issues, such as environmental management systems (EMS), occupational health and safety management systems (OHSMS), life cycle assessments (LCA), environmental product declarations (EPD) and sustainability reports (SR). An important question to consider is consequently how companies as well as their stakeholders perceive the economic, environmental and social benefits from using these systems and tools in companies.

The aim for this study is to analyze how some key stakeholder groups perceive the economic, environmental and social outcomes from using systems and tools for managing aspects of sustainability in companies. The study was conducted as a questionnaire study embracing actors in industry with ABB as the focal company, the financial sector and academia. In total 105 responses of 155 questionnaires were received which gives us the overall response rate 67,7 percent for the entire study. The answers from the respondents were divided into eight fairly distinguished groups. The three groups in industry were; *ABB Country Sustainability Controllers* (29), *ABB Group Account Managers* (19), i.e. sales managers for ABB key customers and *ABB Customers* (9). The three groups in the financial sector were; *Finance Banks* (10), i.e. SRI Analysts and Environmental Managers at banks, fund and insurance companies, *Finance SRI Advisors* (8), i.e. SRI advisors in SRI advisor firms and *Finance Portfolio Managers-&-Analysts* (7). Finally, the two groups from academia were*: Academia Environmental Management* (13), i.e. researchers working with environmental management and tools for environmental analysis and *Academia Accounting-&-Investment (*10), i.e. researchers working with environmental and social performance related to environmental accounting, sustainability reporting and sustainable investments.

All stakeholder groups, except for the Academia Accounting-&-Investment group, perceive that the use of systems and tools for managing sustainability issues result in higher environmental and social performance for the company and its products. It is, however, according to a majority of all respondent groups not likely that the economic performance of the company automatically improves by taking these actions.

This study shows that ABB has quite successfully reached out to the financial actors included in the study permeating ABB's sustainability objectives, actions and results. The Finance SRI Advisor firm respondent group, which is the most critical group to many issues within corporate extended responsibility and how to handle those, is also the respondent group that shows the strongest support to the normative statement that *"ABB is a proactive company in the sustainability area."* Since a large number of the SRI advisors are quite concerned with real performance of environmental and social aspects this requires not only communication skills from ABB, but also actual progress and sound management strategies. The only respondent group showing even stronger support for ABB's proactiveness in the sustainability area is, perhaps not surprising, ABB's own Country Sustainability Controllers.

The findings of this study show that it is vital for ABB and for manufacturing industry in general to implement a product focus when addressing the environmental aspects of the organisation. Environmental performances of ABB's products and services are what the customers request since

it affects their own operations. This product focus is also the focus for the financial analysts and they see a need for linking the dependence on environmental aspects to the generation of ABB's revenues, which for active products of ABB go via its services and the economic solutions offered customers. Indications are provided from the larger firm of the respondent group Finance SRI Advisors that they do not care much for initiatives like carbon neutral companies and plants (unless driven by marginal cost cuts), which currently is well perceived among industrial actors – firms and perhaps especially consultants – and NGO's. The negative stand simply arises because these increased costs within the company will oftentimes not come anywhere near to generate the business needed to cover them and the major environmental gains lies in product improvements. But, in the view of Finance SRI Advisors, for social issues working conditions upstream in the value chain and coherent HR standards within the corporation globally are vital in the evaluation.

All respondent groups in industry and the financial sector – perceive that companies provide their business stakeholders with requested information and do not see the systems and tools for analysis and communication as being too resource consuming. The academic groups developing new systems and tools for handling sustainability issues was not the most critical group on the efficiency of these tools but saw the greatest need of all respondent groups for improving the very same efficiency – an indication of the respondents speaking for their own benefits.

Contrary to the view of the ABB Country Sustainability Controllers, the ABB Group Account Managers do not see management programs as important driving force for working with sustainability issues which clearly displays the essential *cultural belongings* of these two professional groups within the company. The Group Account Mangers do, however, regard management programs, especially environmental management systems, as being the most important tool to have implemented from a customer perspective which fits well with the *power interest* of these managers. These systems are consequently seen by ABB Group Account Mangers as important from a customer perspective, but the Group Account Managers do according to the responses not see these systems as a significant force for them to work with sustainability issues. Thus, to what degree are these managers involved in the actual improvement processes? The *information asymmetries* make it difficult and resource demanding for procurement staff to retrieve a holistic picture of the environmental performance inside the supplier and its services, making them satisfied by checking aspects i.e. the existence of EMSs. The main driving force for ABB Country Sustainability Controllers can be seen as internal – legal and governmental requirements and management programs – while ABB Group Account Managers perceive customers as the most important driver.

Another finding is that the ABB Country Sustainability Controllers see management commitment as the biggest obstacle for working with sustainability issues, while most ABB Group Account Managers does not see this commitment as insufficient. One out of five of the ABB Group Account Managers do not see a problem at all for integration of sustainability issues in the daily activities. The identification of management commitment as the largest obstacle for working with environmental issues has, moreover, increased since a LCA study carried out on ABB 1999.

The main result from the longitudinal study – comparing the current results with the result from the study on the LCA tool conducted in 2001 based on data from 1999 – is that environmental/sustainability managers feel that the driving forces for working with environmental/sustainability issues have shifted from management programs towards legislation and awareness in society. Environmental and sustainability managers currently sees management commitment as an increased main obstacle for working with environmental and sustainability issues compared to the previous study. LCA data is demanded by customers to the same extent as for six

years ago and it there is a small increase in using LCAs in marketing while LCA is seen by both line managers and sustainability managers as providing less competitive advantage than before.

The voluntary initiatives taken by industry and other actors in society on environmental and social aspects are expected by some Academia Accounting-&-Investment respondents to become transformed into mandatory demands and regulations ahead. Some respondents from the academic groups stressed the fact that the expeditious economic development of the enormous latecoming economies puts new requirements on the environmental and social aspects of company services. Resource scarcity is going to be a rapidly increasing actuality that needs to be addressed as well as the social and environmental demands on services sold to the new arising markets.

Additional it is important to note that, in general, it is very difficult and resource consuming (high transaction costs) for company stakeholders to retrieve a good picture from the outside-in regarding the internal management of environmental and social issues and the resulting outcome in environmental, social and economic performances.

The responses from Finance SRI Advisors indicate a need for comparable and reliable indicators that show how companies' environmental and social performances affect their economic performances and describe the strategic management thereof – e.g. how dependent is company revenues on carbon emissions and child labour and what strategies are taken to address the associated business risks.

To deal with how environmental and social aspects influence company revenues and future market shares should, hence, be the core of corporate strategies, management and product assessments of sustainability issues.

Content

1 Introduction

The voluntary work on environmental issues in industry has involved the creation of and the engagement in environmental management systems (EMS), life cycle assessments (LCA), environmental product declarations (EPD) and corporate environmental reports (CER) among many other tools with their own set of three letter acronyms (TLA) (cf e.g. Schaltegger at al, 2000, Gray et al, 1993 and Welford, 1998). The focus changed during the turn of the millennium to the more holistic concept of sustainability, incorporating also social and economic issues. This broader view on the responsibility is sometimes referred to as management of Triple Bottom Line (TBL), Corporate Social Responsibility (CSR) or Corporate Sustainability (CS) and are attempts to operationalise the political concepts of sustainable development (cf. WCED, 1987:43)[1]. The increased scope on corporate responsibility is however complex to manage. It is, therefore, imperative to illuminate how these issues are handled and incorporated into business-decisions.

These tools and methodologies have not always been satisfactory incorporated into day-to-day corporate operations and importantly not influenced decision-making to greater extent. Studies have indicated, contrary to the business demands, that academia has influenced the development of these tools and methods, which has resulted in greater and greater refinement and accuracy, but too often on the expense of time and costs. Critically reviews of corporate environmental work have been carried out seeing that e.g. the environmental analyses made have created new knowledge about firms' offerings, although the results have seldom been used in business decisions. Suggestions have been made to adopt the existing environmental management tools to better fit business realities with limited resources of time and money in order to make the strive towards environmental efficiency more efficient and effective (cf. Laestadius and Karlson, 2000; cf. Cerin and Laestadius, 2003; cf. Axelsson et al., 2003).

Industry's handling of environmental and social issues has, thus, to become efficient, otherwise may the voluntary initiatives to work with these issues not sustain in the long-term. Many larger players in industry have voluntary been working with environmental and social issues for a good decade now, but the big leaps in improved product and process performance have not always been realized. Why are the large potentials for improvements not realized? What are the organizational obstacles, and potentials? Great emphasis ought, hence, to be put on the effectiveness and resource efficiency of corporate methods of working with sustainability issues in order for them to sustain and in the prolonging, thrive by contributing to the well-being of the entire corporation as well as to the well-being of society.

[1] This concept has, in turn, increasingly been exchanged for the term sustainability, since sustainable development by some people is less linked with continued physical development. Sometimes these concepts are used for similar purposes. The complexity does, however, not end there. Holmberg and Sandbrook (1992) have identified more than 70 definitions on sustainability and Article 13 (2006) has found more than 100 definitions of sustainability and sustainable development. The concepts not being operational may ironically, as pointed out by Cerin (2004) be one of the reasons for their widely acceptance.

2 Project aim

The comprehensive goal of this study is to move focus from the phase of method and tool construction towards the outcome, thus, being more goals oriented. This is e.g. to strive for a good fit between the business goals and priorities (drivers), on the one hand, and sustainability goals (company response), on the other hand. Such a shift will render it possible to steer work on sustainability issues towards doing the right things in terms of the interaction with society and specifically business outcome influential stakeholders, but very crucially from a company perspective: being effective.

The aim for this study is to:

- Evaluate how five key stakeholder groups perceive the economic, environmental and social effects from using sustainability management systems, tools and methods.
- Provide knowledge on organizational obstacles and potentials for linking sustainability tools and methods to business and decision making.

Additionally, since many of the sustainability tools and methodologies examined in this study herein from the CPM collaboration (the Competence Centre for Environmental Assessment of Product and Material Systems at Chalmers University of Technology) the study may also be seen as an evaluation of CPM. These tools and methods are, moreover, jointly developed by the CPM companies and in many cases implemented too in the participating companies.

One contribution of this study is, thus, a discussion on organizational obstacles and potentials for linking tools and methods on sustainable issues to decision making. The expected outcome is an increased awareness on how important corporate voluntary work with environmental and social issues is to both company internal and external decision-makers. What is the economic and business value of companies' engagement into sustainability issues? The views of the decision-makers within the company, its customers and investors have been analyzed as well as the views of the environmental/sustainability profession of corresponding actors. All these actors' experiences have been compared to each other, but also to the views of academia that is researching on the management and accounting of corporate sustainability issues.

The results from this project can be used for many purposes, e.g. as an input to build industry sustainability strategies and to guide how to set up business relevant organizations to handle environmental aspects in an efficient way.

The study has been carried out mainly at ABB and its stakeholder but also to some extent at the other collaborating companies in CPM. A secondary goal, or spin off effect, from this project is to link the prominent position of following actors somewhat closer to each other; A) the collaboration of international companies on industrial environmental issues, B) IVL on environmental management, C) CPM at Chalmers on environmental analyses, and D) Industrial Dynamics at KTH on organizational theory; establishing a creative interdisciplinary research group.

3 Project actors and financiers

The project was carried out by Lennart Swanström, ABB Corporate Research, which is the CPM project leader for this undertaking, and Pontus Cerin, IVL Swedish Environmental Research Institute. The project has been carried out by working closely together, sharing information with each other on almost daily bases. Communication has taken place on daily bases via telephone and emails, but also through meetings on a monthly to weekly basis. Exchanges of documents and data compilations have been made possible by using the password protected working area with version controls and backups that available via the Internet which is financed by the president of Royal Institute of Technology. The platform is named Sustainable Investment Research Platform and is available at the URL: www.sirp.se.

The project design, results and conclusions was continually discussed with:

- Research Leader Ulrik Axelsson, IVL Swedish Environmental Research Institute.
- Research Director Peter Lysell, Competence Centre for Environmental Assessment of Product and Material Systems (CPM), Chalmers University of Technology.
- Professor Staffan Laestadius, Head of Unit Industrial Dynamics, Department of Industrial Economics and Management (INDEK), School of Industrial Engineering and Management (IEM), Royal Institute of Technology (KTH).

The rough picture of the financial contributors is:

- Financial support from CPM.
- Personal resources from CPM companies.
- The foundation SIVL, the sole owner of IVL Swedish Environmental Research Institute has financed the project with an equal share as has been put into the project by the CPM partners together.

3.1 CPM – Competence Centre for Environmental Assessment of Product and Material Systems

This study was conducted within CPM, the Competence Centre for Environmental Assessment of Product and Material Systems. CPM is hosted at Chalmers University of Technology in Gothenburg and was established in 1996. This study, besides providing its own deliverables and results, may also be seen as and evaluation of the CPM cooperation since many of the sustainability tools and methodologies examined in this report are also used by the other CPM companies but are also sometimes jointly developed within the CPM cooperation. This additional objective is well in the line with the overall goals for the fourth and current phase of the CPM cooperation presented in the end of this section. A short description of CPM is provided below, for more information see www.cpm.chalmers.se .

LCA research at Chalmers started out several years before the establishment of CPM. A LCA study was e.g. made 1990 on packaging materials. Methodological issues (allocation, system boundaries, and role of LCA in decision making) were studied between 1992 and 1994 in the Product Ecology Project, involving a large industrial group of Swedish companies. Other areas where LCA research

has been carried out over the years include LCA of buildings and building materials, LCA of sewerage systems, LCA of electronics, LCA of trains, and the creation of a LCA database (SPINE). IMI, the Research group Industrial Environmental Informatics at Chalmers, is established as a result of the work performed within CPM, see www.imi.chalmers.se .

CPM has been established and carried on in agreement between these parties:

- The current industrial partners: ABB AB, Akzo Nobel AB, Bombardier Transportation, Duni AB, ITT Flygt AB, IKEA of Sweden, SCA Hygiene Products, Tetra Pak and Stora Enso AB.
- VINNOVA, the Swedish Agency for Innovation Systems.
- Chalmers University of Technology.

The overall goals for CPM are:

- The eradication or reduction of the environmental impact associated with products.
- To become competent in the development of eco-efficient and sustainable products at a high international level.
- To provide industry and society with the relevant methods and support to facilitate decision-making with regard to the environmental aspects of products and materials.

CPM is now in its fourth stage. The overall goals for this stage are:

- To understand how companies should integrate and develop their current knowledge in the businesses of interested parties, so that it supports environmentally, socially and economically sustainable development.
- To provide knowledge and tools that leads the way towards sustainable development in business management, product and process development and marketing communication.

3.2 KTH, INDEK – Department of Industrial Economics and Management

Royal Institute of Technology (KTH) has been involved in this project through the aid from Professor Staffan Laestadius, Head of Unit of Industrial Dynamics (ID). ID is a unit of the department of Industrial Economics and Management (INDEK) at the KTH School of Industrial Engineering and Management (IEM).

Staffan Laestadius, Professor in Industrial Dynamics, is the primary spokesperson for KHT's Management for sustainability. One central aspect in Laestadius' environmental research is that the current environmental management systems to often are too complex and not adopted to industrial needs. Quite uniquely in this research area, all his PhD students have been financed by industry. The sustainability management research carried out here is, hence, truly motivated and initiated by the needs of industry. Besides his involvement in environmental research Professor Staffan Laestadius is also conducting and leading research projects on Policy and Innovation in Low-Tech industries and on Chinese ICT exploring how their telecom industry has emerged with investments from West and by joint ventures with foreign firms. He is also conducting research on how tightened environmental policies may induce competitive advantages in the vehicle industry.

3.3 IVL Swedish Environmental Research Institute

IVL, Swedish Environmental Research Institute, is an independent research organisation, operated as a limited not-for-profit company, supported and governed by the government (Ministry of Sustainable Development) and Swedish industry. The goal is, in agreement with authorities and industry, to create scientifically based decision-making information for a sustainable society. Through a half-century of scholarship, IVL has built a reputation for reasoned analysis on important problems and for developing innovative solutions to environmental challenges.

The Research Leader Ulrik Axelsson at the IVL Swedish Environmental Research Institute provides support to this research project. He has conducted several research initiatives looking for roads on how to make the environmental management work in industry and authorities' work with ensuring industry fulfilling the aim in Swedish environmental legislation more efficient. His initiatives on the environmental management side has lead to the creation of simplified methods of working with guidelines focusing more on performance improvements than on documentation procedures.

4 Research Methodology

The study was conducted as a questionnaire survey study with some complementary deep interviews, primarily aimed to clarify and confirm the answers but also to provide new knowledge which is not covered by our questionnaires and our initial view on what aspects that could be of importance. Another part of the study was to conduct a literature study that is discussed in section 5 *"Theoretical and Conceptual Framework"*.

A questionnaire was sent out to the following five categories of people:

- Country Sustainability Controllers at ABB, 29 of 46 i.e. 63,0 % replied (abbreviated ***ABB Sustain Mgrs*** in the following text).
  The ABB Sustain Mgrs are located in those countries where ABB have factories and/or service and major construction activities. The ABB Sustain Mgrs are responsible for establishing and communicating ABB's social and environmental policies, programs and procedures to all ABB operations within their respectively country. The ABB Sust Mgrs have a country level responsibility with respect to sustainability; some of them work full time and other only a minor time with sustainability issues depending on the size of the operations in the country. The 29 ABB Sustain Mgrs responding are located in the following countries: Benelux, Brazil, Canada, Czech Republic, China, Colombia, Denmark, Estonia, France, India, Indonesia, Ireland, Italy, Japan, Malaysia, Mexico, Norway, Poland, Portugal, Russia, Singapore, Saudi Arabia, South Africa, South Korea, Spain, Sweden, Switzerland, Turkey and UK.

- Group Account Managers at ABB, 19 of 29 i.e. 65,5% replied (abbreviated ***ABB Account Mgrs*** in the following text).
  The ABB Account Mgrs are sales managers for specific group accounts. The 19 ABB Account Mgrs responding are responsible for the following group accounts: Alcan, Alstom, BASF, Bombardier, BP, Daimler Chrysler, Dow Chemicals, DuPont, E.on, EDF, ENI, Ford, Hagemeyer, Outokumpu, PSA (Peugeot), Renault, Rexel, Shell, Stora Enso and UPM-Kymmene. These companies together have more than 2 200 000 employees and 1 500 Billion USD revenues. One ABB Account Mgr is responsible for two group accounts; all the other are responsible for one group account each. The Account Mgrs are located near the group account companies' main operations in the following countries: Canada (1), Finland (2), France (3), Germany (2), Italy (1), the Netherlands (1), Sweden (1), Switzerland (2), UK (2) and US (4).

- Actors in the financial sector, 25 of 27 i.e. 92.6% replied. (These replies are divided into three groups in the evaluation, abbreviated ***Finance Banks***, ***Finance SRI Adv*** and ***Finance Port Mgr/Analyst*** in the following text. The two former groups are displayed in figures and discussed in the text but the responses of the latter group is only discussed in the text and not depicted with the responses of the other groups in the study.)
  The respondents could be viewed as 26 out of 27 since, one of the non-respondents, a Market Assistant, did actually respond, but with an answer being nothing else than a few forwarded documents originating from the Swedish Bankers' Association. This response could, of course, be considered as an answer and will be taken into account in the report, but it does not contribute the analysis of the questionnaires and, thus, seen as a non-respondent. (Since the respondents of ***"Finance Port Mgr/Analyst"*** constitute 7 answers and the fact that one of the other respondents did only provide us with documents from the Bankers' Association the

total number of responses from the financial sector displayed in the figures are 18.)
The banks, insurance and fund companies included in this study are the major players in the Nordic bank and insurance market with a focus on the Swedish based players. One of the larger banks in Sweden was not contacted though due to the bank's insufficient aid and contact information available to us on corporate levels. Two international investment banks, both financed and governed by democratic states, are also a part of the financial group in this study.

This financial category is in the analysis of section 6 and 7 divided in two relatively distinguished groups. The first one ***"Finance Banks"*** is SRI analysts and environmental managers at banks, fund and insurance companies and the second group ***"Finance SRI Adv"*** is SRI advisors in SRI advisor companies. The number respondents of these two groups are 10 and 8, respectively. This makes up to a total of 18 respondents. Then there are 7 respondents from the banks' and insurance companies' fund managers and credit analysts, which constitute the mainstream financial community, seen from the agenda of inclusion of corporate extended responsibility. This respondent group is denominated ***"Finance Port Mgr/Analyst".*** Since these respondents are not as well acquainted with terminology and various methods, tools and international initiatives for how approach environmental and social aspects as the other respondent groups they could not understand most of the questions put to them. This respondent group was, therefore, not able to provide an answer to most questions either. This sub group – consisting of fund managers and credit analysts – did, hence, only answer a very limited number of questions. These are analyzed separately from the other respondent groups' answers. This group is, hence, not displayed in figures comparing the answers from the respondent groups, see section 6 and 7, but the answers from this group is displayed in section 8.
The national belongings of the SRI advisor firms in the study are as follows: 2 Swedish based firms, 2 Swiss based firms, 2 UK based firms, 1 Norwegian based firm and 1 US based firm. The banks, fund and insurance companies whose SRI analysts and environmental managers are contributing to the study are based in following countries: 7 in Sweden, 2 in Finland and 1 in Luxembourg. Two of these ten banks are investment banks. The banks, fund and insurance companies of the 7 responding fund managers and credit analysts are all based in Sweden.
The international SRI advisor firms participating in this study are all major and well-established firms within the industry. The advisor firms chosen are, furthermore, the ones that come out top-rated by Mistra's initiated review 2004: *Values for Money: Reviewing the Quality of SRI Research.* (SustainAbility and Mistra, 2004).

- Researchers in academia, 23 of 28 i.e. 82.1 % replied (divided into two groups in the evaluation, abbreviated ***Academia Env Mgt*** *and* ***Academia Acc/Inv*** in the following text).
  This category was divided in two fairly distinguished groups. The two groups are based on the type of research they are conducting. The first group of researchers, ***Academia Env Mgt,*** is working with general environmental management and tools for environmental analysis, predominantly LCA. The educational background of these researchers is often related to natural science and engineering and they are oftentimes also working in such departments. The second group, ***Academia Acc/Inv***, consists of researchers, working with companies' performance, environmental and social performance related to environmental accounting, sustainability reporting and sustainable investments. The researchers of this group are concerned with the company performance of environmental and social aspects. Oftentimes the concern for these tools and methods – from the accounting and investment perspective – are linked to the economic benefits and costs from working with the company extended responsibility aspects. The educational background of these researchers is often related to economics or business administration and they are oftentimes also working in such departments.

The number of respondents of the Academia Env. Mgt and Academia Acc/Inv groups are 13 and 10 respectively.
The national belongings of the researchers of the Academia Env Mgt group – that is where the researchers operate – is 9 in Sweden, 1 in Denmark, 1 in Finland, 1 in Norway and 1 in Switzerland. The national belongings of the researchers of the Academia Acc/Inv group – that is where the researchers operate – is 3 in Sweden, 2 in Germany, 2 in the UK, 1 in Australia, 1 in Denmark and 1 in Finland.

- CPM companies/ABB customers, 9 of 25 i.e. 36% replied (Named ***Customers*** in the following text).
  Questionnaires were sent to all CPM companies and to the 19 group account companies were the ABB Account Mgrs replied. The response level for the CPM companies was high, all except one of the CPM companies responded. The response from the ABB's customers was, however, weak – 3 of 19 responded. These 19 companies are major ABB customers each assigned, within ABB, an own Group Account Managers and these specific account managers constitute a part of this study since they are included in the ***ABB Account Mgr*** respondent group above. Eight of the respondents of the Customer group are located in Sweden and one in France. Even if all the CPM companies are not key accounts for ABB, these companies to some extent purchase products from ABB. All of them where asked to answer the question from the perspective of being a customer evaluating and buying ABB products. The answers for this category are assumed to reflect the customer perspective. The respondents in this category are from the following companies: Akzo Nobel (1), Bombardier Transportation (1), EDF (1), IKEA (1), ITT Flygt (1), SCA (1), Stora Enso (2), Tetra Pak (1). It should be noticed that the response level for this category is significant lower than for the other categories; additionally the interviewed people are mainly from Sweden in contrary to the other categories embracing people from many countries.

In total, when summing up all respondent groups, 105 of 155 questionnaires were filled in and sent back, or answered via the telephone in a few cases, which gives us the overall response rate 67.7 percent for the entire study.

4.4 Questionnaires

Four questionnaires were used. The content of the different questionnaires was in principle the same regarding its core content, but the questions were formulated from somewhat different angles depending on the roles and responsibilities for each category. The questionnaires were adjusted to fit the experiences from the respondents' own professional position.

4.4.1 The ABB Questionnaire

The ABB Sustain Mgrs and ABB Account Mgrs received the same questionnaire. The respondents were asked to answer the questions as being a supplier. Some questions regarding the perceived benefits from using the LCA tool was added in this questionnaire with the aim to make a longitudinal study, comparing the relevant subset of data from the current study with the matching data from an LCA study carried out 2000 and published 2001 (Laestadius and Karlson, 2001; cf. Karlson, 2002).

4.4.2 The Customer Questionnaire

The respondents from the CPM companies and the ABB group account companies were asked to answer the questions as being the purchaser of ABB products.

4.4.3 The Financial Questionnaire

The respondents from the financial sector were asked to answer the questions as being the analyzer of the sustainability performance of ABB and ABBs products.

4.4.4 The Academia Questionnaire

The respondents from academia were asked to answer the questions as being an external observer of the sustainability actions and performance of ABB and ABBs products.

4.5 Questionnaire design

The questionnaires were divided into two sections, question 1 to 14, respectively 15 and following. The four different questionnaires can be found in the appendix of this report.

4.5.1 Question 1 to 14

The first section of the questionnaires includes multiselection questions with three to nine alternatives per question to tick. For the first six questions the respondent was asked to select one alternative for each question. For question 7 to 14 the respondent was asked to select one alternative for each question, but if relevant, they could also select two alternatives for each of these questions.

In order to render it relevant for the different categories of respondents the questions 9 to 14 could not be put to the four respondent groups in an identical wording. Some questions were adjusted to fit the position of the four main respondent categories. The most common alteration to the statements in the questionnaire was given to the Customer main respondent group. For Customers the word 'Companies' was often replaced by the word 'Suppliers' as a way of indicating their role, and referring to their experiences, in their procurement activities.

4.5.2 Question 15 to 31

The second section of the questionnaire covered the responses to a number of normative statements. The respondents were asked to declare to what degree they agreed to the normative statements that was provided to them. The respondents were given the possibility to answer the statements by putting a check mark on a scale between one and five. One stands for full disagreement and five for full agreement with the statement.

In order to render it possible for the respondents of the four main groups some statements could not be put to them in an identical wording. Some normative statements were adjusted to fit the specific realities and experiences of the four main respondent groups. The most common alteration

to the statements in the questionnaire was given to the Customer respondent group. For Customers the word 'Companies' was often replaced by the word 'Suppliers' as a way of indicating their role, and referring to their experiences, in their procurement activities.

4.5.3 Question 32 to 34

The ABB and Customer groups received three additional questions to take a position on, since these two groups are relevant to compare with an earlier study carried out on ABB's work with Life Cycle Assessments (LCAs) 2000 (for more information go to: Laestadius and Karlson, 2001). The results from the longitudinal component of the study are displayed in section 8.

5 Theoretical and Conceptual Framework

5.1 Introducing the structure

The theoretical and conceptual framework of this research report is relatively holistic depicting some deeper abstract discussions on theoretical paradigms and worldviews. The discourse, taking place in the *"Theoretical and Conceptual Framework"* section ranges from how the *sociology of research* and the seemingly dichotomising paradigms of – *management* and *economics*. In management we focus on *management control* theories – *agent*, *institution*, *stakeholder* and *legitimacy* – and in economics we focus on *institutional economics* theories – *property rights* and *transactions cost*. These theories selected, out of the numerous schools of both paradigms, have common threads analysing courses of events from an individual and micro-level perspectives, not only taking pure fiscal measures perfectly rational actions into account but rather very human behaviours of situational dependency.

The section, thus, attempts to illuminate how paradigmatic belongings like the few millenniums old rift between the schools of management and economics may affect our ability of questioning what we see and so often forgotten refraining us from seeing at all. Theories, being models of understanding and analysing the world, bringing mindsets into trajectories and, hence, as a consequence obstructing thought in the surrounding topography.

The theories of the two subsections *Management Control* and *Institutional Economics* ought, for most readers, be easily applied to their own experiences from daily industry operations. Deeper philosophical discussions are held in sections 1.2 and 1.3 that are valuable for the readers interested in the concepts of sociological research and seeing why theories are chosen the way they are in this report and how they the are applied.

The *"Theoretical and Conceptual Framework"* section is, divided into three subsections hence, structured as follows: 1) *Introducing the structure*, 2) *The applied theory – a conceptual explanation body or a constraint of thought*, 3) *Sociological Paradigms*, 4) *Management Control*, 5) *Institutional Economics* and 6) *Extracting the Theoretical Essentials for the Analysis*.

5.2 The applied theory – a conceptual explanation body or a constraint of thought

The philosophical discussion taking place in this subsection elucidates the grounds for the theoretical framework of this report to comprise the seemingly dichotomising paradigms of – management and economics – bearing in mind the essence of open-minded emancipatory, interpretavistic and critical inclination of the researcher, not to fall into constrained sights.

A theoretical framework can be used to support the observations made in the study by providing conceptual explanation-bodies to increase the likelihood for detecting and possibly grasping the underlying reasons. Applying a theoretical worldview is, however, no guaranty for a profound understanding. On the contrary, erroneously applied theoretical approaches may indeed decrease

the potentials for seeing unanticipated trajectories. This seemingly inconsistency herein from the nature of theories, since when providing conceptual explanation-body, that delimits the impenetrability imbuing everything and us, it implies the espousal of simplifications and generalisations. Theories may, thus, lead thought and reflective thinking into trajectories, distorting the possibilities to see the whole picture, if it recedes outside the applied explanation-body. The theoretical paradigms are also, leading thoughts in trajectories that tend to clash against other trajectories which is common in the areas of business administration and economics. This rift between the two paradigms is not entirely new either. The clash was apparent already among the ancient Greeks which divided individualism into a dichotomy of rational calculation – based on the individual as the social unit – and the family – managed by decision-making free men (cf. Ekelund and Hébert, 1997). The former gave rise to macro-based hedonic calculus theoretical framework, diminishing marginal utility and resource allocations, and the latter to micro-based manager of households. These paradigms are not only extensive and contradictory, but also incongruous within themselves. This has led some sociologist to question the need for theories at all (cf. Silverman, 1997).

Bruno Latour (1999) has put the blame for the divide of mammothian dignity on the old Greeks – the absolutistic Plato and the relativistic Protagoras – leading to political rationalism clashing against subjective opinions. The attempt here is not to reconcile a few thousand years of epistemological rift between the paradigms of business administration and economics but to apply the different worldviews to studied phenomena from more than one angle. It should also be noted that the theoretical evolution within paradigms has evolved in diverting directions, expanding the paradigms into many diversified schools and as a result the inherited contradictory between them seems increasingly totemistic.

Being nurtured and enclosed within a worldview, theoretical, theological, cultural or ideological – may as indicated above lead to an ignorance of many aspects of life. For instance if being to deeply sheltered within a trajectory when conducting a study structures and incentives among actors may not be reviled, leaving occurrences only fitting the applied theory to be visible for the researcher. Claes Gustafsson (1994) describes how values, processes, actions and habits make us ignorant of many aspects of life, but also totally unaware that we can in fact question them. Gustafsson coin a phrase for describing this phenomenon (translated into English by Cerin, 2003): *the wall of self-evidence*. We do, thus, emphasise many fundamental elements of life in axiomatic and spontaneous way as if it was proper and apposite. An example, in his own wording (translated into English by Cerin, 2003): *>>Freedom<<, >>democracy<<, >>fairness<< often reside in this level. To ask someone why freedom, democracy and fairness shall be treated as worth striving for, usually leads to astonished dumbness – >>its obvious that it's good<<.*

Similar reactions tend to meet actors asking the reason for working in a certain way, why the methods and tools are applied, perhaps even more so fierceful. If asking what the sustainability or sustainable development is, how to define the term and how to strive and progress towards it may encounter some harsh feelings too, leading to comments like *"it's obvious that it's good"* and *"are you against the sustainability agenda?"* So, the walls of self-evidence fortressed by ad-hoc constructed foundational images constitute protection against deductive testing. We can identify these trajectories as absolute truth systems which and if reverting back to Gustafsson (1994) he describes our cultural etiquettes of acting have ethos that appear absolute but may in the view of other cultures appear very relative and even at odds with norms. Some classic examples come from eating (rats-not rats, cows-not cows, pigs-not pigs) norms, but also regarding drugs and funerals. In order to drive deductive testing Alvesson and Willmot (1996) stress that the underlying value-orientations have to be taken into account. The taken for granted domination of metaphors can then be

unsettled. A relativistic method can be used to detect the spontaneous (absolute) roles that depend on numbers of supporters, akin to mob-psychology. This approach is apposed to the absolutistic mindsets that equalises relativism as an offspring of society.

5.3 Sociological Paradigms

A framework for explaining and structuring the worldviews and nature of social (non-natural) sciences has been developed by Burrell and Morgan (1979). The framework of sociology of science illustrates social theory by adopting a 4-fielder which contains two dimensions that encompasses four paradigms. The four paradigms are continuums along two axes where each axis, supposedly, runs between dichotomising ends. The continuum of the *nature of social science* runs along the *subjective-objective axis* and the *nature of society* along the *regulation-radical change axis*.

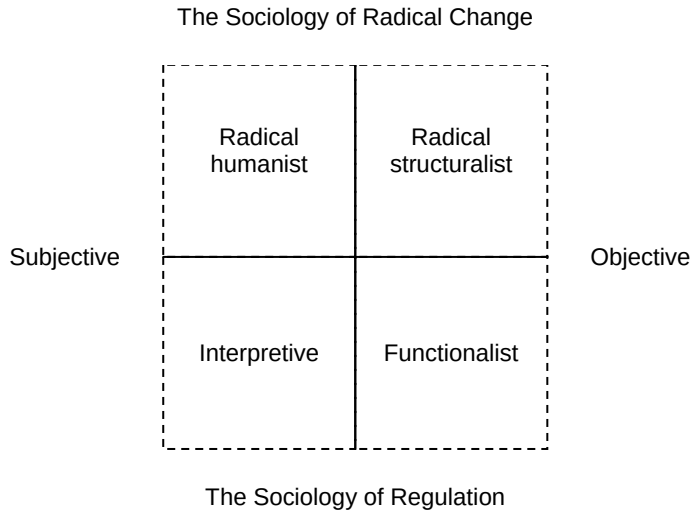

Figure 1 Four paradigms for the analysis of social theory (Burrell and Morgan, 1979).

This way of structuring sociological paradigms and organisational analysis is according to the authors themselves *"a powerful means for identifying and analysing the assumptions which underlie social theories in general."* The framework of Burrell and Morgan has really been groundbreaking in organisational research, sometimes though the model has been adjusted to suit the realities of other contexts by altering dichotomies between which the continua run or by modifying the continua themselves. Customised versions of Burrell and Morgan's (1979) 4-fielder, describing the paradigms of social theory, has been used by several authors in environmental organisational research (Rikhardsson and Welford, 1997; Welford, 1997b; 1998; Dobers *et al.*, 2001, Cerin 2003), but also unmodified as done by Sandström (2002).

According to Cerin (2003), Burrell and Morgan's way of structuring the nature of society by ambiguously dichotomising regulation to radical change may lead to misinterpretations. These concepts of regulation and radical change are, on the contrary, significantly overlapping. The two landmarks in environmental business related literature are Porter and van der Linde (1995a) and Schmidheiny and BCSD (1992), providing the readers with success stories where economic gains for companies and gains for the environment coincides leading to win-win situation. This is

suggested to be a general phenomenon where regulation merely serves as an enlightener calling for managers' voluntary actions by merely pointing out the financial benefits for the actor. This approach of voluntarism is, however, not much of radical change when no economic benefit is obvious as alluded by the theoretical critique on Porter and van der Linde's writings by Palmer et al. (1995) and Cerin (2005c). So if it would be cheaper to create an image about its own goodness – marketing – than to proactively create improvements of e.g. environmental performance the incentives for just market a better image would be high. These legitimisation activities, detached from firm true performance, are by Rikhardsson and Welford (1997) referred to as a case of eco-modernism which highjacks the environmental agenda. To illustrate these hijackings Rickhardsson and Welford cite Financing Change by Schmidheiny et al. (1996) "We nowhere claim that tougher regulations improve a company's or a country's competitiveness…the world is moving towards market frameworks which reward eco-efficiency… and comments the writings as follows: *"The main thrust of the book is that business can be trusted and can be left alone to cure the environmental problems of the world."*

Contrary to the view of the eco-modernists, a prerequisite for attaining radical change is according to Croci and Pesaro (1998) and Börkey et al. (1999) to, not only have a set of regulations, but to strongly support these with credible sanctions for non-compliance. This view is in line with Hobbes (1651) who recognised the essence of power behind a goal. If no authority supporting the words, the goal will be turned into glossy depictions. Schmidheiny et al. (1996), however, does not even identify regulators as a player in the relationships between financial markets and eco-efficiency, merely arguing for the need of liberating business from the yoke of regulations on industry. But, as Cerin (2003) describes "By leaving out the control dimension on the radical change side the field is open for management to actions that are the cheapest in the environmental agenda…to go for real change and improvements or merely image creation. "

Less overlapping concepts of the axis of nature of society displayed by Burrell and Morgan – see the regulation-radical change axis in figure 1 – are the order-conflict axis by Dahrendorf (1959) which is the continuum also adopted by Welford (1998) and the status quo-change axis of Rikhardsson and Welford (1997). Cerin (2003) sees the concepts of these axes are more coherent and are more suitable for describing the nature of society at least from an environmental and social responsibility perspective than the ambiguous dichotomisation of regulation-radical change. The status quo-change continuum is characterised by states of being (resulting from structures) while the order-conflict continuum describes the structures (resulting in states of being). If focusing on a continuum of voluntarism-domination, however, the powers that constitute the structures will be illuminated. A foundation is then created for discussing societal behaviours, structures and dependencies as well as policy suggestions, hopefully, in a more constructive way than the order-conflict dichotomisation provides Cerin (2003).

Consequently, the four competing paradigms of management and economic theories for describing environmental and social responsibility are illustrated in a four-fielder, figure 2, below and briefly described as follows:

- The concern of the lower-right paradigm field is to *explain*, by applying models and methods of natural sciences to the society – and hence human behaviour.
- The concern of the lower-left paradigm field is to *understand* the individual within its framework, which involves questioning models and concepts – e.g. organisations.
- The concern of the upper-left paradigm field is to *criticise* the societal structures that dominate the consciousness of individuals – wedged from their own.
- The concern of the upper-right paradigm field is to *change,* due to crises generated by fundamental conflicts of power relationships in society – e.g. environmental.

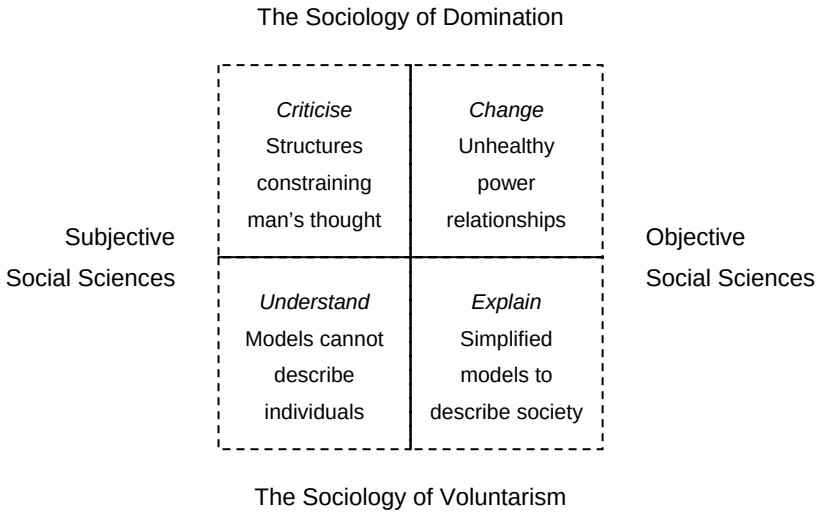

Figure 2 Four competing paradigms to research of management and economic theories for describing environmental and social responsibility from Cerin (2003).

The eco-modernist belongs to the positivists seeing complex relations of social character through the lenses of simplified mathematical or managerial models and the statements from those in power of information – without taking the information asymmetries into account. Research, according to Gustafsson (1994), if it is to be called research – and not tragicomic entertainment or glossy consultancy – shall keep the notion of relativism in mind and being based on the three pillars critically, truth and *intellectual honesty*. A dominant research school, however, is the hermenuetic Habermas and the Frankfurt School where the aim of research is to understand the socio-cultural world but not to alter it (cf Burrell and Morgan, 1979). To change and influence the world is an aim for the critical and change oriented researchers. The Habermasian researcher should, therefore, be emancipatory, dialectal and hermeneutic. Being dialectal involves transcending the antinomies of e.g. the subject and object. For Welford's Sustainability agenda a central piece is the dialects and their contradictions between private interests (economic efficiency) and the public interest (social efficiency).

As put by Habermas (1996) all social activities herein from social interactions, even in the simplest of civilisations, and the fundamental question is, thus, dual: 1) How is social action possible? and the other side of the coin: 2) How is social order possible? This divide indicates the importance of the social hierarchy when analysing simple interactions. Habermas has developed a theory of *communicative competence* dealing with these ordeals by dividing speech into political macro-structures and individual micro-structures. The potential interaction leading consensus are placed into a continuum between the dichotomies of *ideal speech situation* where consensus is reached without the intervention of power and *communicative distortion* where unequal power leads to a kind of consensus (cf. the collective works of Habermas, 1976; cf Habermas, 1996). Cerin (2005c) shows the immense importance of asymmetric power and information relationships between firms, customers and regulators in his fundamental theoretical critique on Porter and van der Linde's (1995a; 1995b) positivistic analyses where the impacts of these matters are not even thought of. Similarly, Cerin and Karlsson (2002) discusses how information asymmetries along the value chain affects the solutions retrieved so far, which is built on the theoretical groundbreaking Nobel prize awarded article in Economics: *A Market for Lemons* (Akerlof, 1970).

The production of knowledge fulfils different needs of the producer and Gibbons *et al.* (1994) divide the knowledge production into A) production for practical usefulness and B) production for the shelf. In this aim Gustafsson and Welford depart. Welford (1997b; 1998) is more normative than Gustafsson and, thus, going one step further, not being satisfied with understanding individuals and their actions but to criticise the structures and to change power relationships for improving environmental and social conditions. The environmental degradation needs to be halted and severe poverty needs to be terminated and, therefore, environmental and sustainability research have to be critical and change oriented, aiming for being useful in practice. Alvesson and Willmott (1996) argue for critical theorists – those that criticise and argue for change – ought to abolish the idea of objective researchers since when interpreting others it requires putting on own gloss on findings. Critical theorists should, hence not be passive observers, but active agents for change. For Gustafsson (1994) the deeper understanding of individuals, their cultures and actions are the ultimate goal of research not seeing a need to loop back to the studied object to alter it to something perceived as better (by some). If aiming for change within the sustainability agenda the research must break the domination of mainstream research on business and the environment and especially consultancy works that reinforces the current structures and status quo. According to Welford this is due to the failure of interpretivists and positivists to separate knowledge from how it is used. The aim of research is then to be emancipatory critical accordingly the: *"researchers should become involved in programmes of change capable of bringing about improvements in the problems identified, making society better. This is the ultimate test of useful research."* (Welford, 1997b; 1998)

5.4 Management Control

There are many definitions on management control, most relating to the organisations internal. According to Rotch (1993), the control process of assuring that the organisation does what management wants done implies that systems for management control must be broadly conceived. He argues for a broad conception of management control and conceives, therefore, it as consisting of at least five components such as performance measurement, strategy, organisation structure, direction and motivation. To the U.S. Office of Management and Budget (OMB, 2006): "*management controls should be an integral part of the entire cycle of planning, budgeting, management, accounting, and auditing."* The theories within management control are, hence, of operational character and closely related to the realities of observed organisations and their people – from ideas, carryout and follow-up.

To establish a framework for supporting the understanding of the dynamics of actors and their interactions and relations management control theories are adopted. Much is drawn upon the following theories: agent theory, institutional theory, stakeholder theory and lastly the concept of legitimacy which may be argued not to be a stand alone theory, but is treated as such here due to its keystone position in this research. One way of looking at the theoretical descriptions of this management control section is that each theory is not a totally separated theoretical field of its own with no influences from the other trajectories. The theoretical approaches are also used to describe similar societal occurrences but from different angles of approaching them with different goggles resulting in different insights and weaknesses. The writings referred to sometimes being the same is a sign on the closeness of the phenomena dealt with within these theoretical concepts. It would, therefore, make sense referring to these as theoretical concepts instead of denoting them to be separate theoretical units.

5.4.1 Agent Theory

The self-interest concerned company management is in this theory illuminated which differs this theory especially from institutional theory, but also stakeholder theory Greay *et al.* (1995). According to some, agent theory resembles neo-classical theory in economics by residing on the assumption of perfect markets and the rational and opportunistic man (Gray *et al.*, 1995; Ljungdahl, 1999). The control problems of concern, according to Jensen and Meckling (1976) is for the owners of firms, principals, to deal with the by them appointed company management, agents.

Speaking against the idea that agent theory should be relying on neo-classical theory in economics is that asymmetric information is central in the analysis and explanations of the control problem. Actually the problem, as illustrated by Barney and Ouchi (1986) arises from asymmetric information. The larger the agent's information advantage is the more difficult it is for the principals to control and prevent the agents from acting in their own self-interest at the expense of the owners. The cost is therefore to *"structuring, bounding and monitoring contracts"* which is denominated the agent cost (Jensen, 1983). The phenomena of annual fiscal reports and the audit of these by accounting firms are measures for decreasing the information asymmetries and, thus, an agent cost. Examples exist when the reporting and accounting rules have been too lax. One such is when the requirements on fiscal reports did not ensure a fair picture of the firm and when some accounting firms (employed by the principal) also acted as consultancy firms (employed by the agent). The accountant was now also employed by the agent, the actor which it should control for the principal, and had now a biased set of self-interests. The example referred to is Arthur Andersen-Enron scandal depraving the owners of their savings and the employees of the jobs (cf. Stiglitz, 2003)

Voluntary reporting on corporate responsibility is not primarily seeking legality but legitimacy. The content may, hence, by being adjusted to fit the values of various stakeholders rather than to fit the actions of the firm it is to describe. Reports to different stakeholders may, thus, differ or even be contradictory (cf. Cerin, 2002). Meyer and Rowan (1977) coined this paradoxical behaviour decoupling and Ljungdahl (1999) refers to environmental reporting as a tool for diversion in the political field and signalling in the stock market.

5.4.2 Institutional Theory

In order to explain changing institutions and to understand how organisations take on similar practice, so called isomorphic pressures institutional theory serves as a good foundation (e.g. DiMaggio and Powell, 1983; Zucker, 1987; Mezias, 1990). The notion of decoupling deals with e.g. structures that are separated from activity as a means to avoid outside pressure on the institution in question (Meyer and Rowan, 1977). This phenomenon is an irrational behaviour from an internal efficiency perspective, but serves as means for managing inconsistent norms. The balance can involve conflicts between business strategy and societal values or organisations' legitimacy and efficiency (Meyer and Rowan, 1977; Meyer and Scott, 1983).

If a firm decides to decouple its communication – to A) its stakeholders and B) to the firm's real actions – it may be a case *isomorphic* copying of other firms's stakeholder communications which is seen as superior by the community. In fact, even though environmental reporting in Ljungdahl's (1999) study was considered necessary among many agents few could explain why, but rather refer to that *"Everybody else does it"*. The decoupling activities may also be a way for the firm to carry out business as usual and, thus, hijack the environmental agenda (cf. Rikhardsson and Welford, 1997). Carrying on business as usual is to copy its own past behaviour in its real actions and e.g.

environmental performance is referred to automorphism (Schwartz, 1997; Czarniawska, 2002). So, company communication that is decoupled from its other communications and actions could be not well implemented copying of other firm's communication, isomorphism, or a strategy to continue business as usual by diverting attention, autophormism.

5.4.3 Stakeholder Theory

The coalition of stakeholders that are involved in the control of enterprises and organisations are recognised by Lowe (1971). The result is a young theory that is coined by Lowe (1971) and defined by Freeman (1984), describing the stakeholder as an all-encompassing *"any group or individual who can affect or is affected by the achievement of the organisation's objectives"* (Freeman, 1984). The common way to classify stakeholders in industry is to originate from a company in focus, usually a stock exchange listed firm operating in a traditional industry producing physical products or other rather tangible services. Donaldson and Preston (1995) characterise stakeholders in terms of possession: Those with a stake in the company and those influencing by creating opinions e.g. in environmental matters. Another way of putting it, is to divide the stakeholders of the firm into *primary* and *secondary* ones (Clarkson, 1995). The former grouping is of a normative character – in terms of coinciding with societal good – while the focus of the latter is instrumental enabling company management to estimate the reactions of actions taken and thereby as Freeman (1984) sees it determine the possible effects from decisions made and strategies to encounter. The Clarkson definition and ranking of stakeholder importance:

- *"Stakeholders* are persons or groups that have, or claim, ownership, rights, or interests in a corporation and its activities, past, present, or future. Such claimed rights or interests are the result of transactions with, or actions taken by, the corporation, and may be legal or moral, individual or collective."
- "A *primary* stakeholder group is one without whose continuing participation the corporation cannot survive as a going concern."
- "*Secondary* stakeholder groups are defined as those who influence or affect, or are influenced or affected by, the corporation, but they are not engaged in transactions with the corporation and are not essential for its survival."
- (Clarkson, 1995; 106f)

There exist differences in opinion on the pros and cons of shareholder versus stakeholder theoretical approaches (cf. Baden 2001; Figge 2002b, 2004). Shareholder theory contends that the corporation's sole responsibility is profit maximum for shareholders (e.g. Friedman, 1970), whereas stakeholder theorists argue that the corporation should also be run for the benefit of other interest groups. Which of the two views one takes has implications for the notion of corporate responsibility and, thus, having implications for society's approach for approaching sustainable development. Shareholder theorists argue that profit maximisation for the shareholder are ethical (presuming one stays within the law). Stakeholder theorists argue that this is not possible unless the interests of other stakeholders – such as employees, suppliers and civil society organisations – are taken into account which is one ground for the interest from the financial market into extended responsibility of companies and socially responsible investments.

5.4.4 Legitimacy Theory

The concept of legitimacy is very fundamental in explaining the phenomena of how corporate and actors' handle environmental and social aspects with regards to regulations (cf. sociology of

domination) and to altruism (cf. sociology of voluntarism). Legitimacy is often handled within the theoretical domains of institutional theory or stakeholder theory. By some, e.g. Ljungdahl (1999) discussing the occurrence of corporate environmental reports, legitimacy is seen, named and discussed as a theory – legitimacy theory. Here too, in this work, legitimacy is referred to as a theory along side with the other management control theories dealt with. Legitimacy actions may take place if various actors and institutions find it more profitable to just provide their stakeholders with an image instead of e.g. sought for radical change of behaviour and identity. Legislators aim at diminishing the scope for these of optical illusions actions for the benefit of legality seeking agents.

All organisations, including firms, need societal support for their existence. They need a licence to operate from their stakeholders in the struggle for the resources in society e.g. by investors and customers (Clarkson, 1995). The support from secondary stakeholders, influencers, provides the immaterial resource of moral support – e.g. the support from Greenpeace would for many firms be a strong legitimisation of its actions. The legitimacy a company enjoys may, according to Schwartz (1997), be independent from the company's performances. Large firms, moreover, to a larger degree engage in legitimising behaviour than smaller firms. A prerequisite for achieving legitimacy is to attain a correlation of the company's own perception of itself and the perception that its stakeholders have about the company (Ljungdahl, 1999).

Compliance with the law in all aspects is, however, no prerequisite for attaining legitimacy from its stakeholders as Pfeffer and Salancik (1978) see in their separation of the two concepts. This opens up for a strategic view on legitimacy which is supported e.g. Oliver (1991) within the institutional research field but to a larger extent dealing with the limitation of actions for company management (Suchman, 1995). Consequently, as Greay *et al.* (1996) describe, a firm in a problematic situation may try to A) educate its stakeholders about the company's intentions to improve its performance, B) change its stakeholders' perception of the actual problem or C) change its stakeholders' expectations on the company's performance.

5.5 Institutional Economics

Institutional economics comprises schools which incorporates transactions costs into the analysis, rejecting the traditional and predominant neoclassical assumption of no the perfect market and the no the economic man being based on total rationality. Some schools within institutional economics, however, do accept the notion static equilibrium but these will not be dealt with here in this section and project. By bringing transactions costs property rights and institutions come into plays. These concepts how vital they may be in the real world economy are not incorporated into the neoclassical static equilibrium analysis.

5.5.1 Property Rights and Transactions Cost Theories

The 1937 article of Coase on the existence of firms, read institutions, turned around microeconomic theory by arguing that unless there exists transactions costs there is no need for firms, since all actors know everything at no costs at no time delay. If there are no transactions costs why would they then need to organise into institutions? It took a few decades for the theory to gain grounds but by the time the second hallmark article of Coase arrived, in 1960, regarding social costs the ideas on transaction costs and institutions had permeated research groups within economics. Thus, seeing social costs as an institutional problem of deficient property rights quickly found receptive ears in the research community. When Coase became a Nobel Prize Laureate 1991

the two articles from 1937, *The Nature of the Firm*, and 1960, *The Problem of Social Cost*, essentially constituted the foundation for the prize.

Traditionally, the apprehension of the neoclassical model has been that there are no *external costs* to the economy, since everything is known and, thus, taken account for and incorporated. Then, Pigou (1912, 1920) introduced the concept of externalities, one hurting the other, where actors causing effects on others are not paying for it or, if it is beneficial to the receiver, not receiving compensation for it. These costs should, hence, be incorporated into the accounts for those causing them – internalised. This way of thinking has been very influential in economic theory during the 20th century and has also dominated regulative practice e.g. in the OECD countries. But, according to Coase this Pigovian approach is too narrow since it completely neglects the reciprocity aspects of the matter. The fundamental problem is not one hurting the other, but a problem of conflicting resource aims. The societal problem is, thus, a reciprocal one where the causality is dual and where both sides of the conflict should be looked upon in the analysis in order to minimise the overall societal cost (Coase, 1988). This is the core essence in the Coase theorem, coined by Stigler (1966) by using Coase's conflicting farming land use example as follows: *"… the correct social results … would arise if the cattle and grain farms were owned by the same man. The Coase theorem thus asserts that under perfect competition private and social costs will be equal"*. New regulatory regimes, not based on the polluter pays principle, have lately been implemented e.g. in the USA as a trade in rights to emit acidifying substances and in the EU (EU ETS) as a trade in the rights to emit global warming substances.

Continuing with Coase's (1991) Nobel Laureate lecture: *"It is obviously desirable that these rights should be assigned to those who can use them most productively and with incentives that lead them to do so,…"* The legal system should besides ensuring the rights in such manner also ensure low costs for their tradability by clarity and less onerous administration. Coase, hence, views the legal system by using British case law as an illustration, as an extension to the market economy, in practice aiming at lowering transactions costs in resource conflicts – delimiting the societal costs. This attempt to improve the allocation of resources is according to Domeij (2001) also well-established in Swedish case law where the *concerns of turnover* are considered. Coase (1960) stresses that the aim of avoiding the most severe harm implies looking at the reciprocity both in total and on the margin. Property rights for environmental aspects in a value chain should, hence, according to Cerin and Karlson (2002) not be assigned to those actors that creates the direct impacts but to those who has the greatest potentials to alter the dependence on them. Such an approach will foster technological and system innovations. Lenzen *et al* (2006) have articulated the theorem as *"…like our and in Cerin and Karlson's idea, responsibility is assigned according to process knowledge and influence, not impact:"*

So, the legal support is essential, *firstly*, to define ownership to the resources. If no one owns the possessions it cannot be traded (cf. Coase, 1960). In fact, Coase points out that property rights even more essential than the product itself when different actions should be stimulated. Property rights should, hence, be seen as a production factor in economic analysis. The more incomplete contracts of ownership the higher the uncertainties and, thus, the costs of transactions which leads us to the theory of ownership (Hart, 1993). The legal support – in the positive transaction cost environment – is, *secondly*, crucial in keeping the costs of transactions down. This is achieved by, as just described, A) delimiting the uncertainties and B) abating the managerial costs for the legal system, both for governmental bodies and those being regulated. Cerin's (2005a) structuring of Coase's *The Lighthouse in Economics* (1974) lead to the four pillars *Sustainability Incentives Scheme*. The scheme is for establishing situations where *"policy can be designed to use property rights to transform environmental impacts into a tradable production factor"* as follows: 1) provide *Social Value*, 2) strengthen *weak public support*, 3) create *private economic value* and 4) enable *chargeability*.

Fullerton (1995) and the OECD (1999) conclude, however, that the large industrial polluters are often exempted from policy and sometimes, in fact, even receive subsides to avoid eventual competitive disadvantages to firms of other nations. In fact, the legal institutions of property rights constitute a keystone of Western Economies by keeping the transactions costs down (North, 1994) but especially for those actors dominating it which is above all in line with Smith's (1776) view on the legal system being designed for those in power. According to Smith the effort of these actors is to jerk the property rights system for their own benefits depriving the wellbeing of the larger mass which is more closely in line with the optimum of society. There is, hence, a need for delimit the options for actors to explore the benefits of their own moral hazards (Arrow, 1963; cf. the decoupling concept coined by Meyer and Rowan, 1977; cf. the market for lemons concept coined by Akerlof, 1970) both within existing legal framework and within the development of legislation (cf. Dobers, 1996).

5.5.2 Creative destruction theory

The delimitation to economic growth and physical output in a Schumpeterian creative destruction setting (cf. Schumpeter, 1911) is not – as suggested by Smith (1776), Marx (1867) and Stigler (1951) delimited primarily the physical demand that markets can absorb. On the contrary, the delimiting factor is rather on the supply side and the possession of heterogeneous and tacit knowledge or competence (Eliasson, 1990). New knowledge may encompass the potentials of creating new markets if other institutions i.e. financial, regulative and monopoly enjoying organisations do not obstruct entry. Short-termism of e.g. politicians by targeting the voters support in the upcoming election as their major concern may lead to the support of bankrupt industries for the sake of jobs. These subsidies, e.g. on ship building industries in the 1970's, would in many cases, however, be better spent on education, innovation and entrepreneurs that would have created long-term opportunities for growth elsewhere (cf. Eliasson, 1996; cf. Cerin, 2005c). According to the writings of Smith (1776) he saw society's support to inefficient production is an oppression to society, read the common man, who have to pay for badly used resources.

Regulations do, however, too often support inefficient industries and technologies by obstructing entry of new players and business solutions. This phenomenon, from a firm perspective, is described already by Simon (1955) as *bounded rationality* where economic actors – read firms – in order to cope with the complex world adopt simplistic decision models. Environmental policy instrument, furthermore, to a large extent focus on the existing production order instead of focusing on the achievement on environmental improvements which is shown by Cerin and Karlson (2002) and theoretically analysed by Cerin (2005a; 2005b). It is, hence, not enough to look at pennies here and there, but very much so into power structures such as prevailing technology, capital and information, as well as existing incentives, to make a technological breakthrough. What legislative changes are needed to promote the development of new solution and what will make them profitable? Should the old structures and firms, that may not cope with the transition be supported and protected or should the resources be put into better use?

Thus, as discussed there, the most efficient way of applying new environmental trade policy measures is to initially adopt the grandfathering principle followed by a pre set scheduled phase-in period, transforming the instrument, to support more efficient solutions developed. By facilitating the phasing out of old technologies, solutions and resource usage the prerequisites for innovative entry and more efficient and less environmentally harmful solutions is laid. This is the essence of the Schumpertarian creative destruction.

5.6 Extracting the Theoretical Essentials for the Analysis

To condense the theoretical framework constituting the theoretical paradigms and worldviews that provide the foundation for the analysis of this research project three main characteristics of actors and their relationships are being addressed. The actors that are dealt with in the analysis are both individuals and organisational actors such as firms, but also their sub-organisations consisting of units with their own agenda that need not be coherent with the strategies of their respective firms. The *information asymmetries*, *power interests* and *cultural belongings* are aspects that differs actors, influence their actions and, hence, are core essentials for the analysis in this research project. These three aspects – the trinity – that we have created for the analysis contains the main conceptions dealt with in the theoretical framework – i.e. agent theory, institutional theory, legitimacy theory, stakeholder theory, transactions cost theory. Even though the conceptions overlap with each other as well with three aspects of analysis we regard the placing of the theoretical conceptions as valuable for structuring the analysis.

Although the concepts from the theoretical paradigms, described in the theoretical framework, are the deeper foundation for how to view science, society and sociology – according to the worldviews of the authors – the three pillars essential for the basic understanding of actors and their interactions are as follows:

Three aspects of analysis of actors – individual as well as institutional:

1) Information asymmetries
   - stakeholder theory
   - transactions cost theory
   - communicative competence concept
2) Power interests
   - agent theory
   - legitimacy theory
   - property rights
3) Cultural belongings
   - wall of self-evidence notion
   - institutional theory
   - creative destruction theory

6 Results from analysing the first part of the questionnaire – multiselection questions

Subsection 6.1 to 6.14 covers the feedback on the first section in the questionnaire, i.e. fourteen multi selection questions with three to nine alternatives per question for the respondents to choose between. For the first six of these questions the respondent was asked to select one alternative as answer for each question. For question 7 to 14 the respondent was asked to tick one alternative as answer for each question, but if relevant, they could also select two alternatives as an answer for each question.

In order to render it relevant for the seven different subcategories of respondents the questions 9 to 14 could not be put to them in an identical wording. Some questions were adjusted to fit the realities and experiences of the respondent groups. The most common alteration to the statements in the questionnaire was given to the Customer main respondent group. For Customers the word *'Companies'* was often replaced by the word *'Suppliers'* as a way of indicating their role, and referring to their experiences, in their procurement activities.

The respondents were in the figures divided into seven subcategories as described in section *5 Research methodology* above:

- ABB Sustain Mgrs
- ABB Account Mgrs
- Customers
- Finance Banks
- Finance SRI Adv
- Academia Acc/inv
- Academia Env Mgt

The results are presented in percent per alternative answer for each category of respondents. The answers from the respondent group ***"Finance Port Mgr/Analyst"*** are not included in the figures. These responses are however both included for some specific questions within this section and are separately discussed in section 8, since most respondents of this group lacked imperative knowledge on how environmental and social aspects are dealt with in industry. This made it impossible for the ***"Finance Port Mgr/Analyst"*** to answer and sometimes even to comment – other than *"Don't know"* or *"I suppose so"* – the majority of the questions**.**

6.1 Main responsibility / working area

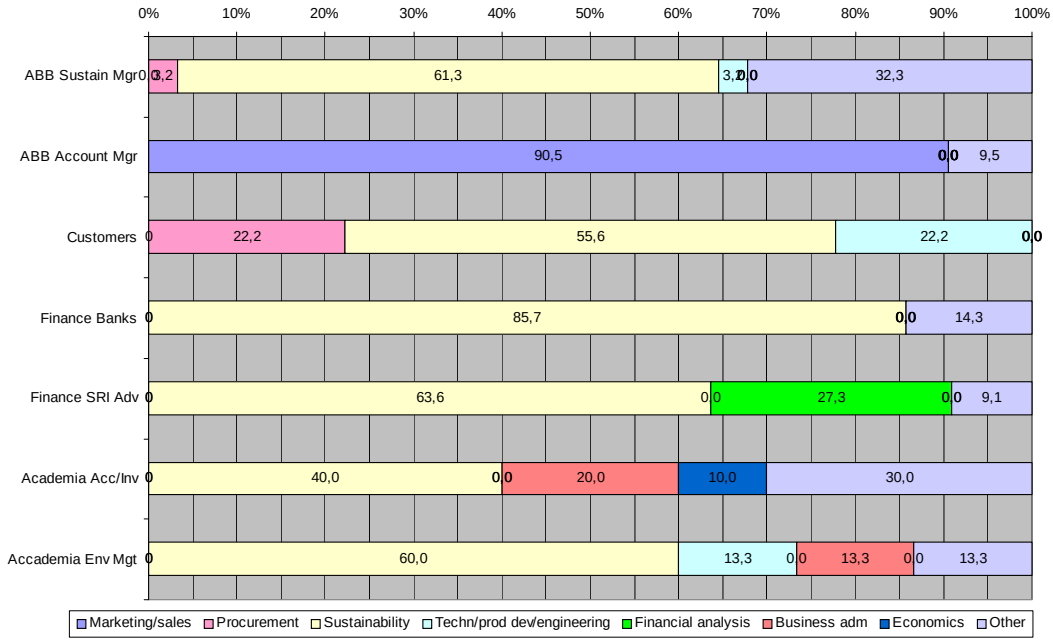

Figure 3. The respondents main responsibility/working area.

One category, the ABB Account Mgrs, differs significantly from all other groups. 90% of them have marketing & sales as their main responsibility but none of them have sustainability as a main area of responsibility. 40-86 % of the people from the other categories have, on the contrary, sustainability as their main area of responsibility. The large difference in main responsibility for the ABB Account Mgrs contra the other categories are worthwhile to keep in mind in the following discussion of the research report.

The 32% bar *"other"* for ABB Sustain Mgrs are mainly HR and quality management, but also to some extent communication and public affairs responsibility. The 30% bar *"other"* for Academia Acc/Inv is mainly related to sustainability issues such as sustainable business, SRI, industrial environmental management and sustainability accounting. One conclusion from this could be that researchers in academia interpret the word sustainability somewhat different than respondents from the other categories but perhaps foremost an indication that there is a greater need among academics than others to specify within what types of sustainability issues they are working with.

6.2 Working time spent on sustainability issues during the last 12 month

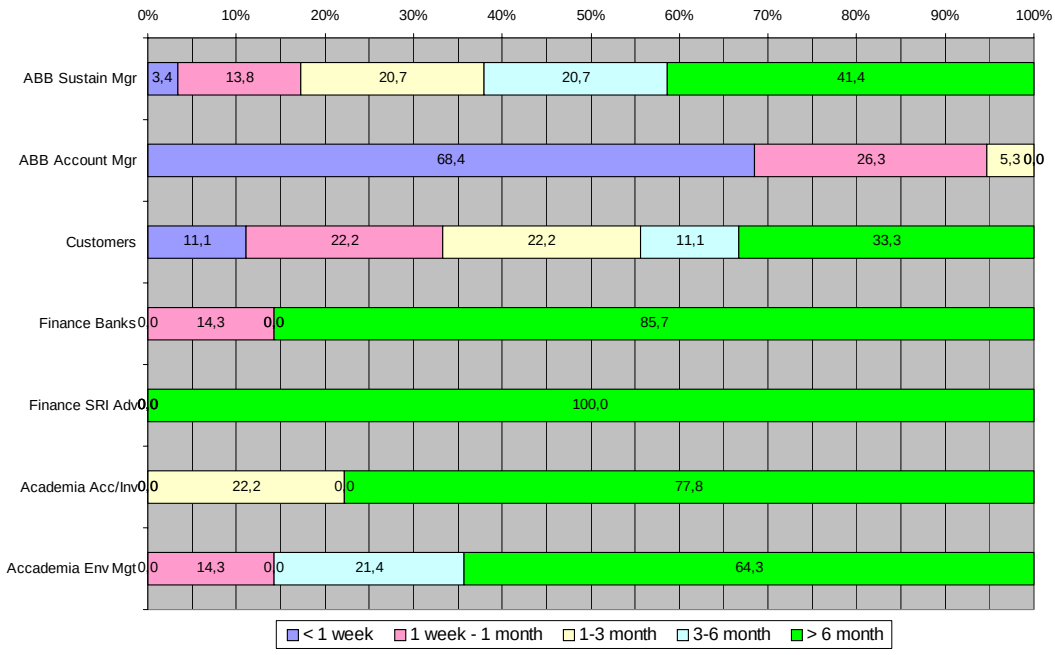

Figure 4. The respondents working time spent on sustainability issues during the last 12 month.

A first observation is that the ABB Account Mgrs differ significantly from the other groups, with respect to their working time spent on environmental/sustainability issues. More than 2/3 of the ABB Acc Mgrs work *"< 1 week"* annually with these issues. On the contrary, more than 2/3 of the analysts in the financial sector as well as the researchers in academia work *"> 6 months"* annually with sustainability issues. Also the ABB Sustain Mgrs and the customers work relatively large proportion of their working time with sustainability issues.

The small share of the ABB Account Mgrs working time spent on sustainability issues as well as the difference in main responsibility already discussed in 6.1 is a major difference between them and the other groups. This is worthwhile to keep in mind in the following discussion of the research report.

It is shown in figure 4 that Finance SRI Adv and Finance Banks are the groups that spent the largest portion of their working time on sustainability issues of all groups in the study. So, the finance sector appears to be highly dedicated to environmental and social issues, but one group of professionals, not displayed in the figures due to their inability for them to answer most of the questions is the group of fund managers and credit analysts at banks and fund companies. To them these questions were too subject specific on environmental and social related aspects. All the contacted persons of this group, but one not answering the question, claimed not to be working with environmental and social issues. A financial analyst, responsible for conducting analyses on ABB at one of one of the banks of the study frankly said, *"We do not pay attention to environmental and social aspects."* Even the fund managers of ethical funds claimed not to be working with

environmental, social and sustainability issues. Some comments from the ethical fund managers retrieved in the study are:

- *"We do not look for companies that are pro-active on environmental and social issues. We receive a list on which companies that are okay. Those not included are not invested in. In our own financial analysis we are concerned with revenues and cash flows. "*
- *"I have no knowledge about how to make environmental and social evaluations. I do not think companies' work with environmental and social issues have any effect at all."*
- *"I receive sustainability reports from larger corporations, but I cannot spend time reading such matters."*
- *"The only thing I care about is to get the highest returns possible"*

6.3 Planned amount of work time to be spent on sustainability issues during the next 12 month

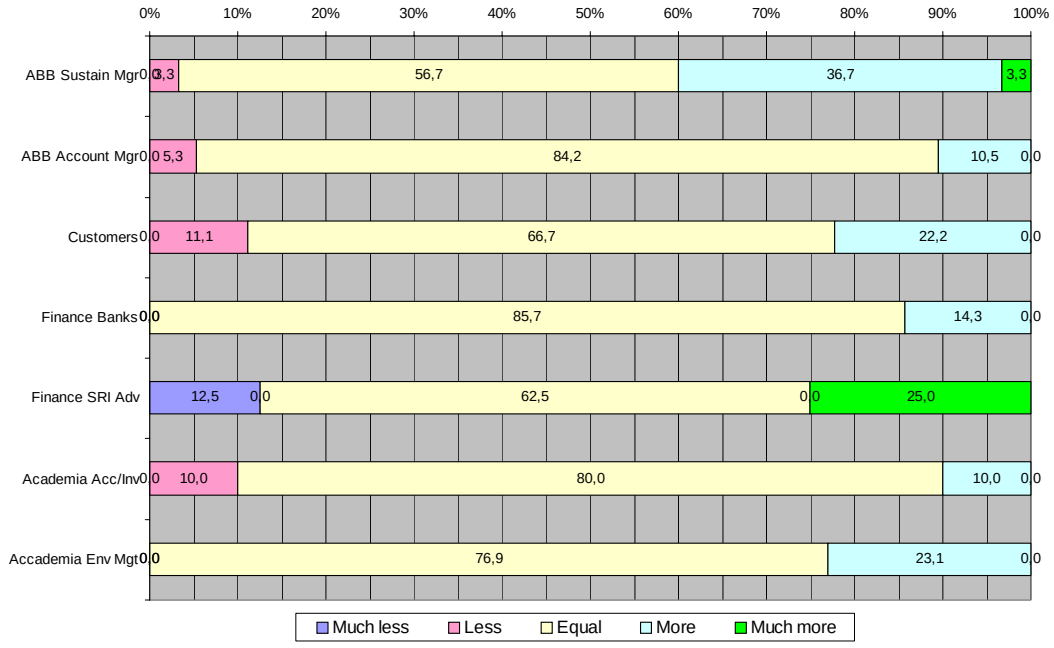

Figure 5. The respondents planned amount of work time on sustainability issues during the next 12 months (compared to the last 12 month).

The sustainability work for the respondents seems to be on a rather stable level since 60-80 of them answered *"equal"*. However, some tendency for increased work load is observed and then especially for the ABB Sustain Mgrs. 36% of these managers answered that they will work more and only 3% less with sustainability issues during the next 12 month.

The first three questions, combined, indicate that the ABB Account Mgrs differ from the other respondent groups with respect to their main responsibility and working time related to sustainability issues. Additionally, the relatively little working time that ABB Account Mgrs spent on these issues seem to be stable and will neither decrease nor increase during the next 12 months. The ABB Sustain Mgrs, currently already working relatively much with sustainability issues, will work even more with these issues the next 12 months.

6.4 On what sustainability issues did the respondents spend most of their time during the last 12 month?

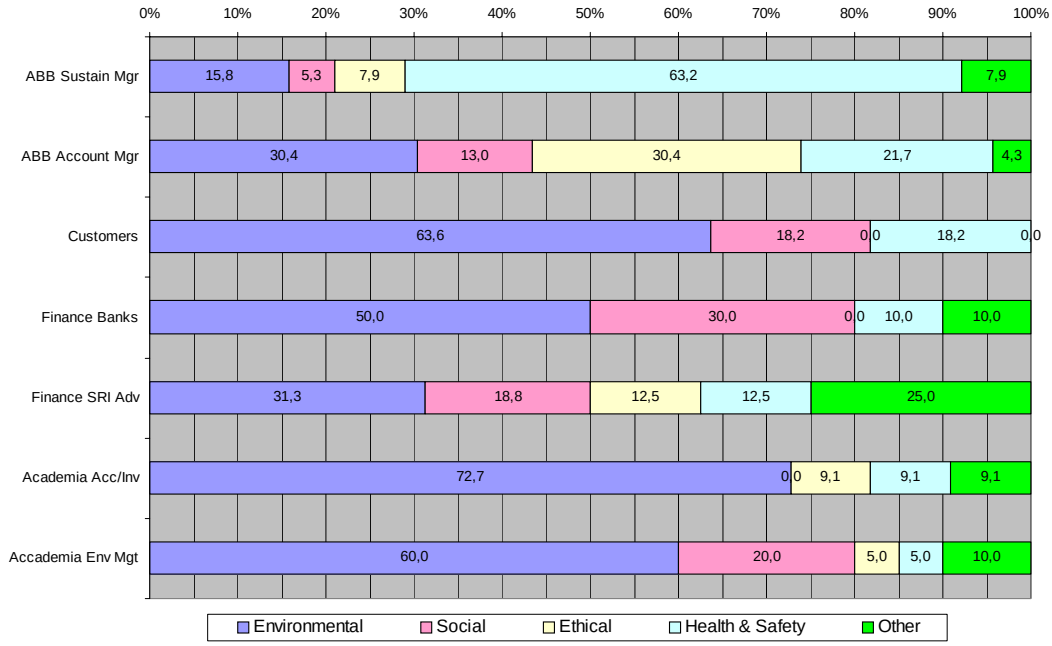

Figure 6. On what sustainability issue did the respondents spent most of their time on during the last 12 month.

There is a major difference between the respondent categories when considering health and safety issues as the most dealt with aspect of its sustainability work. Another difference concerns environmental issues that are in main focus for all categories except for the ABB Sustain Mgrs. It is also interesting to note that the front end sales people, i.e. the ABB Account Mgrs, spend relatively equal time on all sustainability issues and thus relatively large proportion of their working time on ethical issues that do not seem to be in the same relative focus for the other groups. Important to note regarding the focus of the sales managers, ABB Account Mgrs, is that they by far is the respondent group that deals with ethics as the most important aspect of sustainability issues. This reflects the sensitivity of ethics and bribery in business deals.

It is quite interesting to note that ABB Sustain Mgrs emphasise OHS so greatly. The comment from one of the larger SRI advisor firms on the normative statement that *"ABB is a pro active company in the sustainability area"* (cf. section 7.16) is that ABB has been a: *"Early mover on the product side/environmental. I have the feeling that OHS is getting better, but the term pro active probably not the right one. Historically, when it comes to corporate governance and compliance/code co conduct the company has rather been reactive than pro-active. I think this has changed."* ABB and its Sustainability managers are addressing the weaknesses pointed out by the SRI advisor firms and also getting some credits for it from the financial analysts. The ABB sustainability managers are working with the right sustainability issues seen from a stakeholder perspective, even though ABB seems to have some work to do before being considered as a forerunner within OHS. As put by the same Finance SRI Adv respondent*: "The Global HR approach* [of ABB] *is still quite unclear to me."* To summarise the comments from the

SRI Adv. respondents is that ABB has been a forerunner in the environmental field, but other companies have caught up. ABB has to improve its work on OHS to gain stakeholder reliance to avoid comments and views similar to those made by Finance SRI Adv above.

The 25% *"other"* bar for the Finance SRI Adv is mainly human rights issues that could be included in the *"social"* bar, and the answer *"social issues"* for this respondent category could therefore be seen as 44%. Some few respondents commented that they spend equal time on all the alternative sustainability issues.

6.5 Educational background

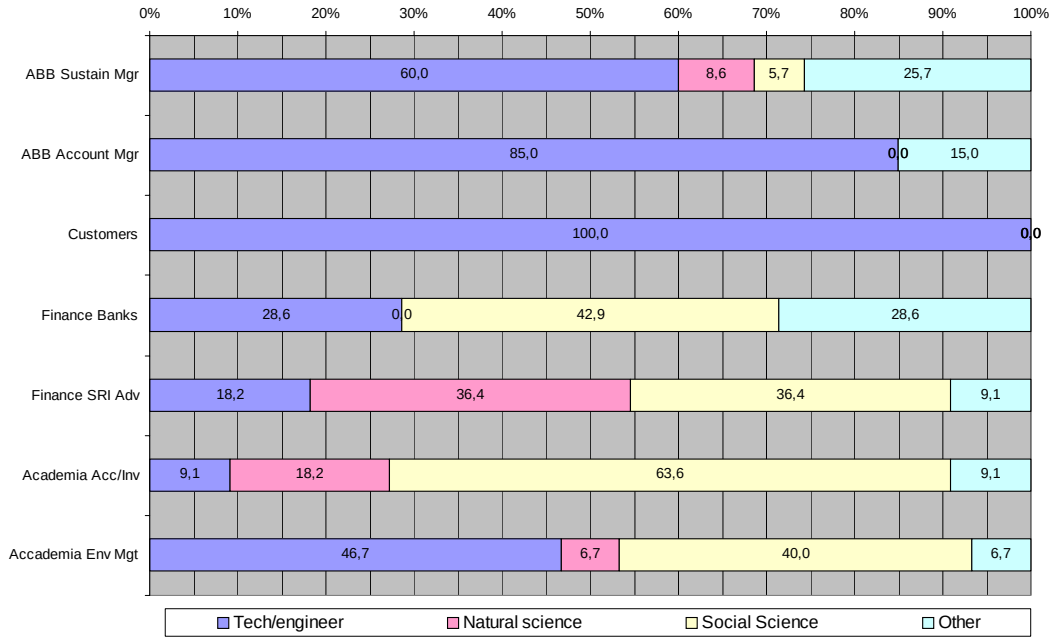

Figure 7. The respondents educational background.

A conclusion from analysing the answers to this question is that the people working with sustainability issues within industrial companies are predominantly technicians/engineers. People analysing and observing them, however, in the financial and academic sectors have a more heterogeneous educational background. For Finance Banks and Academia Acc/Inv social sciences is the most common educational background, and technical/engineer or natural science educational background come second. However, the educational background of Finance SRI Adv and Academia Env Mgt respondent groups are rather equally divided between, on the one hand, natural science together with engineering and, on the other, social science.

The retrieved information that staff working with sustainability issues within industry has the same educational background as the majority of the decision-makers have – i.e. group account managers, designers and procurement staff – may indicate a better mutual understanding than what would have been the case if the educational backgrounds were different. The current situation within the finance industry is different though, where the people working with ethical, social and

environmental issues have another educational background than the community's decision-makers. These observations together with the theoretical aspect of cultural belongings constitute one explanation model for the rift identified in the report between the sustainability profession and decision-makers within the financial community on ethical, environmental and social matters. The views from the sustainability profession and decision-makers within industry are more coherent. Another explanation could be the number of years dealt with these issues in respective sector.

Analyses of the 25% *"other"* bar for ABB Sustain Mgrs shows that most of these answers can be allocated to social sciences, like e.g. business schools.

6.6 Participation in sustainability training or experience exchange during the last three years

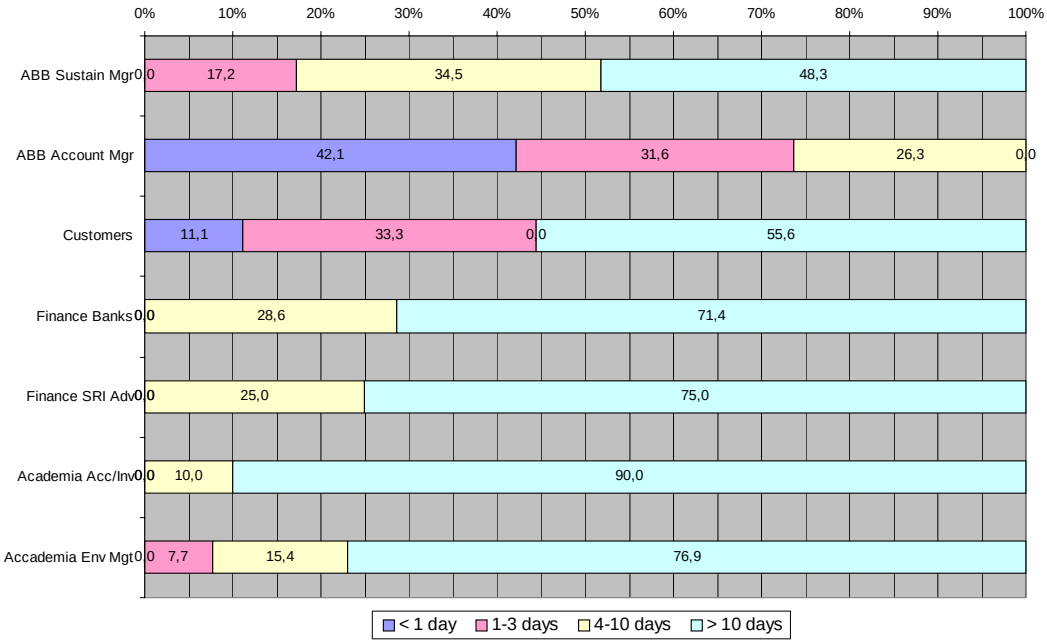

Figure 8. The respondents participation in sustainability training or experience exchange seminars during the last three years.

The answers on this question correspond very well to the answers on the *"working time question"* discussed in section 6.2. The seemingly self-evident conclusion from this question is that people working much with sustainability issues participate more in training and experience exchange seminars than people working less time with these issues.

When comparing the answers made by ABB Account Mgrs to question 8 discussed in section 6.8 we see that this respondent group is the only group that regards insufficient training as the main obstacle for working with sustainability issues. The question is, however, whether the account managers should have an increased extent of education than currently on sustainability issues or if the communication to and the methods for managing these aspects should be adjusted to an even higher degree than currently.

6.7 Main driving forces for working with sustainability issues

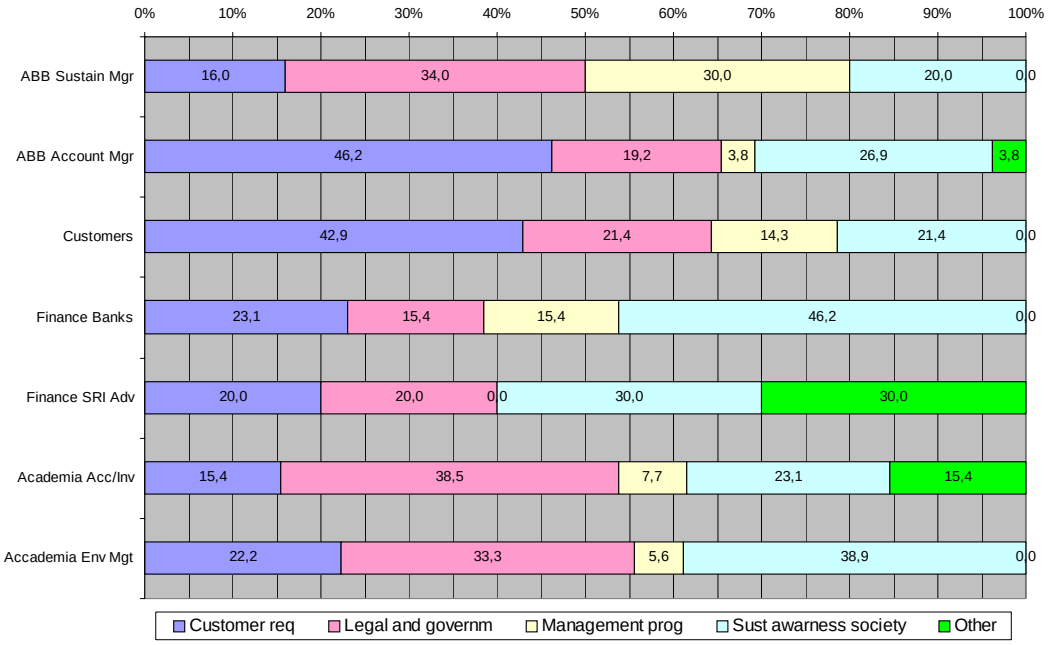

Figure 9. Main driving forces for working with sustainability issues.

The opinions of the different respondent groups are relatively scattered about what the driving forces are for working with sustainability issues. The ABB Account Mgrs and the customers see the customers as being the main drivers. The ABB Sustain Mgrs perceive the legal/governmental requirements and internal management programs as the main drivers. The analysts in the financial sector see the sustainability awareness in society as the main driver and the researchers within academia see both the sustainability awareness in the society and legal/governmental requirements as the main drivers. Our analyses of the 30% *"other"* bar for Finance SRI Adv show that 2/3 can be related to *"customer requirements"* and 1/3 to *"sustainability awareness in the society"*.

It is interesting to note that as much as 30% of the ABB Sustain Mgrs perceive management programs as being the main drivers, compared to less than 4% for the ABB Account Mgrs. On the contrary only 16% of the ABB Sustain Mgrs perceive customers as being the main driver compared to 46% for the ABB Account Mgrs. The two academic respondent groups are also somewhat sceptical regarding management programs as being the main driver for working with sustainability issues. The respondent group Finance SRI Adv is, however, the most negative of all groups regarding management programs. None of the respondents in this group sees these programs as being the main driving force for working with environmental issues. Here is a large gap between those responsible for the sustainability work at ABB – on the contribution of management programs – and those who analyses the very same work.

The ABB Account Mgrs' low perception of management programs as main drivers for working with sustainability issues should be compared with the groups view on the questions regarding what information is most critical when evaluating a company's work with sustainability aspects (see figure

11 in section 6.9). From being one of the most negative respondent group about management systems as being the main driving force for working with sustainability issues (in question 7 this section) to become the most positive group regarding the importance of management systems when evaluation a company's work with sustainability issues. One explanation for this, seemingly, inconsistency is that ABB Account Mgrs do not feel a significant pressure in their daily work activities from implemented environmental and health-safety managerial systems. They do, however, experience that from a customer perspective implemented environmental and health-safety management systems are important since that is asked for and sometime a requirement from potential customers to have implemented. Deeper questions of continual improvements achieved may not be on the agenda in these customer negotiations. If looking at question 8 in section 6.8 the ABB Account Mgr group is also one of the respondent group that is most convinced that there are no obstacles in working with sustainability issues – almost every fifth person is of this opinion.

6.8 Main obstacles for integration of sustainability issues in the daily activities

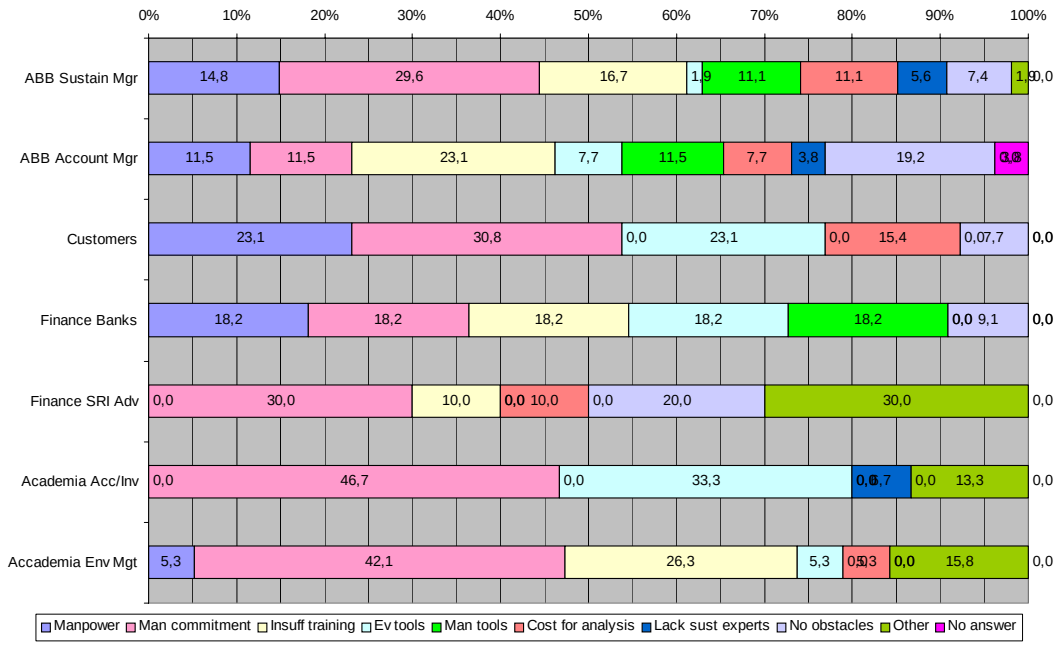

Figure 10. Main obstacles for integration of sustainability issues in the daily activities.

The opinions about main obstacles for integration of sustainability issues in the daily activities are relatively scattered. One first interesting observation is that the ABB Account Mgrs in general do not see management commitment as an obstacle, only 11%. The commitment of management is, on contrary, identified by most of the other groups as a main obstacle. E.g. as much as 42-47% of the researchers in academia and approximately 30% of the ABB Sustain Mgr, Finance Bank and Customer respondent groups identified management commitment as the main obstacle. Example on comments from ABB Sustain Mrgs related to this question are "*ABB Business managers see no value addition by attending to sustainability*" and "*Not fully integrated in business process*".

Another observation is that neither the cost for conducting sustainability analysis nor access to sustainability experts is perceived as a major obstacle for working with sustainability issues. 19% of the ABB Account Mgrs and 20% of the Finance SRI adv do not see any obstacles at all for integration of sustainability issues in the daily activities. As seen in the ABB Account Mgrs answers to question 9 in section 6.9 is that this group is very content with the signalling of the existence of management programs, as sign of environmental and social improvements or at least perceived as taking the matters seriously. But, as seen in question 7 (section 6.7) the ABB Account Mgrs regard these tools themselves as providing little pressure for working with sustainability issues.

Examples on the 30% *"other"* bar for Finance SRI adv is *"the ability to link financial value creation, either mentally or operationally*" and the current trend that *"equities research in general is under threat of elimination as the investment community moves even further toward the assessment of just one thing: profits."* It is, thus, increasingly important for the analysts in the SRI segment not to lock themselves into just the ethics of company behaviour or the environmental impacts resulting from company operations but to analyse how sensitive company profits are to these issues and also the related management strategies to address these issues.

6.9 What type of sustainability information is most critical when evaluating a company's sustainability work?

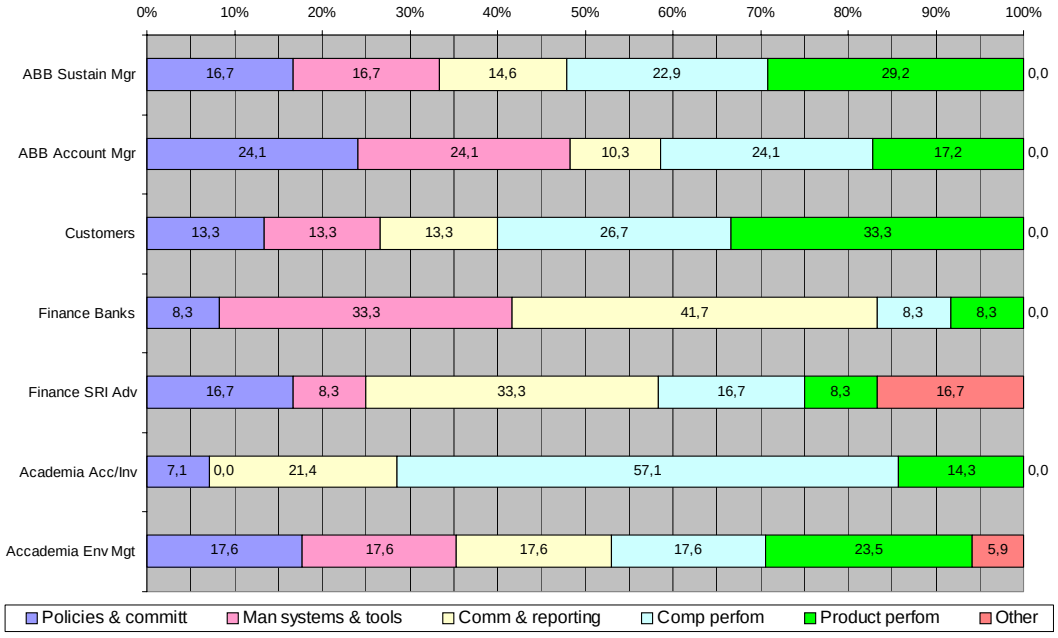

Figure 11. What type of sustainability information is most critical when evaluating a company's sustainability work?

The analysts in the financial sector perceive communication & reporting as most critical when evaluating a company's sustainability work. The respondent group Finance Banks has very high believes in communication & reporting and management & tools. As many as 75% of the respondents of this group stated that these two selections were the most important ones. This

should be compared with the Academia Acc/Inv, critically analysing the environmental performance of firms, who do not consider these two aspects important. None of the respondents valued management systems & tools to be most critical and a 21% considered communication & reporting as most important. ABB Account Mgrs see policies & commitment as well as management systems & tools and company performance as most critical types of information. ABB Sustain Mgrs see the company and product performance as being most critical and Academia Acc/Inv see the company performance as most critical.

The conclusion possible to draw from analyzing this question is that the *"real"* performance seems to be the most critical aspect, i.e. the company and product performance, when evaluating a companies sustainability performance for all respondent group – ranging from a good 40% to a good 70% - except for Finance Banks where less than 17% believes that performance is of most importance. The *"other"* bar for the Finance SRI Adv is mainly related to performance measures, making the Finance SRI Adv group valuing performance to a degree that is similar to the other respondent groups. Academia Acc/Inv is the most positive of all respondent groups to performance measurements, where 71% sees company and product performances as the most critical information when evaluating a company's sustainability work group

6.10 Which sustainability tool is most important to have implemented from a business and customer perspective?

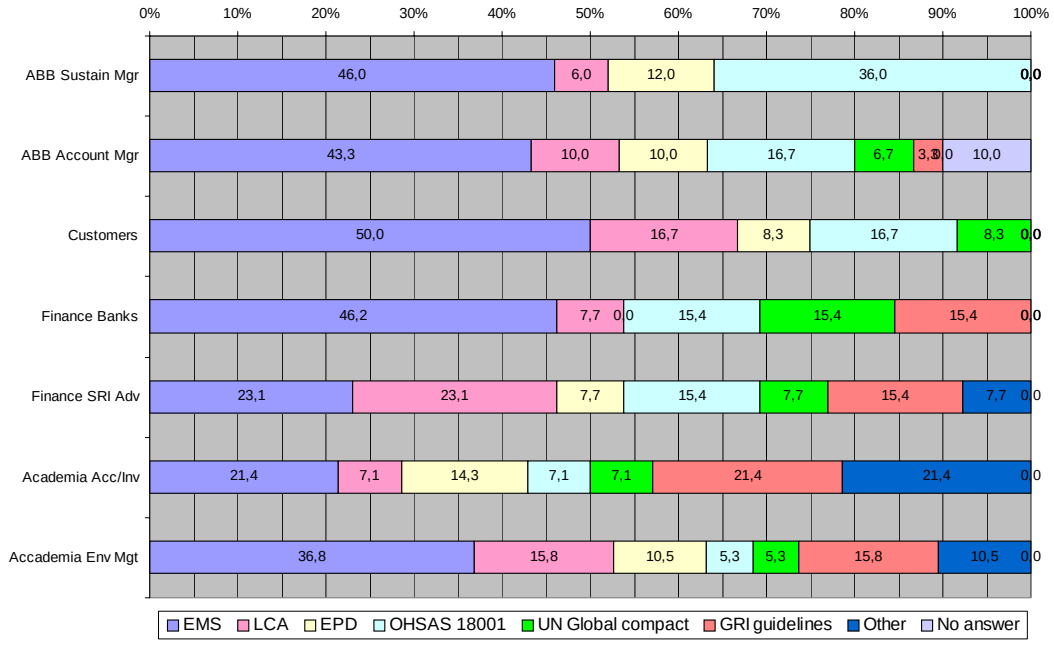

Figure 12. Which sustainability tool is the most important to have implemented from a business perspective?

The ABB Sustain Mgrs perceive the Occupational Heath & Safety Management Systems OHSAS 18001 as being more critical than the other categories of respondents; else the results of the respondent groups were relatively homogeneous. Management systems (EMS and OHSAS) are by

most categories perceived as being the most important tool to have implemented from a business and customer perspective. The two respondent groups focusing on evaluating company performance from the outside – Finance SRI Adv and Academia Acc/Inv – are less convinced than other respondent groups that OHSAS and environmental management systems should be important to have from a customer point of view.

The answers to this question are related to the question discussed in section 6.4. The ABB Sustain Mgrs see health and safety aspects as being the aspects they are working the most with (see section 6.4) and in line with this they to a high degree also perceive OHSAS 18001 as being more critical to have implemented from a customer and business perspective than the other categories of people.

EMS is seen by ABB Account Mgrs as the most important tool to have implemented from a business perspective but the very same group is the respondent group that considers these management programmes to be insignificant drivers for working with sustainability issues (see section 6.7). The aim of environmental management systems is, however, to stimulate continual improvements – thus being a driver for change. The reason why these management systems are seen as a business support by the account (sales) managers is reflected by a Swedish EPA report illustrating that in public procurement customers often use questionnaires containing questions of following character: *"Are you ISO-certified?"*, *Do you have an environmental policy?"* or *"Do you have environmental targets?"* (Flening, 2005). Procurement staff tends, thus, to focus on the existence of methods and tools for handling environmental issues instead of dealing with environmental performances and improvements. The implemented EMS can, thereby, serve the account managers in sales while not being a driver for working with improving the environmental aspects.

External guidelines and commitments, like the GRI guidelines and UN Global compact are not perceived as being important to have implemented from a company evaluation or customer and business perspective. None of the ABB Sustain Mgrs, in fact, regarded UN GC or GRI as the most important tool to have implemented. The customer respondent group did not either chose GRI indicators as an important tool.

The 21% *"other"* bar for Academia Acc/Inv are suggestions for various tools related to reporting, like *"improved quantitative performance reporting"* and *"reporting, not necessarily according to GRI, but consistent"*.

The answers to this question serve as a relevance check to the respondents' answers to the normative statements presented below in section 7. If looking at question 25 in section 7.11 which is a normative statement on the *society value* of UN Global Compact – in reflecting the responsibility that the organisation takes on environmental and social issues – we see that ABB Sust Mgrs belong to the group of respondents that have a positive attitude to Global Compact. The subgroups Finance SRI Adv and Academia Acc/Inv, on the contrary, were negative towards the value of UN GC in reflecting the corporate responsibility of the signatory organisation. The impression could then be, for the observer, that ABB Sust Mgrs highly value UN GC as a reflection on corporate dealings with environmental and social issues. When taking into account these ABB managers' answers to this question in this section, question number 10, we see that they do not consider UN GC important at all important from a business perspective compared to other tools and compared to the answers of other respondent groups. So, the combined impression is therefore, that the *business value* of GC is recognised by all respondent groups except for ABB Sust Mgrs (when compared to other tools), but concerning the *society value* all the respondent groups are positive towards GC, except for Finance SRI Adv and Academia since they consider that too little efforts are required for signing up. These respondents also requests shown results.

6.11 Which information channel/source is most critical in marketing and customer communication of sustainability information?

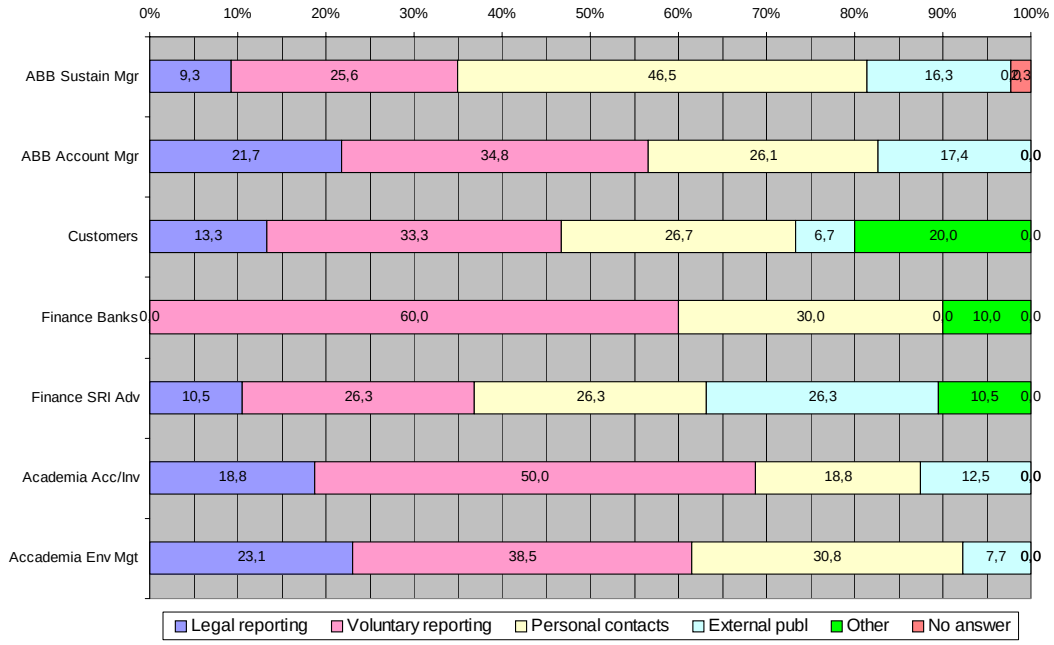

Figure 13. Which information channel/source is most important in marketing and customer communication of sustainability information.

Informal information channels, like personal contacts (46%) and voluntary reporting are for ABB Sust Mgrs perceived as being most important channel for communicating company sustainability performance. The other respondent groups roughly ranged between 20%-30% in the support of personal contacts as the vital information channel and these respondent groups regarded voluntary reporting as the most important source of information. The Finance SRI Adv respondent group value third party, external, information as being of equal importance to both personal contacts and voluntary reporting. The 20% *"other"* bar for customers is answered as own evaluation questionnaires and qualification forms.

6.12 Do companies provide its customers and other stakeholders with the requested sustainability information?

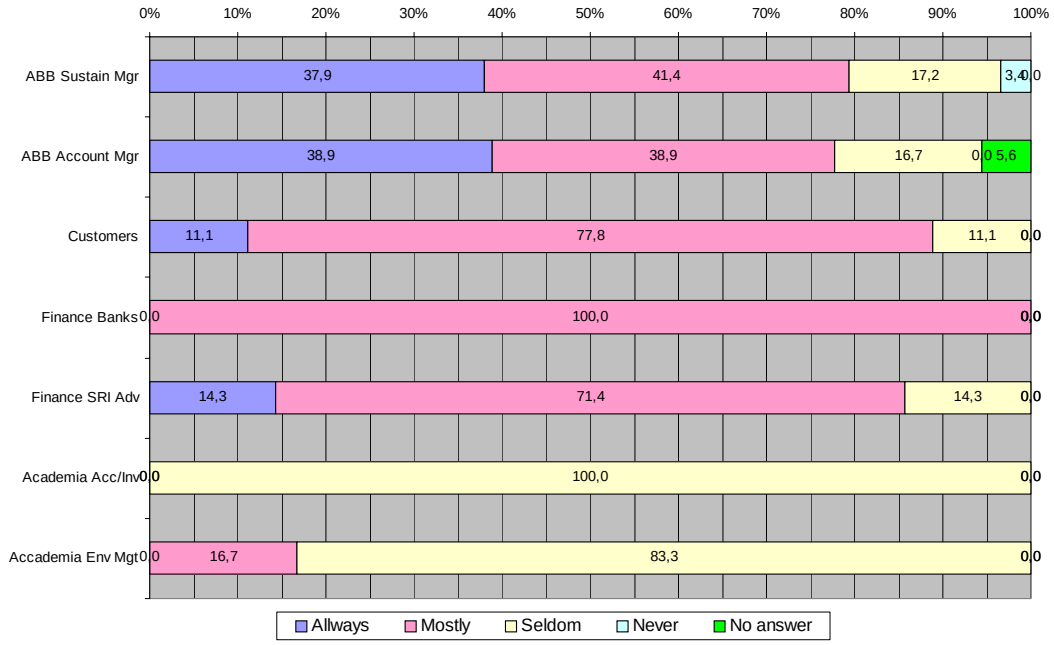

Figure 14. Do companies provide its customers and other stakeholders with the requested sustainability information?

A large majority of ABB Sustain Mgrs, ABB Account Mgrs, Customers as well as the actors in the financial sector perceive that customers are provided with the requested information, varying from mostly to always. The researchers in the academia however, in contrast believe that this is not the fact. The people within ABB are a little bit more positive about their ability to supply the requested information than the respondent groups of Customers and Finance. One conclusion is that researchers in academia may not be very well informed about the actual information flows in the companies business and customer contacts related to sustainability in combination with their quest in finding gaps in the observed practice to fulfil in – and to create space for new - research.

6.13 Do companies provide its customers and other stakeholders with superfluous sustainability information?

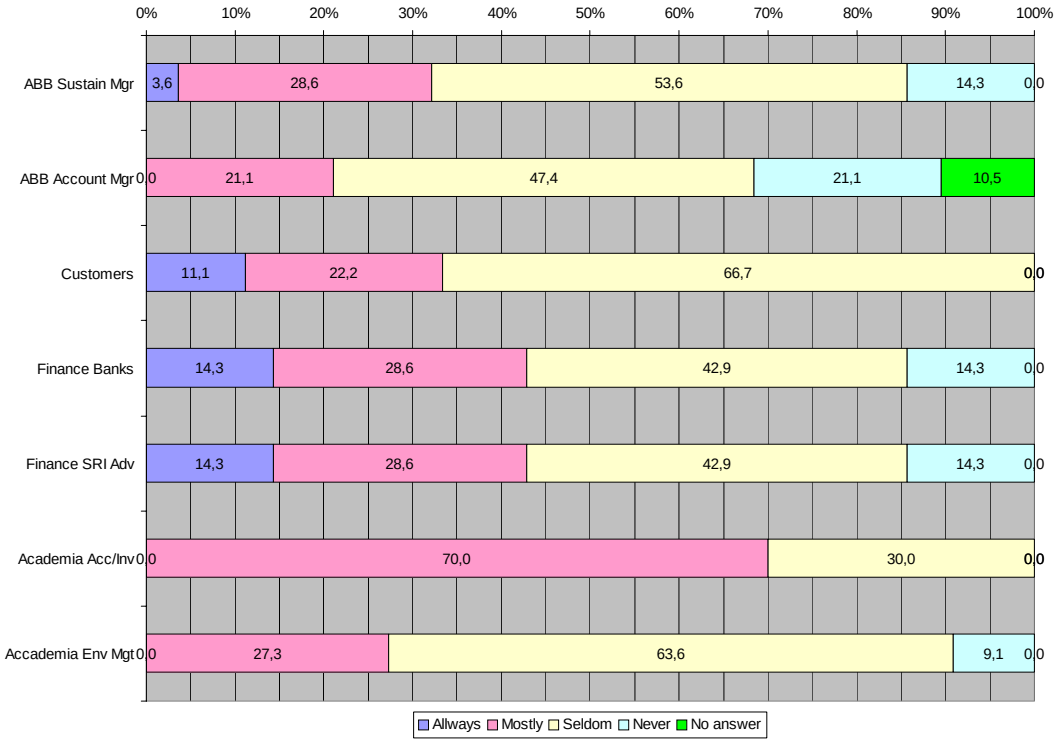

Figure 15. Do companies provide its customers and other stakeholders with superfluous sustainability information?

The opinion of all groups is that the stakeholders are seldom provided with superfluous information, except for the Academia Acc/Inv respondent group which is of the opinion that company stakeholders mostly receive superfluous information that is not requested. The other academic group, Academia Env Mgt, which focuses on how to develop new tools is, on the contrary, one of the respondent group that is most convinced that the information is provided to stakeholders is not redundant. Customers are the most positive where two thirds do not consider the information surplus to requirements.

Similar conclusions regarding researchers in academia may be drawn here as from analysing question 12 section 6.12 and i.e. that the academics do not seem to be well informed about information flows in the companies information flows related to sustainability. An explanation could herein from the fact that academics usually are not involved in daily industrial interfirm communication and relations and most of them, probably, do not have close and daily relations with industry. This difference opinions between academia and the other research groups should however anyhow be considered since the researchers in academia are the one who observe and analyse how sustainability aspects are dealt with in industry and in other parts of the society.

6.14 Does high sustainability rating for a company lead to a competitive advantage or to another business decision?

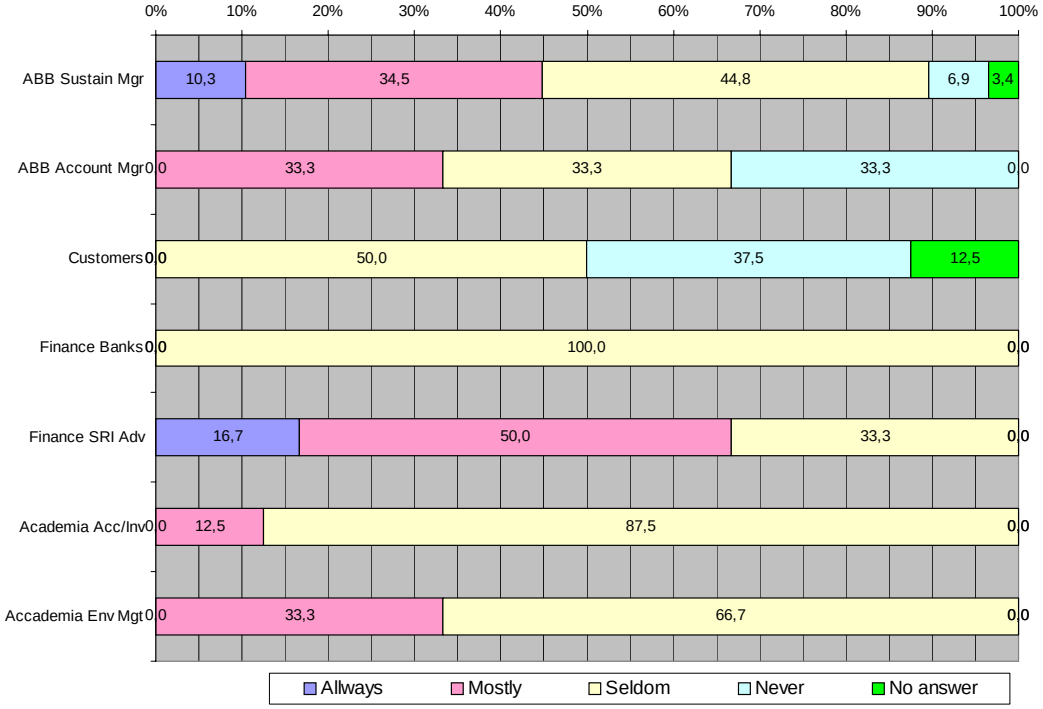

Figure 16. Does sustainability rating for a company lead to a competitive advantage or to another business decision?

In general there is a relatively week support for the statement that sustainability ratings lead to competitive advantages or more well-founded business decisions. One somewhat surprising observation is that the majority of the Finance Bank analysts in the financial sector does not or seldom perceives that high sustainability ratings lead to other investment decisions that would be the case without such information. ABB staff sees sustainability ratings as being valuable for their business and their stakeholders' business decisions. The most convinced groups about the business value of being highly rated in sustainability ratings are the ABB Sust Mgr and Finance SRI Adv respondent groups.

This question should be compared with the respondent comments to the normative statement provided in question 17 section 7.3 dealing with high rated sustainability performance and competitive advantage in business. In question 17, those seeing a correlation between high ratings and business advantages belong to the financial community. So, the SRI profession within the financial community is more positive towards general business opportunities to herein from sustainability ratings than investments, thus, believing in a larger impact of their work in industry than in their own financial sector.

7 Results from analysing the second part of the questionnaire – normative statements

Section 7 covers the feedback on 17 normative statements. The respondents were asked to declare to what degree they agreed to the normative statements that was given them. The respondents were given the possibility to answer the statements by putting a check mark on a scale between one and five, one for full disagreement and five for full agreement with statement.

The respondents were in the figures divided into seven subcategories, described more detailed in section *5 Research methodology*:

- ABB Sustain Mgrs
- ABB Account Mgrs
- Customers
- Finance Banks
- Finance SRI Adv
- Academia Acc/inv
- Academia Env Mgt

The results are presented as mean values for each subcategory. The answers from the respondent group ***"Finance Port Mgr/Analyst"*** are not included in the figures. These responses are however both included for some specific questions within this section and separately discussed in section 8, since most respondents of this group lacked imperative knowledge on how environmental and social aspects are dealt with in industry. This made it impossible for the ***"Finance Port Mgr/Analyst"*** to answer and sometimes even to comment – other than *"Don't know"* or *"I suppose so"* – the majority of the questions but sometimes strong statements were given to the normative statements given to them in this section**.**

7.1 Current sustainability evaluation tools are too resource and time consuming

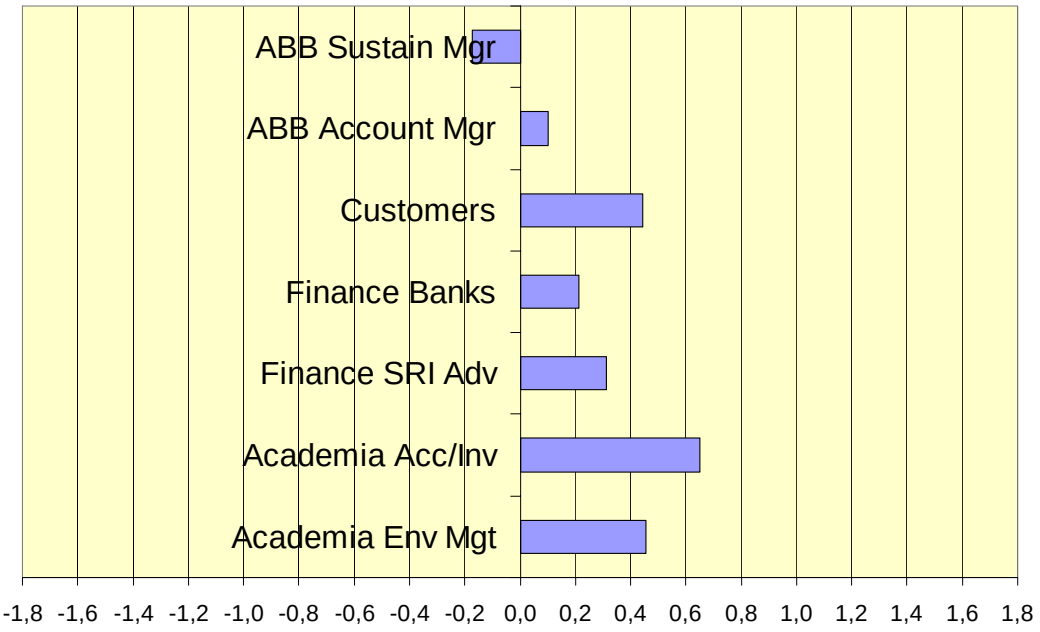

Figure 17. Current sustainability evaluation tools and methods are too resource and time consuming.

In general there is a slight agreement for the normative statement. The two groups least agreeing with the statement put to them are the two ABB groups. These respondents are more or less neutral to the statement. The ABB Account Mgr group is just above neutral while the ABB Sustain Mgr group is located on the other side, to some extent not agreeing with the statement. The groups agreeing the most with the statement are – in descending agreeing order –Academia Acc/Inv, Customers and Academia Env Mgt. The agreement of all groups is, however, moderate compared to the possible full agreement.

When comparing these answers to the answers in the next section (section 7.2) dealing with the normative statement *"It is vital to improve the efficiency of the sustainability evaluation tools and methods.",* we can see that only one group, Academia Acc/Inv, is almost equally agreeing to that statement as to the statement that *"Current sustainability evaluation tools and methods are too resource and time consuming."* The other groups are, compared to Academia Acc/Inv less concerned with the efficiency of current evaluation tools and methods, but are despite that more concerned with improving the efficiency of those than Academia Acc/Inv.

One conclusion possible to draw from the answers on this statement is that ABB Sust Mgrs is the respondent group that to highest degree perceive the tools as being efficient enough. Being most critical are the researchers in academia and Customers. They are less satisfied with the efficiency of the tools even though the critique is, in general, modest.

7.2 It is vital to improve the efficiency of the sustainability evaluation tools and methods.

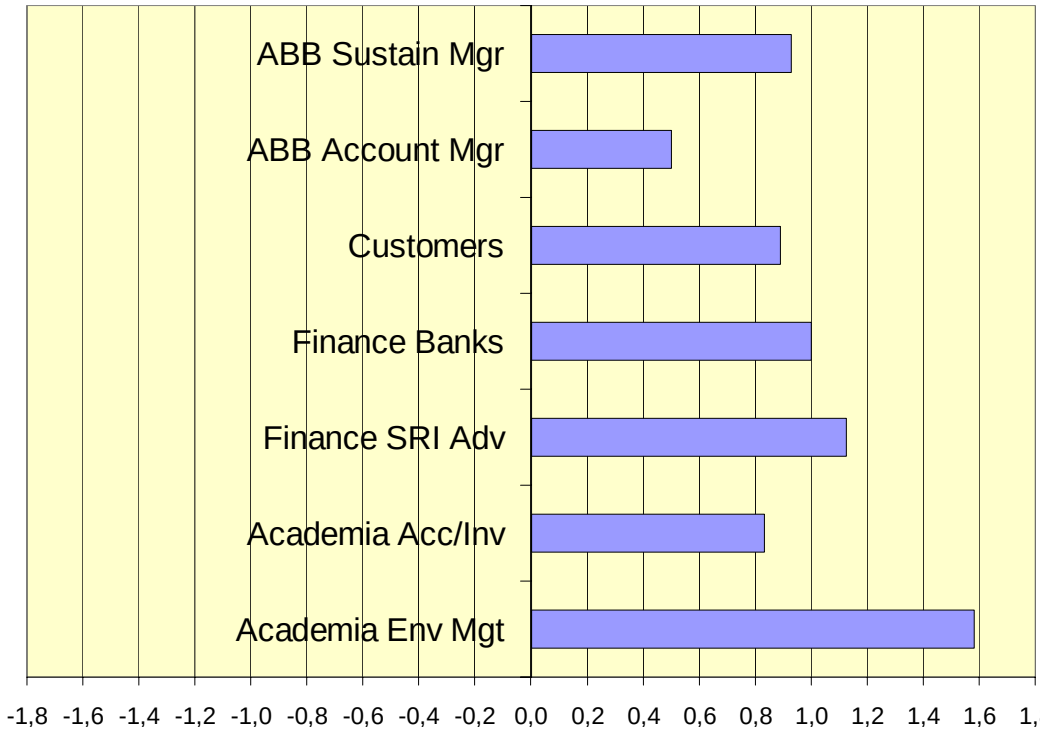

Figure 18. It is vital to improve the efficiency of the sustainability evaluation tools and methods.

There exists a rather strong support for the normative statement. The respondent groups least agreeing with the statement put to them are ABB Account Mgr, Academia Acc/Inv and Customer groups. Even though their support is the weakest among the respondent groups their support to the statement is, however, also significant. The strongest support for the normative statement is found among Academia Env Mgt followed by Finance SRI Adv and Finance Banks. No group is disagreeing with the statement.

It should be noted that Academia Acc/Inv which is the group that is in strongest agreement with the statement *"Current sustainability evaluation tools and methods are too resource and time consuming."*, above in the previous question (section 7.1), is one of the weakest supporters of the statement, in this question, that *"It is vital to improve the efficiency of the sustainability evaluation tools and methods."* The Academia Acc/Inv respondents are about equally supporting to both statements. The other groups, on the contrary, agree to a much larger extent to the expression that there is a need for tool development than agreeing to the previous statement that the current tools and methods are resource consuming.

Why is Academia Env Mgt by far the most agreeing group with the statement that there is a need for improving the efficiency of evaluation tools and methods for sustainability issues while the Academia Env Mgt group was not the one with the largest concerns for the current efficiency of the very same tools and methods? One explanation could be that for this group saying that the tools and methods are inefficient is a critique to themselves and the outcome of their own efforts,

but since their work is to develop new methods and tools they see the need for a tool development focus. This way of reasoning could also be applicable for following respondent groups ABB Sustain Mgr, Finance Banks and Finance SRI Adv seeing a need for improvements, but not being as critical to its own work as e.g. the external viewer (in terms of tool developments) Academia Acc/Inv.

7.3 Companies with high rated sustainability performance (e.g. in Dow Jones Sustainability Index) have a competitive advantage in their businesses

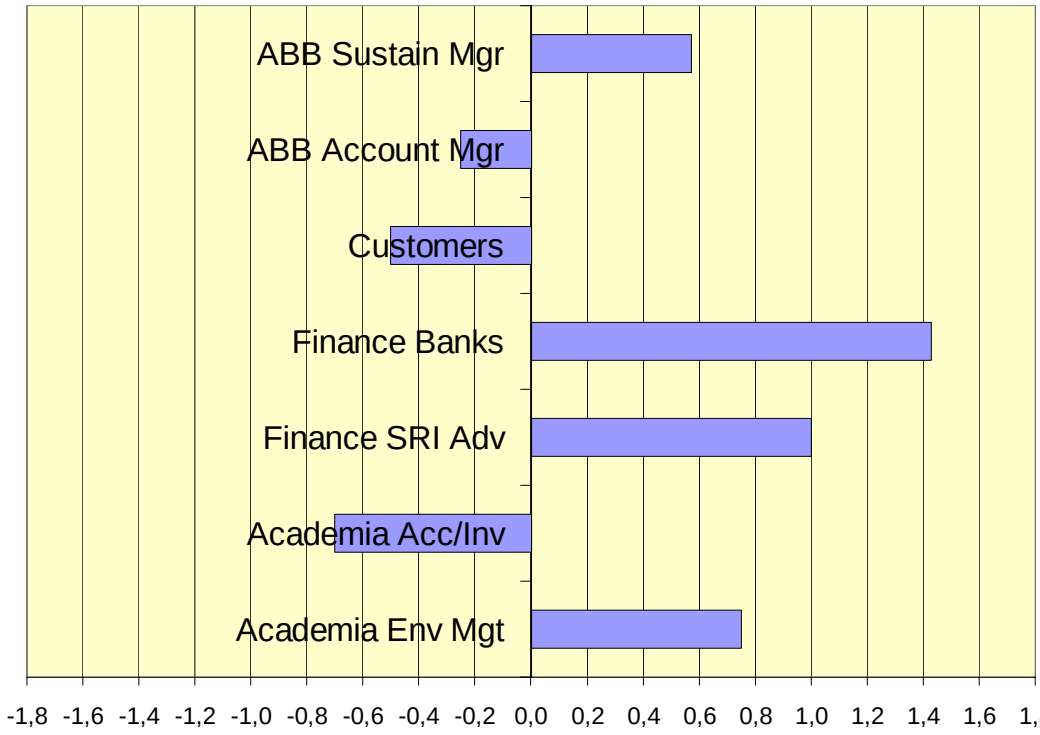

Figure 19. Companies with high rated sustainability performance (e.g. in Dow Jones Sustainability Index) have a competitive advantage in their businesses.

The support for the normative statement is quite scattered, varying from strong support to a considerable opposition. The four groups that agree with the statement, in descending agreement order, are Finance Banks, Finance SRI Adv, Academia Env Mgt and ABB Sustain Mgr. The three groups that disagree with the statement are, in descending disagreement order, Academia Acc/Inv, Customers and ABB Account Mgr. The main respondent groups of ABB and Academia have internally diverting views on the normative statement. ABB Sustain Mgr agrees while ABB Account Mgr disagrees and Academia Env Mgt agrees while Academia Acc/Inv disagrees. Both Finance subgroups agree with the normative statement.

If we compare these finding of the views of the respondent groups to the statement in question – *"Current sustainability evaluation tools and methods are too resource and time consuming."* – we can see that two

Finance groups think that there is a need for them to improve their assessment/evaluation processes. The processes have to become more efficient but at the same time, according to their answers, the outcome of the work within finance is serving its purpose, providing a value to business.

Respondents from the financial community commented the normative statement. One Finance Bank respondent who had chosen full agreement with the statement showed in fact a rather critical standpoint saying that *"Not highly rated, but companies with high sustainability performance!"* which indicates a considerable disagreement with the statement given and a distrust in current ratings. Also, a member from the Finance SRI Adv as well as a member from the ABB Acc Mgr groups states that real performances are crucial and have, therefore, not chosen an alternative on the agreement scale.

It can be noted that the subgroups of ABB and of Academia have internally widely diverting support to the normative statement put to them. The ABB Sustain Mgr group believes that sustainability ratings will provide them with business advantages which are in line with their professional work interest. We can see a likewise view within Academia Env Mgt being even more positive to the work which they are involved in and thus also dependent on. ABB Account Mgrs and Academia Acc/Inv are, however, significantly skeptical to eventual business advantages resulting from high sustainability ratings. Academia Acc/Inv has a research interest which is more focused on a critical perspective which could influence their standpoint to be more negative to the value of some sustainability ratings. ABB Account Mgrs have probably not seen a significant correlation between the ratings and their sale activities. This experience is supported by the customer respondent group, being even more critical to the value of sustainability ratings in their procurement activities. The financial ratings are not a concern that influences their purchase decisions. The financial actor groups are the most positive to the correlation between competitive advantage and sustainability ratings which could reflect the interest to believe in what you are working with.

The respondent group Finance Port Mgr/Analyst strongly rejects the normative statement that *"Companies with high rated sustainability performance (e.g. in Dow Jones Sustainability Index) have a competitive advantage in their businesses."* This group of professionals, on the contrary, are very convinced that there is no correlation, as put by a portfolio manager of a global ethic fund: *"Haven't seen any such tendencies. I have, however, seen studies from advocators of ethical investments that claim that this is the case, but these studies are based on erroneous analysis."*

7.4 Companies being committed to sustainability expressed in e.g. policies and reports perform better financially

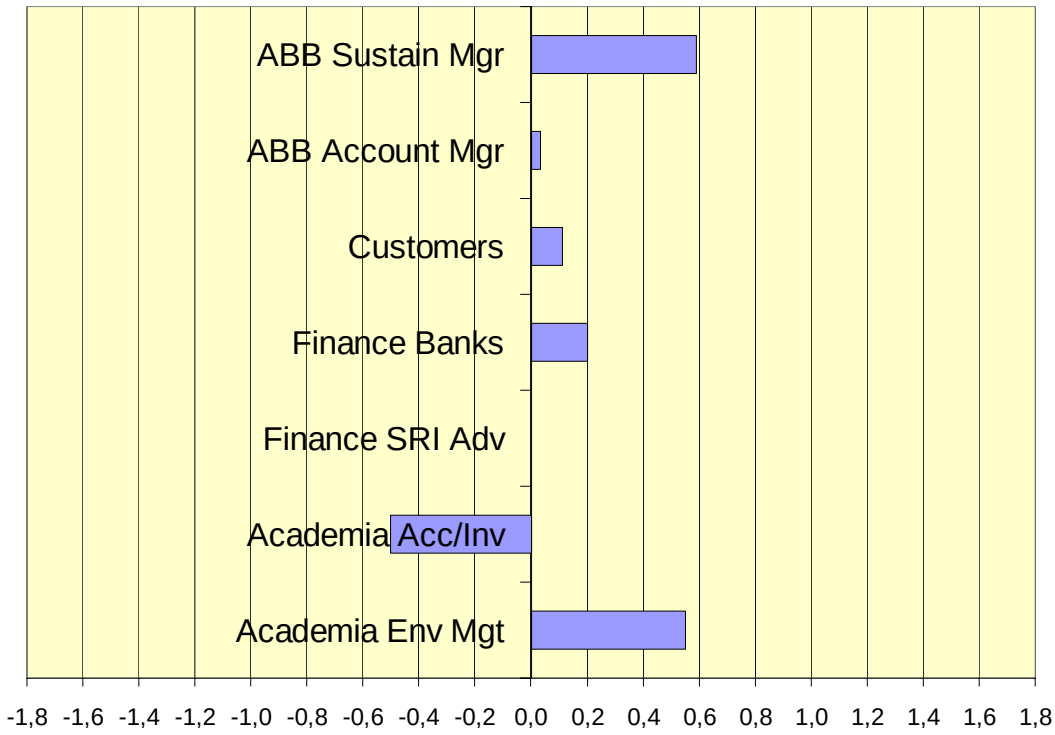

Figure 20. Companies being committed to sustainability expressed in e.g. policies and reports perform better financially.

The support for the normative statement is quite scattered, varying from considerable support to a considerable opposition. There is, however, only one group, the Academia Acc/Inv group, that is disagreeing with the statement. The other subgroup of Academia, the Academia Env Mgt group, is on the contrary as positive to the normative statement as the Academia Acc/Inv is negative to it. The most positive groups to the statement of all groups are ABB Sustain Mgr and Academia Env Mgt. The three remaining groups are more or less neutral or just above neutral to the normative statement put to them, the Finance Banks being a little bit more positive than the other Finance group – Finance SRI Adv.

The lack of strong support to the normative statement indicates that the actors see a need for more information, linked to performance, than just a written commitment on environmental and social issues in order to be confident that a better financial performance is taking place. This idea is supported by the additional comment given by the respondents that they need to see real data on achievements. It can be noted that the subgroups of ABB and of Academia have internally diverting support to the normative statement put to them. The sales managers of ABB, ABB Account Mgrs, are not as convinced as the sustainability profession, ABB Sustain Mgrs, of the financial benefits of working with extended corporate responsibility. If we compare this question to

the responses of the two following statements we see that the support for the claim of a link between A) commitments to sustainability in policies and reports to B) better environmental or social performance is larger than to C) financial performance.

7.5 Companies being committed to sustainability expressed in e.g. policies and reports perform better environmentally

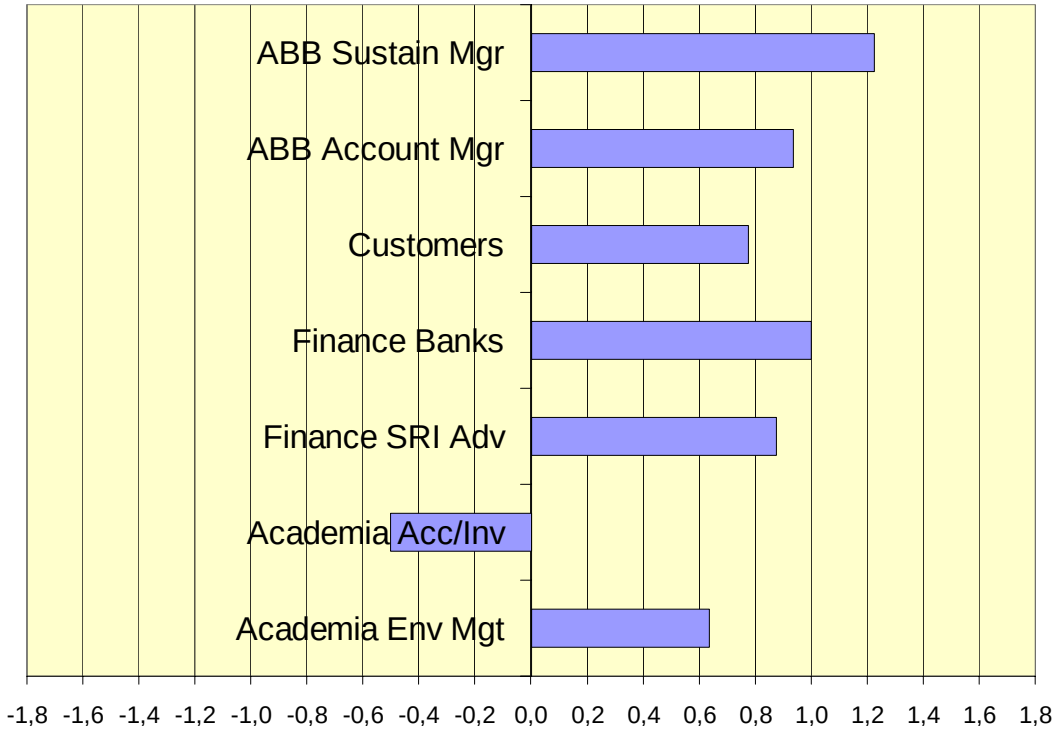

Figure 21. Companies being committed to sustainability expressed in e.g. policies and reports perform better environmentally.

There is a general support for the normative statement, except for the group Academia Acc/Inv which is considerably disagreeing with the statement. The with the statement most agreeing group is ABB Sustain Mgr. Then there is a little gap to the other positive groups which are in descending agreeing order Finance Banks, ABB Account Mgr, Finance SRI Adv and then Customers followed be the little bit less positive Academia Env Mgt. The Academia Acc/Inv group is the only respondent group that significantly disagrees with the normative statement.

The support for a link between *"Companies being committed to sustainability expressed in e.g. policies and reports perform better environmentally"* is stronger than the previous statement above with a link between commitment and financial performance. Only the ABB Sustain Mgr group sees that link between commitment and financial performance (see section 7.4). We can, however, see that all non-academic groups strongly agree with the notion of a linkage between written commitments and to environmental performance and this go for the professionals within the sustainability area but also for line and business organisation managers as well.

7.6 Companies committed to sustainability expressed in e.g. policies and reports perform better socially

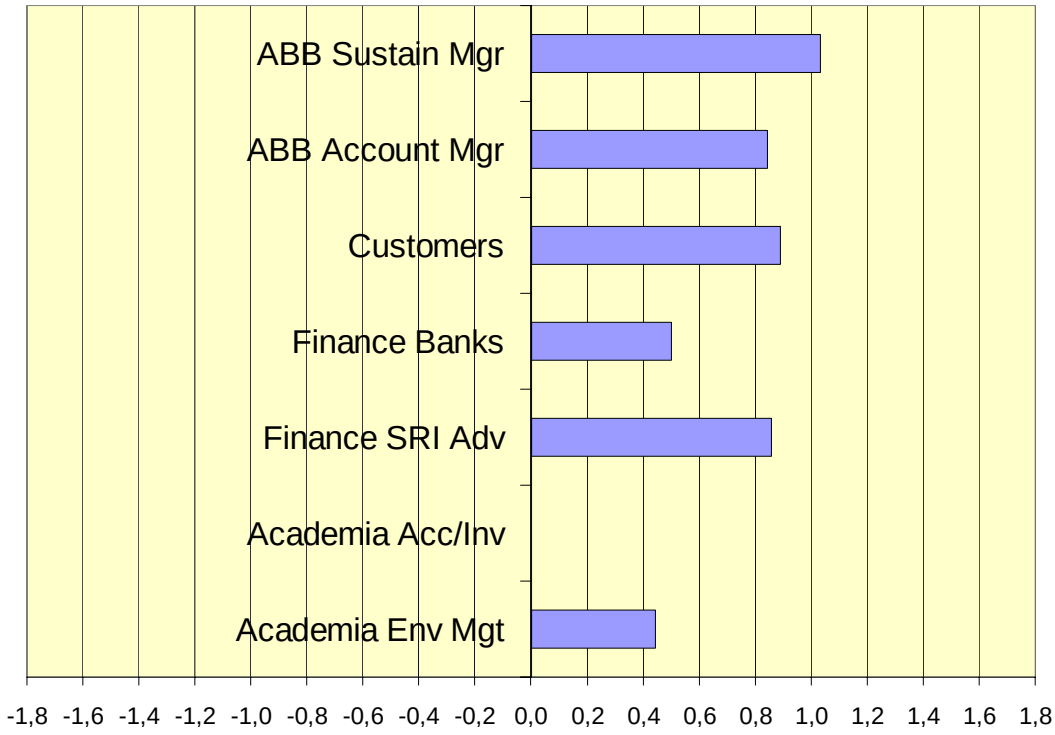

Figure 22. Companies being committed to sustainability expressed in e.g. policies and reports perform better socially.

There is a general support for the normative statement, except for the group Academia Acc/Inv which is totally neutral to the statement. The with the statement most agreeing group is ABB Sustain Mgr followed by Customers, Finance SRI Adv and ABB Account Mgr groups. Then there is a little gap to the two more moderately agreeing groups Finance Banks and Academia Env Mgt. The Academia Acc/Inv group is the only respondent group that is neutral to the normative statement.

The support for a link between *"Companies being committed to sustainability expressed in e.g. policies and reports perform better socially"* is very similar to the views of the respondents on the linkage between written commitment and environmental performance. The support for a linkage between written commitment and social performance is, hence, greater than the linkage between written commitments and financial performance according to the respondents. A difference that could be noted compared to the responses to the question on a link between commitment and environmental performance is that the support from the individual groups has shifted somewhat. Four groups do to a lesser degree believe in a linkage between written commitment and social performance while two groups believe to a higher degree in a higher linkage to social performance. ABB Sustain Mgr, ABB Account Mgr, Finance Banks and Academia Env Mgr to a lesser degree believe in a linkage between written commitment and social performance while Customers and Academia Acc/Inv have believe in a higher linkage to social performance. Except for Finance

Banks and Academia Acc/Inv these differences in support to the normative statements in section 7.4 and 7.5 are generally small.

7.7 Companies with an implemented environmental management system (e.g. ISO 1400, EMAS) perform better environmentally

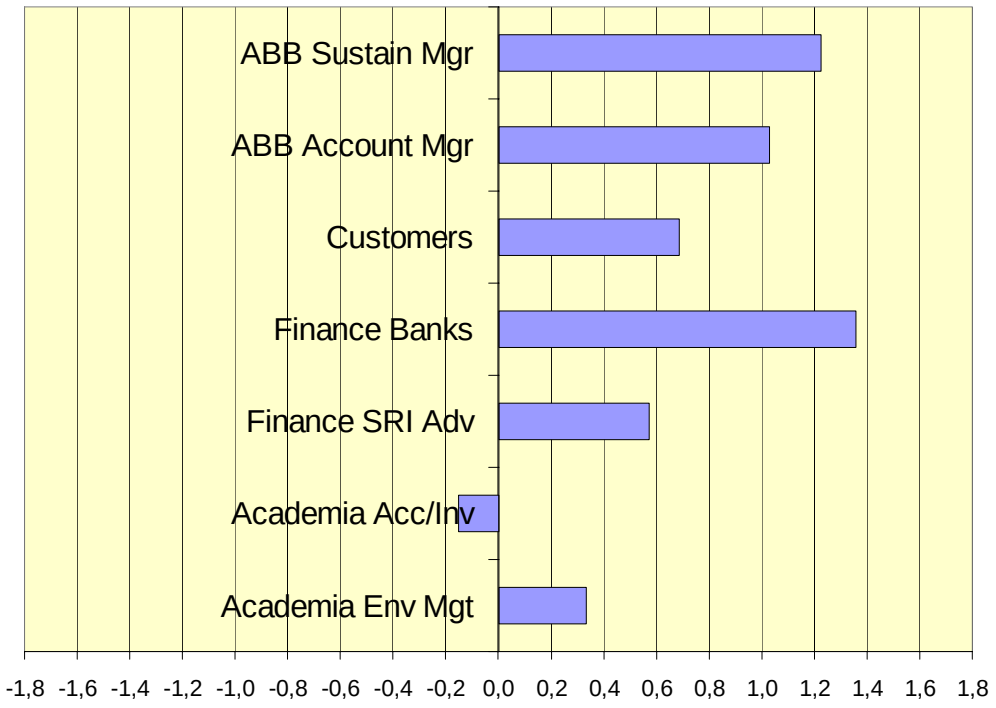

Figure 23. Companies with an implemented environmental management system (e.g. ISO 14001, EMAS) perform better environmentally.

The support for the normative statement is quite scattered, varying from strong support to opposing it. The most agreeing group with the statement is Finance Banks, with a strong support of what is claimed, followed by ABB Sustain Mgr. Then there is a gap to the next groups Customers and Finance SRI Adv which are to some extent agreeing with the normative statement. The two groups being least in agreement with the statement are Academia Env Mgt – which is slightly agreeing – followed by Academia Acc/Inv – which is slightly disagreeing with the statement put forward to them.

The ABB Account Mgr respondents are strongly supporting the statement that implemented environmental management systems and superior environmental performance goes hand in hand. This view is quite interesting since the same group selected management programs as the least important factor – also compared to all other respondent groups – as the *"Main driving force for working with sustainability issues"*, see section 6.7. In figure 9 in section 6.7 we see that the two most negative groups regarding management programs as driving forces for working with sustainability matters are the two academic groups. These groups sees management program as the weakest

driving force for working with sustainability issues. This view is also reflected in a critical not agreeing stand to the question on implemented EMS and environmental performance in this section – section 7.7. Similarly we can see that a positive view on management programs as a driving force for working with sustainability issues given by ABB Sustain Mgr in section 6.7 is reflected by them in their positive and agreeing response to the normative statement given to them in this section – section 7.7.

What are the explanations for the ABB Account Mgr to answer the two questions so differently? Compared to the other groups the answer from this ABB group could seem incoherent. Environmental professionals within and outside the company often see benefits by working with environmental issues within an environmental management system. Their views may influence the way other professionals – not working with the aspects as a core part of their daily routines – comprehend the issue.

Negative reports about the usefulness of EMS may seldom reach this group of decision-makers in industry. However, when the ABB Account Mgr group is faced with the specific question of driving forces for working with sustainability issues and asked to choose between a number of alternatives – customer requirements, legal requirements, management programs and sustainability awareness in society – the respondents will to a higher degree relate their answers to specific decision-making situations.

A Finance SRI Adv respondent expressed that the value of EMS as varying widely between companies: *"Depends on the qualities of the system. There is not a lot of distinguishing factor when it comes to pure coverage of EMS. Companies are converging on EMS."* Another Finance SRI Adv referred to a report of theirs dealing with the matter and the quotation mentioned was that: *"An adequate environmental management system is a necessary step companies must take in improving their environmental impact, however, as a system it does not guarantee significant environmental improvement. For that investors and regulators need to look beyond words and policies to a company's actions."* (EIRIS, 2005). The comment from a Finance Bank respondent is perhaps not as convincing and may not indicate the same insights: "*As you commit yourself to improvements that ought to be the case compared to not having an EMS*." The respondents of the Finance Port Mgr/Analyst group did not know whether this normative statement is valid or not. One ethical fund manager expressed his knowledge gap combined with a general positiveness since it ought to be good as: *"Don't know. I suppose so."*

7.8 Companies conducting environmental analysis on their products (e.g. LCA, Life Cycle Assessment) perform better environmentally

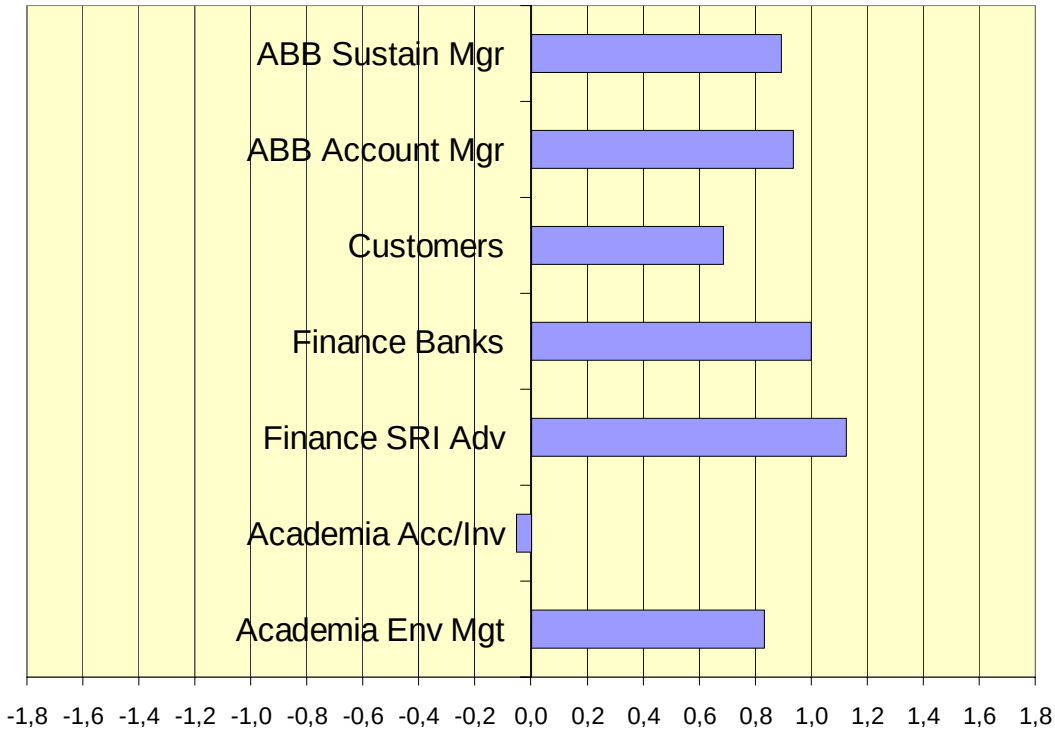

Figure 24. Companies conducting environmental analyses on their products (e.g. LCA, Life Cycle Assessment) perform better environmentally.

There is a general support for the normative statement, except for the group Academia Acc/Inv which is slightly disagreeing with the statement. The groups agreeing the most with the normative statement are in descending order the Finance SRI Adv and Finance Banks groups followed by ABB Account Mgr, ABB Sustain Mgr, Academia Env Mgt and Customers. All these groups show strong support to the normative statement given to them. One Finance SRI Adv respondent that provided additional comments to the normative statement declared that they *"do use it as an indicator in the assessment of capital goods companies."* The Academia Acc/Inv group is the only respondent group that is just below neutral, disagreeing with the statement an one additional comment that was given the normative statement was that *"These tools are seldom used for steering the development but to a larger extent for mapping today's position without changing the current position"*.

It should be noted that there is no direct linkage between performing environmental analyses on its products and better environmental company performance but there may, of course, be a strong correlation between the two where firms implement the knowledge from the assessments into designs. It is interesting to see that the Academic group occupied with LCA and EMS supports this idea while the Academic group focusing on company environmental accounting and environmental/social performance of investments does not at all agree with the proposed linkage. Another aspect worth taking notice of is that the most positive groups to the linkage between

environmental assessments on products and company environmental performance are the two finance groups. These two groups are, on the contrary to the other groups, considerably less positive to the linkage between environmental product declarations, based on LCAs, and company environmental performance than to LCA and company environmental performance.

7.9 Companies with environmentally declared products (e.g. EPD, Environmental Product Declaration) perform better environmentally

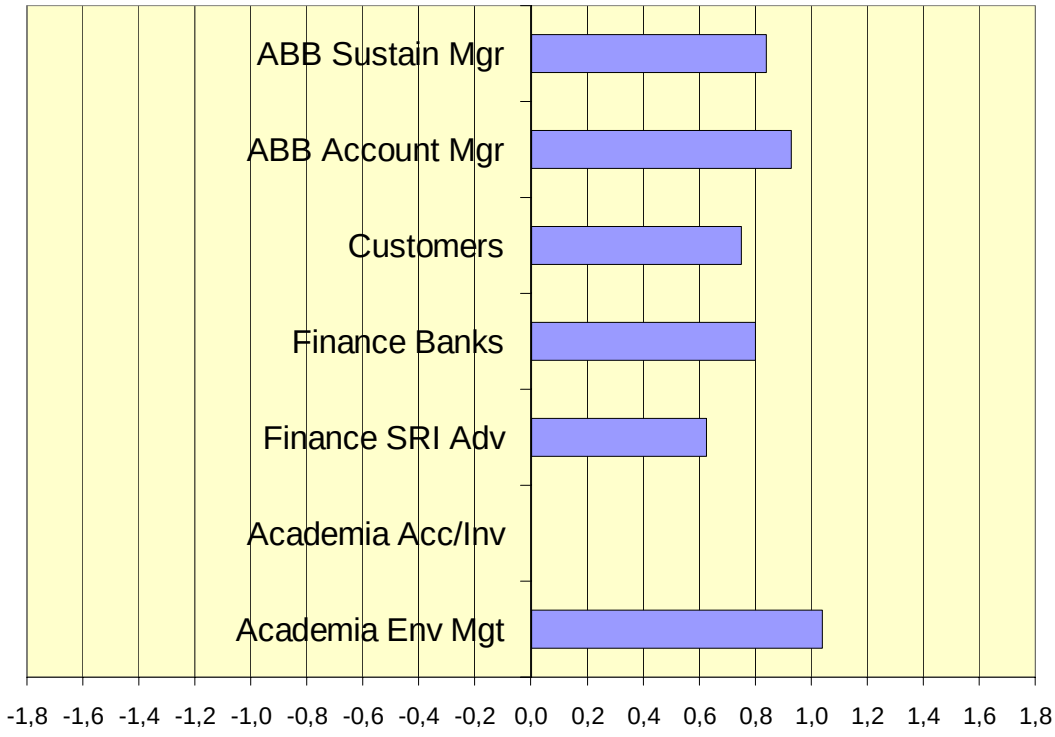

Figure 25. Companies with environmentally declared products (e.g. EPD, Environmental Product Declaration) perform better environmentally.

There is a general support for the normative statement *"Companies with environmentally declared products (e.g. EPD, Environmental Product Declaration) perform better environmentally."* except for the group Academia Acc/Inv which is neutral to the statement. The group agreeing the most with the normative statement is the other subgroup of Academia, namely Academia Env Mgt which then is followed by, in descending order, ABB Account Mgr, ABB Sustain Mgr, Finance Banks, Customers and Finance SRI Adv. All these groups show strong support to the normative statement given to them. The Academia Acc/Inv group is the only respondent group that is neutral to the normative statement.

We see here, as in the question on the linkage between LCA and company performance, that the Academic group occupied with LCA and EMS, Academia Env Mgt, supports the idea that companies with EPDs have a better environmental performance while the academic group focusing on company environmental accounting and environmental/social performance of investments,

Academia Acc/Inv, does not agree with the proposed linkage. The two finance groups are not as positive to the linkage between EPDs and company performance as they are to LCAs and company performance. The drop in agreement is significant especially for the Finance Acc/Inv group where the support for statement has almost dropped by half.

7.10 Companies with an implemented occupational health and safety management system (e.g. OH SAS 18001, SA 8000) perform better socially.

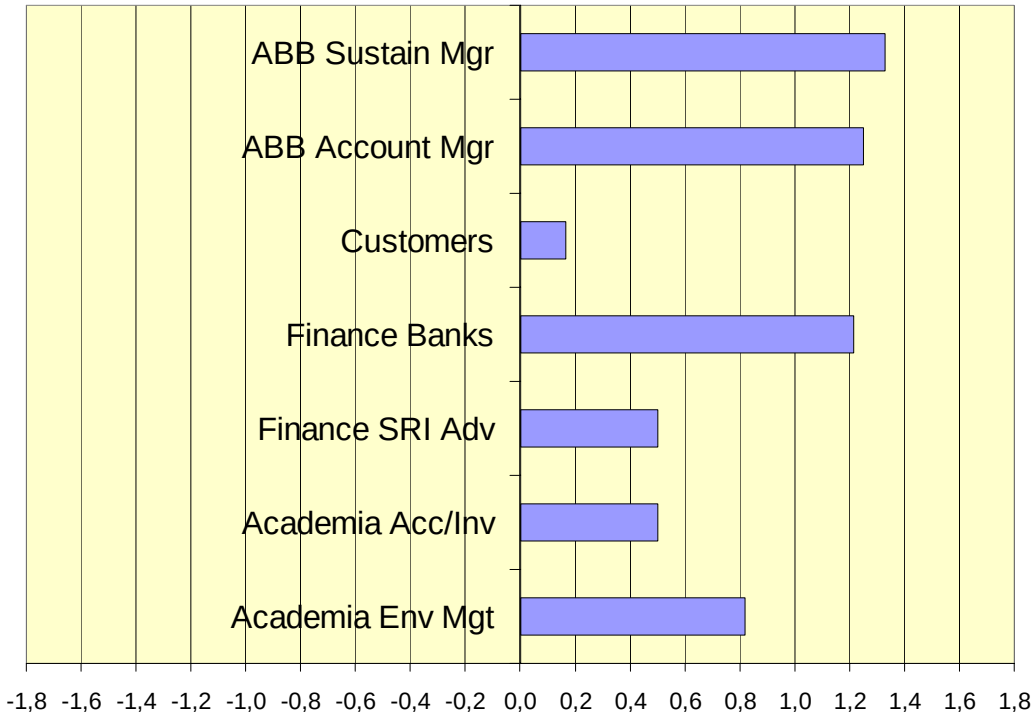

Figure 26. Companies with an implemented occupational health and safety management system (e.g. OH SAS 18001, SA 8000) perform better socially.

There is a general support for the normative statement *"Companies with an implemented occupational health and safety management system (e.g. OH SAS 18001, SA 8000) perform better socially"*, except for the group Customers where the support is barely in agreement with the statement. Three groups are strongly agreeing with the normative statement put to them. These three groups are in descending order ABB Sustain Mgr, ABB Account Mgr closely followed by Finance Banks. Thereafter, there is a gap down to Academia Env Mgt with a less significant agreement with the normative statement given to them. Even more so moderate is the support from the Finance SRI Adv and Academia Acc/Inv, almost equal in their support. The Customer group has the most restrained support which is just above neutral to the normative statement.

ABB Account Mgr is a group strongly supporting the statement that implemented occupational health and safety management systems and superior social performance goes hand in hand. This view is coherent with the view that the ABB Account Mgr group has on the link between

environmental management systems and environmental performance. But if we compare these views to question in section 6.7 we get a somewhat different picture. There the same ABB group sees management programs as the least important factor – also compared to all other respondent groups – for working with sustainability issues. More on this topic how – and why – ABB Account Mgr answers these questions so differently is available in section 7.3 on the link between company environmental performance and environmental management systems.

The second most negative group to the question in section 6.7 is Academia, seeing management program as the weakest driving force for working sustainability issues which is coherent with Academia's critical stand on EMS to the normative statement in section 7.7. The two Academia groups are, however, in this section – section 7.10 – to a larger extent agreeing with the statement that companies with an occupational health and safety management system perform better socially than to the statement on the link between EMS and environmental performance (section 7.7).

Customers are, on the contrary, more positive to the company environmental performance linked to environmental management systems than they are to the link between company social performance and occupational health and safety management system. This is also reflected in the stands on the normative statements on EMS and OHMS linked to respective performances in section 7.7 and section 7.10 (this section). Another linkage between the questions is the positive view on management programs as a driving force for working with sustainability issues given by ABB Sustain Mgr in section 6.7 which is reflected in their agreeing response to the normative statement on EMS and OHMS given to them in this section 7.7 and section 7.10, respectively.

The additional comments to this normative statement are similar to those given to the statement on the value of EMS in section 7.7. The additional comments are only given by the financial respondent groups. A Finance SRI Adv respondent summarises its point of view as follows: *"OHS performance tends to improve considerably when companies start to focus on the issue. Cultural shift seems to be quite important, not only formal management systems."* An additional comment given by a respondent from Finance Banks does not indicate the same profoundness: *"That ought to be the case. It is a tool in the improvement process anyway."* (However, it shall be stated that the level of insights among the actors within Finance Banks and Finance SRI Adv seem, to our knowledge, vary considerably.) The respondents of the Finance Port Mgr/Analyst group did not know whether this normative statement is valid or not. The common response was simply*: "Don't know."*

7.11 Companies with an expressed commitment to the principles of the UN Global Compact are more responsible corporate citizens that perform better socially and environmentally

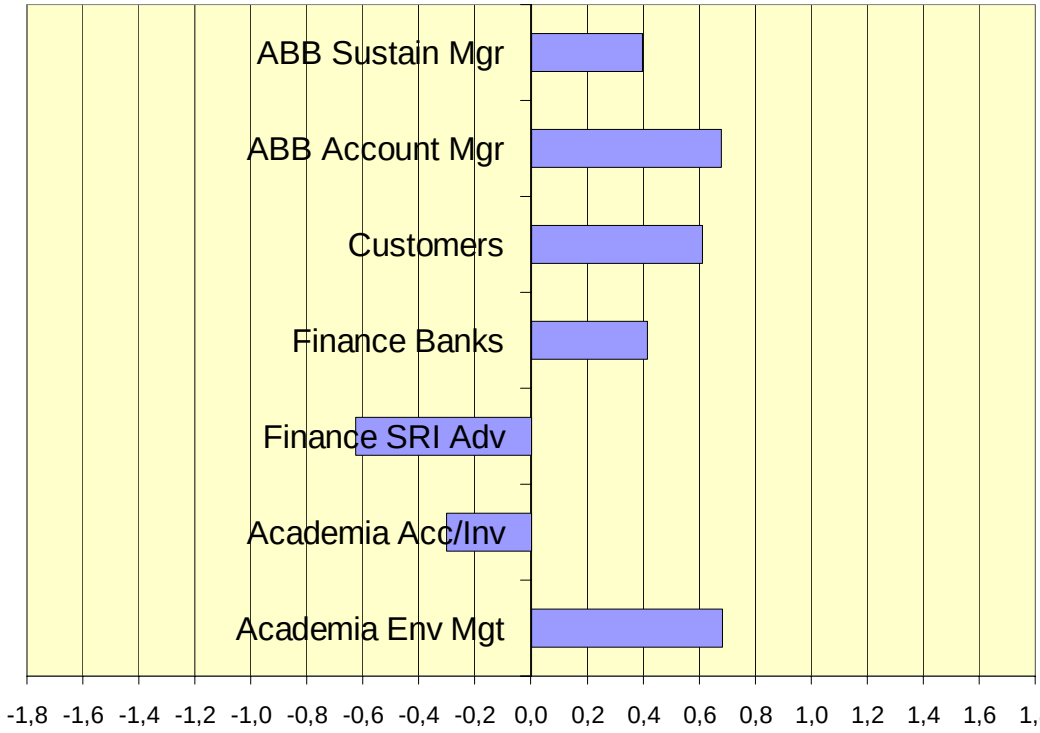

Figure 27. Companies with an expressed commitment to the principles of the UN Global Compact are more responsible corporate citizens that perform better socially and environmentally.

The support for the normative statement is quite scattered, varying from considerable support to a considerable opposition. The groups agreeing the most with the statement is Academia Env Acc closely followed by ABB Account Mgr and Customers. Thereafter, the two groups with somewhat more moderate support are Finance Banks and ABB Sustain Mgr. The two remaining groups are disagreeing with the normative statement put to them. Finance SRI Adv is considerably opposing the statement and Academia Acc/Inv is also disagreeing but to a lesser degree.

The three most positive groups to the normative statement that commitments expressed to the UN GC are Academia Env Mgt, ABB Account Mgr and Customers. These groups can be viewed as actors not dealing with external, outside-in, company performance evaluation of its extended – environmental and social – responsibilities in relation to written commitments on professional bases. The two groups more involved with these aspects, of valuing company performance on environmental and social aspects are less convinced that companies' commitments to UN GC mean superior company performance on these issues. In fact the respondent groups most occupied with these evaluations, Finance SRI Adv, is the group that opposes the normative statement the most.

The support to UN GC within industry and general academic environmental management and LCA research (ABB Sustain Mgr, ABB Account Mgr, Customers, Finance Banks and Academia Env Mgt) is not corresponding to the experiences of the people analysing the outcome of corporate social responsibility from the outside-in (Finance SRI Adv and Academia Acc/Inv). Moreover, the international SRI analysis firms being rated in top position by the Mistra initiated review (SustainAbility and Mistra, 2004) are among the most critical actors within the Finance SRI Adv group, stating that UN GC is not very indicative of company actions. This is also shown in the comments from the Finance SRI Adv group. One respondent states that UN Global Compact *"commitments are often not linked to a systematic work."* Another respondent declares that *"Global Compact is not indicative of anything."* and that its assessment process *"does not come from GC or GRI Sustainability Reporting."* A comment from the Finance Bank group indicates a similar standpoint: *"Hopefully, but words are not enough. You have to show performance. It is only a commitment."* This massive critique on the current value of UN GC has made one of the critical actors in the Finance SRI Adv respondent group to, in collaboration with UN Global Compact, develop a tool with performance indicators related to the principles of Global Compact in order to make assessments *"go beyond a pro-forma assessment of what companies say, and focuses on what companies do."* (Innovest, 2005).

The respondents of the Finance Port Mgr/Analyst group did not know whether this normative statement is valid or not. The common response was simply*: "Don't know."* The comment from one global ethic fund manager was, furthermore: *"Don't know, I have never heard the name UN Global Compact."*

Interesting to note is that the respondents' opinions to the *society value* resulting from corporate commitments to GC is far different from their ratings of the importance of GC from a *business perspective* when compared to other tools discussed in section 6.10.

7.12 Companies that report according to the Global Reporting Initiative (GRI) Guidelines perform better socially and environmentally

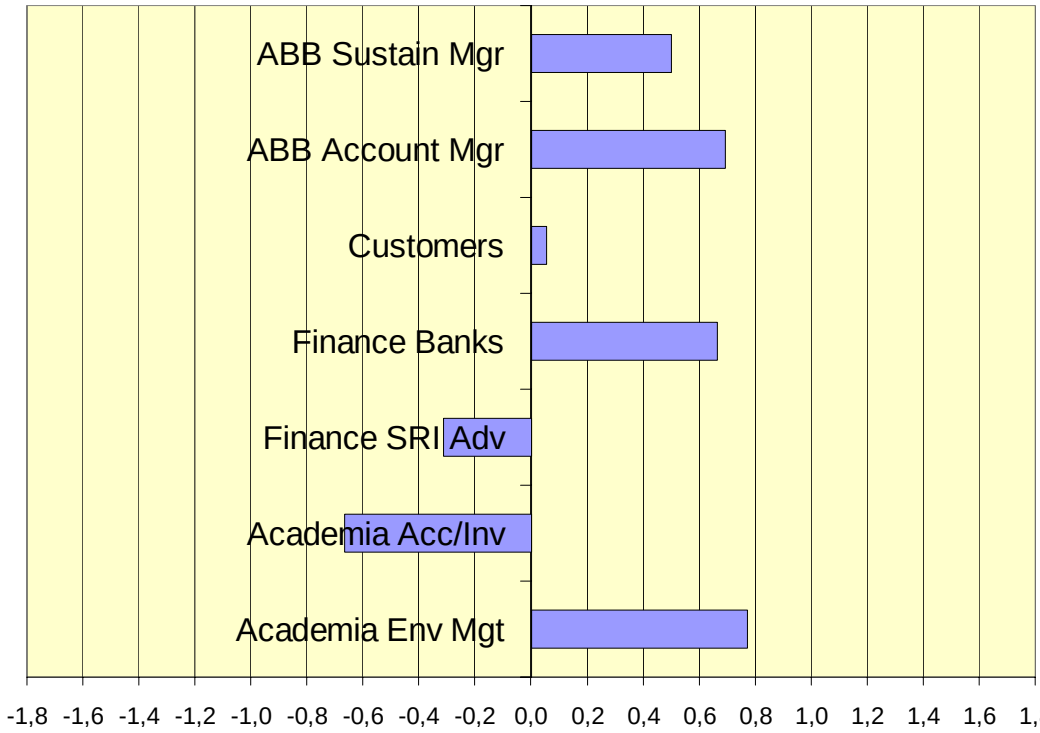

Figure 28. Companies that report according to the Global Reporting Initiative (GRI) Guidelines perform better socially and environmentally.

The support for the normative statement is quite scattered, varying from considerable support to a considerable opposition. The four groups agreeing the most with the statement are in descending agreeing order Academia Env Mgt, ABB Account Mgr and Finance Banks. The Customers group is more or less neutral to the statement, just barely on the agreeing side. Finance SRI Adv is disagreeing with the normative statement and Academia Acc/Inv is in considerable disagreement with the statement.

Also here, in the responses to this normative statement, there is a support from the Academia Env Mgt and ABB Account Mgr as to the question on UN GC and company performance on its extended responsibilities in section 7.12. But, as with the former question this opinion is not corresponding to the experiences of the actors focusing on valuing company performance on social responsibility issues. Academia Acc/Inv and Finance SRI Adv are, in fact, opposing the statement that GRI reporters perform better socially and environmentally.

As with the former question, on UN GC and a linkage to company performance, the most negative group to the normative statement on GRI reporters and their superior performance are the international SRI advisors being top-rated by the Mistra initiated review (SustainAbility and Mistra, 2004). Some comments on GRI and superior environmental and social performance from the

Finance SRI Adv respondent group are: *"There is not a clear link between reporting according to GRI and a better social and environmental performance."* and *"Sustainability issues can be driven by reporting on it, but it is more about disclosures than GRI.* Also the combined critique on GRI and UN GC, displayed in previous section (section 7.7), is illustrative here too: *"We do not use Global Compact or Global Reporting Initiative."* Another respondent is truly critical to the contribution of GRI which is seen in following expressions: *"I do not regard GRI reports very well…It doesn't help to have a 400 page GRI report from XXXX. I still have to call them."* These critical comments to a linkage between GRI and superior company performance should be compared to the positive reply by the two ABB respondent groups and by the Academia Env Mgt.

7.13 The indicators comprising the Global Reporting Initiative (GRI) Guidelines constitute a good foundation for evaluating the sustainability of a company

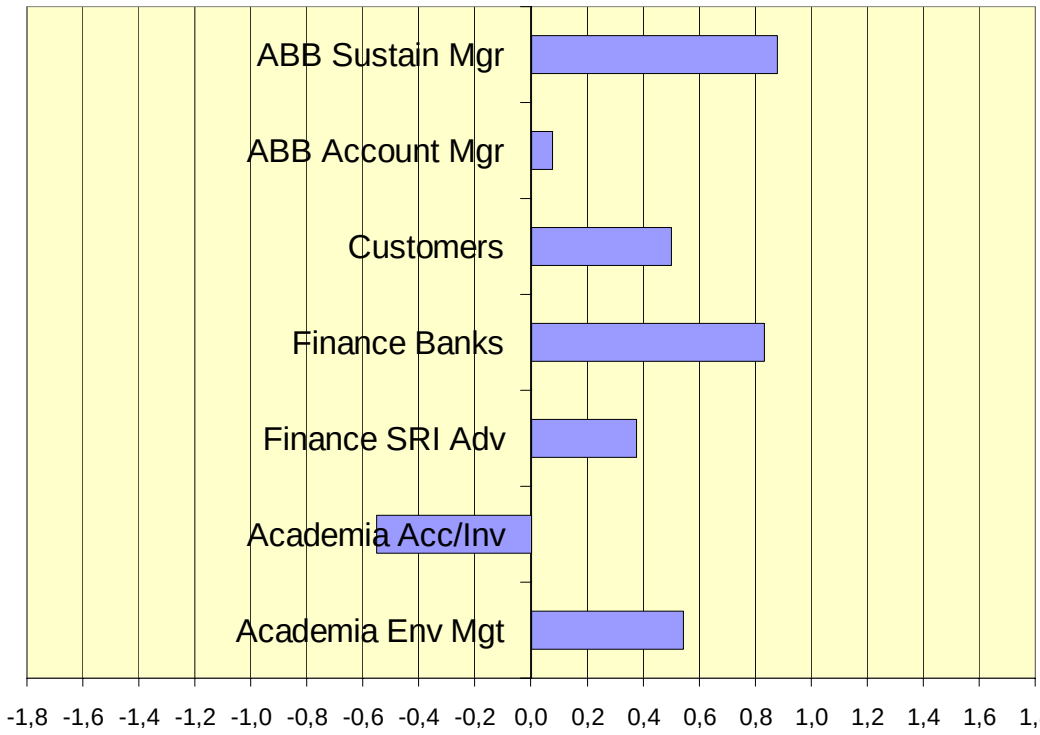

Figure 29. The indicators comprising the Global Reporting Initiative (GRI) Guidelines constitute a good foundation for evaluating the sustainability of a company.

The support for the normative statement is quite scattered, varying from considerable support to a considerable opposition. ABB Sustain Mgr and Finance Banks are the two groups that agree the most with the statement. Customers and Finance SRI Adv also support the normative statement, but to a lesser degree. The ABB Account Mgr group is just above neutral, supporting the statement. The Academia Acc/Inv group is the only respondent group that significantly disagrees with the normative statement.

This normative statement is more precise than the previous one on GRI. The previous statement was more of general character on a linkage between GRI reporters and better performance on social and environmental aspects. The normative statement in this section is asking for the usefulness of GRI indicators for evaluating company performance. In the responses we can see a shift in the extent of agreement between the two ABB groups. The ABB Account Mgr is more in agreement with the more general statement in section 7.12 than the statement of this section. The ABB Sustain Mgr respondent group is, on the contrary, to a larger extent regarding GRI indicators as useful for evaluating the sustainability of a company (this section 7.13) than agreeing with the statement that GRI reporters have a better social and environmental performance (section 7.12). Customers and the two groups of academia are also to a larger extent agreeing with the usefulness of GRI indicators for evaluating company performance than agreeing with the former more general statement in section 7.12.

The Finance SRI Adv group is positive to the GRI indicators as a foundation for evaluating the sustainability of a company, although the support is not strong. This group disagrees to the former statement that GRI reporters are superior in their extended responsibilities. However, also here in this section, the by the Mistra initiated review (SustainAbility and Mistra, 2004) top rated international SRI advisor firms disagree with the normative statement about the usefulness of GRI indicators. One short additional comment from one respondent wheather GRI constitutes a good foundation for evaluating the sustainability is *"No!"* Another Finance SRI Adv respondent explains that *"I don't believe that GRI is the best route."* A comment from Finance Bank is that *"The indicators are too generic and the sector initiatives to develop more sector adjusted indicators are therefore to be applauded. Sometimes you don't see the wood for all the trees in GRI-reports…Some practical problems: if you outsource production the KPIs [Key Performance Indicators] will look better!"* Also academia has provided additional comments on the value of GRI reports for evaluating company performance. An Academia Acc/Inv comment states that *"It tells us something, but lacks future information e.g. on what the strategies are for future product development and the preparedness for future risks."*

One of these SRI Advisors sees a much-increased value in the coming 2006 GRI Guidelines for evaluating company performance. This SRI advisor firm was not satisfied with the usefulness of current GRI Guideline 2002 and its indicators (cf. GRI, 2005), but has been involved in the development process of the new coming guideline – GRI G3. Several banks have also been participating in the process of developing the GRI G3 2006.

The respondents of the Finance Port Mgr/Analyst group did not know whether this normative statement is valid or not, or strongly disagreed with the statement.

7.14 The process how to work with sustainability issues will undergo major changes during the next 2-3 years

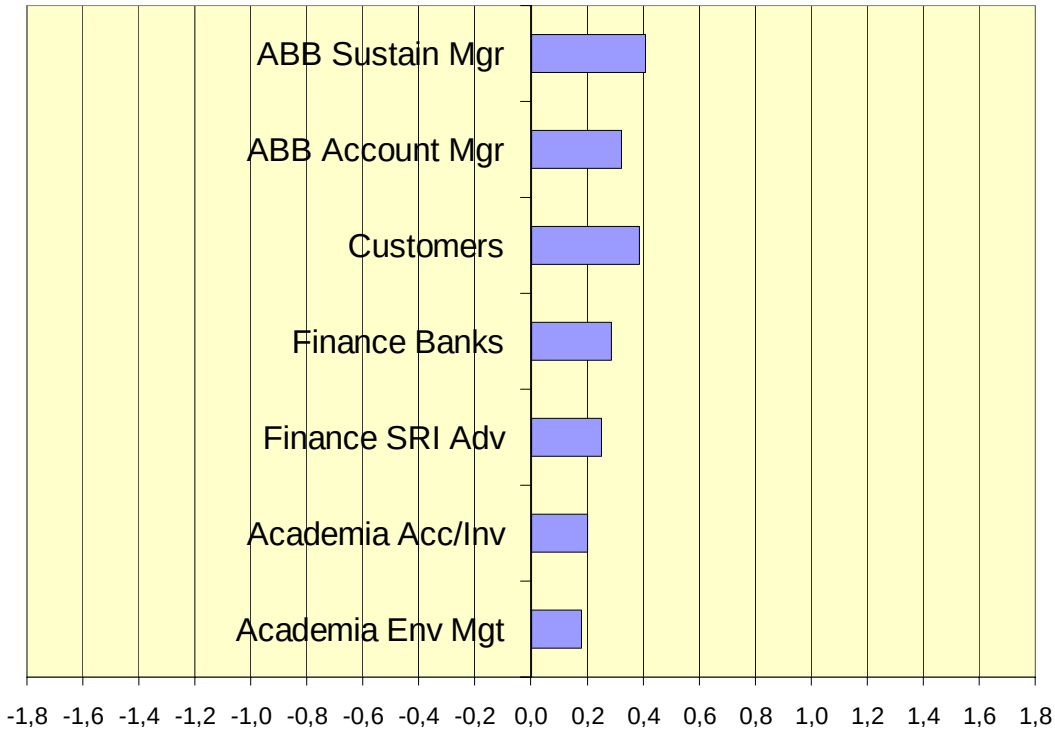

Figure 30. The process how to work with sustainability issues will undergo major changes during the next 2-3 years.

In general there is a moderate support for the normative statement. The spread in support is small where ABB Sustain Mgr, Customers are the groups agreeing the most with the statement followed by ABB Account Mgr, Finance Banks, Finance SRI Adv. Not far from the other groups' position are the two groups of Academia, Academia Acc/Inv and Academia Env Mgt, being the groups least agreeing with the normative statement. But as stated above, the spread in the support to the statement between the different respondent groups is, however, small. The respondents do, in general, not see great changes of how sustainability work is carried out over the next couple of years.

7.15 The process how to work with sustainability issues will undergo major changes during the next 5-6 years

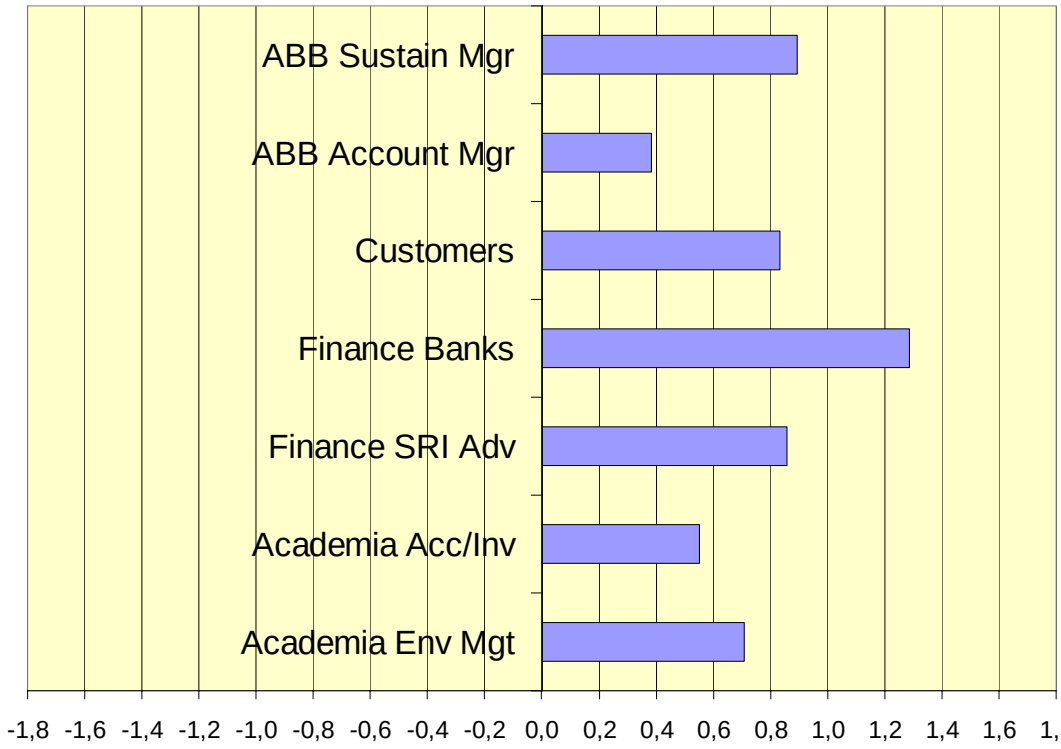

Figure 31. The process how to work with sustainability issues will undergo major changes during the next 5-6 years.

In general there is a strong support for the normative statement. The strongest support for the statement is given by Finance Banks which after a gap is followed by ABB Sustain Mgr, Finance SRI Adv and Customers groups all with strong support, to an almost equal degree. Academia Acc/Inv and ABB Account Mgr, in descending agreeing order, provide a more moderate agreement to the normative statement given to them.

7.16 ABB is a proactive company in the sustainability area

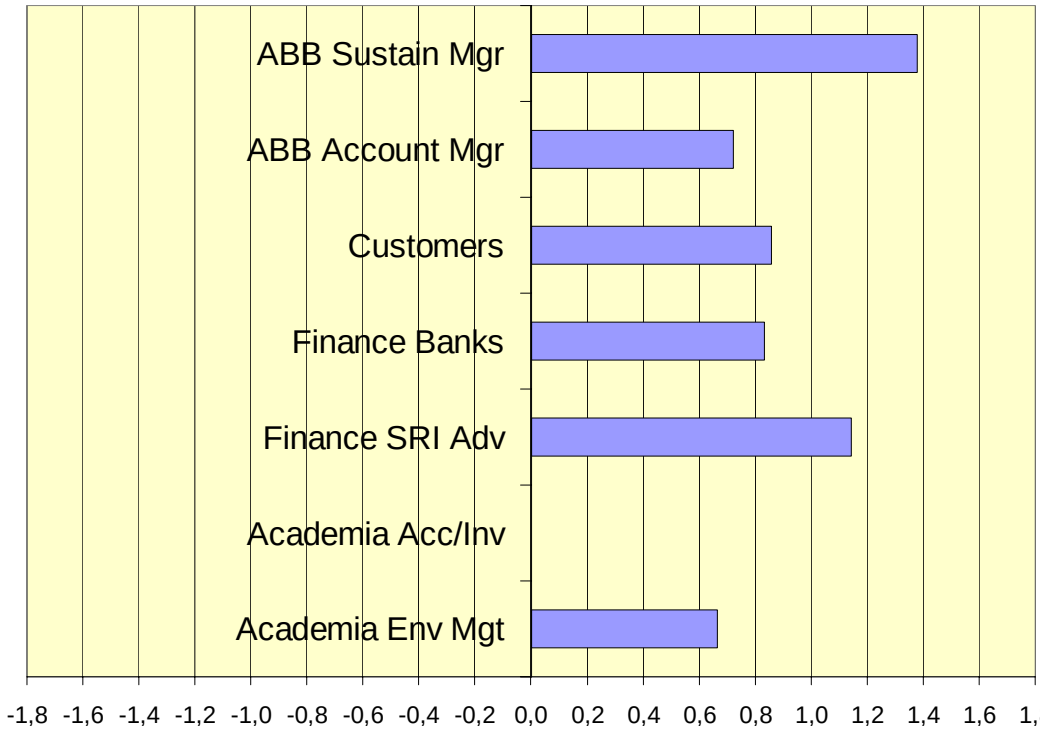

Figure 32. ABB is a proactive company in the sustainability area.

There is a general strong support for the normative statement, except for the group Academia Acc/Inv which is totally neutral to the statement. The respondent group agreeing the most with the statement is ABB Sustain Mgr followed by Finance SRI Adv. There is a gap between these two groups in the support to the statement which then is followed by another gap to the following groups, in descending agreement order, Customers, Finance Banks, ABB Account Mgr and Academia Env Mgt. The Academia Acc/Inv group is the only respondent group that is neutral to the normative statement.

The most positive group to ABB's proactivness on sustainability issues is, perhaps not surprising, the ABB Sustain Mgr group itself. The group strongly agrees with the normative statement on the value of their own work, but they are not alone. Their positive view on their own work ABB's proactivness is also strongly supported by the Finance SRI Adv group specialised in evaluating corporate handling of social and environmental issues. The support for the normative statement is considerable from all non-academic groups, but the line organisation of ABB is the non-academic group agreeing the least with the normative statement that ABB is a proactive company in the sustainability area. This could indicate a gap between the work on social and environmental issues within ABB between those responsible for these issues and the line organisation managers. The sustainability organisation may overemphasise its core work while the line organisation may not always get a notion of all initiatives taken, but a belief in what one does is often a prerequisite for at al being able to succeed. The Academia Acc/Inv group takes a neutral stand on whether ABB is a proactive sustainability wise or not. This group of academic researchers is less inclined to adopt the

general views of the environmental and sustainability agenda, in general not being too overwhelmed of corporate voluntary actions. These academics are also less inclined to become embraced in assumption of the importance for corporations to manage sustainability issues, as seen the following question.

The respondents of the Finance Port Mgr/Analyst group did not know whether this normative statement is valid or not. The common response was simply: *"Don't know."*

7.17 Sustainability management is crucial for ABBs business

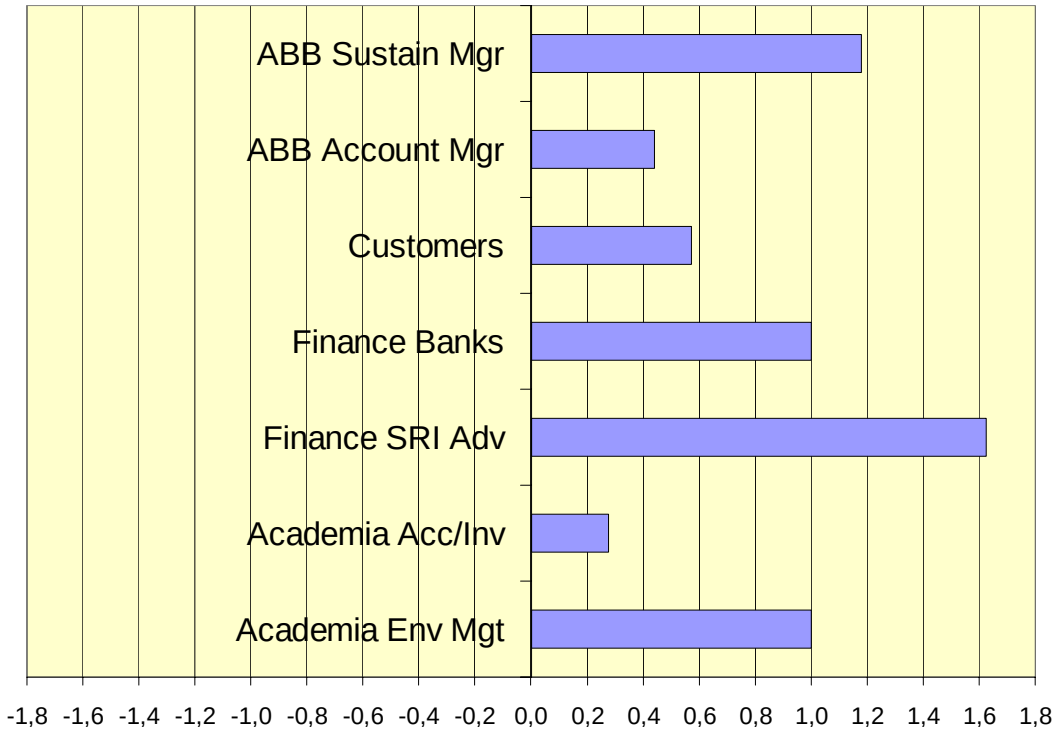

Figure 33. Sustainability management is crucial for ABBs business.

In general there is a strong support for the normative statement. Finance SRI Adv gives a very strong support for the statement. The groups of ABB Sustain Mgr, Finance Banks and Academia also strongly agree to the normative statement, but to a somewhat lesser degree. A more moderate support to the statement is thereafter provided by, in descending agreeing order, Customers, ABB Account Mgr and Academia Acc/Inv.

An overwhelming support for the normative statement that corporate work with sustainability issues is crucial for industry' – and ABB's – business is found in the Finance SRI Adv group. This is in line with one of the main tasks for Finance SRI Adv actors to assure its stakeholders that these aspects are crucial for business in order to create a foundation for themselves as SRI advisors to operate. The other three groups making a living on the prosperity of the environmental and social extended responsibility agenda also support this view. Strong support for the normative statement

is received from ABB Sustain Mgr, Finance Banks and Academia Env Mgt. Less strong beliefs in the importance of extended responsibility engagement is found among ABB Account Mgr and Customers. These actors are to a larger extent occupied with line organisation matters, seemingly not seeing a strong integration need for these extended responsibility aspects with day-to-day their businesses and decision-making. The weakest support for the normative statement is received from a group that also makes a living on the environmental and social extended responsibility agenda, Academia Acc/Inv, but not necessarily on its advocating its excellence.

The respondents of the Finance Port Mgr/Analyst group did not know whether this normative statement is valid or not. The common response was simply*: "Don't know."*

8 Input from mainstream financial analysts and portfolio managers

The respondents of the Finance Port Mgr/Analyst group did have great difficulties to answer the questionnaire since they often lacked critical knowledge about how environmental and social aspects affect and are dealt with in industry. A vast number of the questions given to this respondent group were simply replied by a passing: *"Don't know."* This difficulty is why these answers are not displayed in the figures of section 6 and 7. The Finance Port Mgr/Analyst, however, provided additional comments, often of a general character, that constitute this section 8. This general lack of fundamental insight into the world of extended corporate responsibility was true for the mainstream financial analysts and portfolio managers that participated in this study. Even the fund managers of ethical funds had the similar knowledge about the environmental and social issues in industry and where as negative to including those into the financial industry and investments. These fund mangers, included in the study, do not make ethical or sustainability screens and are not at all involved in the process as explained by one fund manager for an ethical fund: *"We receive a list on which companies that are okay. Those not included are not invested in. In our own financial analysis we are concerned with revenues and cash flows."* Therefore, these ethical fund managers are in the study placed in the group of mainstream financial analysts and portfolio managers, namely, the Finance Port Mgr/Analyst respondent group.

We retrieved several indications that financial analysts are not accustomed to environmental and social issues in their daily work. A financial analyst of a larger bank in the study has the responsibility to evaluate ABB for several segments of the bank, he stated that *"We do not pay attention to environmental and social aspects"* in their analyses. Sustainability – environmental and social – issues are for a financial analyst of an ethical fund somewhat remote since as he explained *"We do not conduct any analysis ourselves on these matters. XXXX makes the analysis to [NAME OF THE BANK] Ethical analysis. We do not look for companies that are pro-active on environmental and social issues. We receive a list on which companies that are okay. Those not included are not invested in. In our own financial analysis we are concerned with revenues and cash flows."* Another fund manager for an ethical fund in another company in the financial sector stated that: *"I have no knowledge about how to make environmental and social evaluations."* and that *"I do not think companies' work with environmental and social issues have any effect at all. I get no information from the ethic screeners at [NAME OF THE COMPANY]. That information goes only to our ethical [SUB-COMPANY]. We are not comprised by the ethical screeners."* and continues to explain the value of information from stock exchange companies on their own handling of their extended responsibility *"I receive sustainability reports from ABB, but I cannot spend time reading such matters."* The ethical fund manager concludes that *"The only thing a care about is to get the highest returns possible."*[2]

It was not easy to retrieve information from the respondents of the Finance Port Mgr/Analyst group. As described above, they lacked knowledge regarding these issues which makes it

[2] This view expressed by the fund manager goes in line with the results from a German study, that encompasses a global perspective, including 22 Swedish based companies, where it is found that the reporting companies believe their voluntary reports are read by the financial community (owners/investors) and customers, but these stakeholders are the ones reading the voluntary reports the least (ECC, 2003; cf. Flening, 2005) and the succeeding study in 2005 reveals that CSR reporters' main aim is currently shareholders and investors, but the financial community is the stakeholder group in the study that are least favourable to CSR reports (Pleon, 2005).

troublesome to fill out the questionnaire with industry specific questions on environmental and social issue. Another obstacle was that some financial analysts and portfolio managers were not overwhelmingly happy that we managed to get a hold on them. Twice, after many phone calls within the bank organization, we were retrieved the comments from the analyst we approached that
Mainstream financial actor – respondent X:
"How have you been able to find us? You should not be able to get hold of us. We are an internal unit. We have Client Relationship Managers that shall deal with external contacts. We have a, Client Relationship Manager that is responsible for ABB."
Mainstream financial actor – respondent Y:
"How have you managed to get a hold on us? You are not supposed to be able to get hold on us. We have a unit that is handling customer contacts. Call our client relationship managers instead."

However, to speak only to a client relationship manager is not coherent to the scope of this study since the study explores the opinions and actions of the decision-makers as well as sustainability and environmental professionals within industry.

9 Longitudinal study – 1999 to 2005

This section is constituted by a comparative longitudinal study. The result from the current *"2006 study"* with data for 2005, is compared with the result from a previous study, *"2001 study"* with data from 1999 (Laeastadius & Karlson, 2001; Karlson, 2002). The aim for the 2001 study was to analyse whether, and to what extent, the environmental management tool LCA for analysing products' environmental aspects was perceived as being efficient within ABB. A questionnaire was sent out to two groups of ABB employees, in the 2001 study, with different roles in relation to LCA (65 of 84 replied). The first group was environmental managers and specialists. The other group was technical managers, product developers and other line management people.

Both studies were based on questionnaires. The people included the 2001 study was ABB employees but the 2006 study embraced both ABB people and external stakeholders. Only the answers from ABB employees are analyzed here, i.e. 65 persons in the 2001 study and 48 ABB employees in the 2006 study. Seven comparable questions are analyzed in this section.

The people in each study are divided into two categories:

- 2001 Env Mgrs; environmental manager or specialist
- 2001 Line Mgrs; technical manager, product developer or other line manager
- 2006 Sust Mgrs; sustainability manager or controller
- 2006 Acc Mgsr; group account managers with responsibility for a key account

9.1 Main responsibility / working area

The question to the respondents is identical in both studies: *Your main responsibility/ working area?*

A major difference between the studies was that 35 % stated product development and 3% marketing & sales as their main responsibilities in the 2001 study, but almost exactly the opposite distribution was observed in the 2006 study. This reflects the difference in the chosen managers that do not work with sustainability issues as their main responsibility. In the 2001 study these managers are Line Mgrs – i.e. technical manager, product developer or other line manager – but in the 2006 study these managers are Acc Mgrs – i.e. group account managers with responsibility for a key customer (account).

The percentage of people who stated that their main responsibility is to function as an environmental/sustainability specialist were relatively equal in both studies, 28% for the 2001 study and 38 % for the 2006 study, respectively.

One conclusion from this first comparison is that approximately 1/3 of the people in both studies are *"environmental/sustainability professionals"* and 2/3 possesses a line/sales function responsibility. A conclusion from these similarities, i.e. distribution between sustainability contra line function responsibilities, is that it should be fairly possible to compare the results from the following six questions.

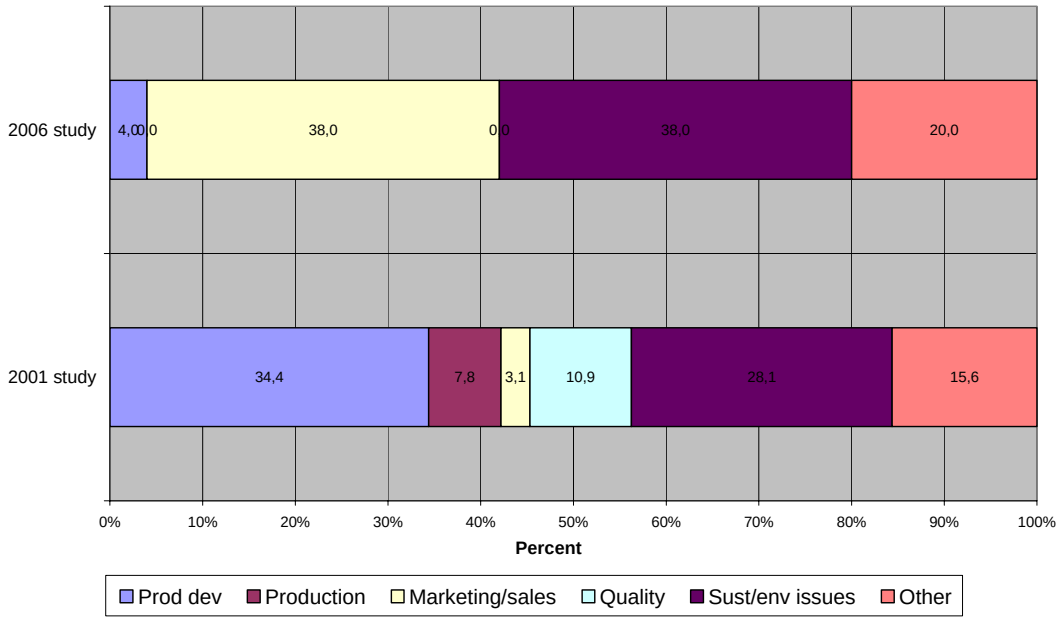

Figure 34. Main responsibility/working area.

9.2 Working time spent on environmental/sustainability issues

The questions to the respondents were:
2001 study: Work time spent on environmental issues during 1999?
2006 study: Your working time spent on sustainability issues during the last 12 month?

The Acc Mgrs in the 2006 study in general spends a much smaller part of their working time with environmental/sustainability issues compared to the Line Mgrs in the 2001 study. The working time distribution for the Sustain Mgrs and the Env Mgrs is relatively similar in both studies.

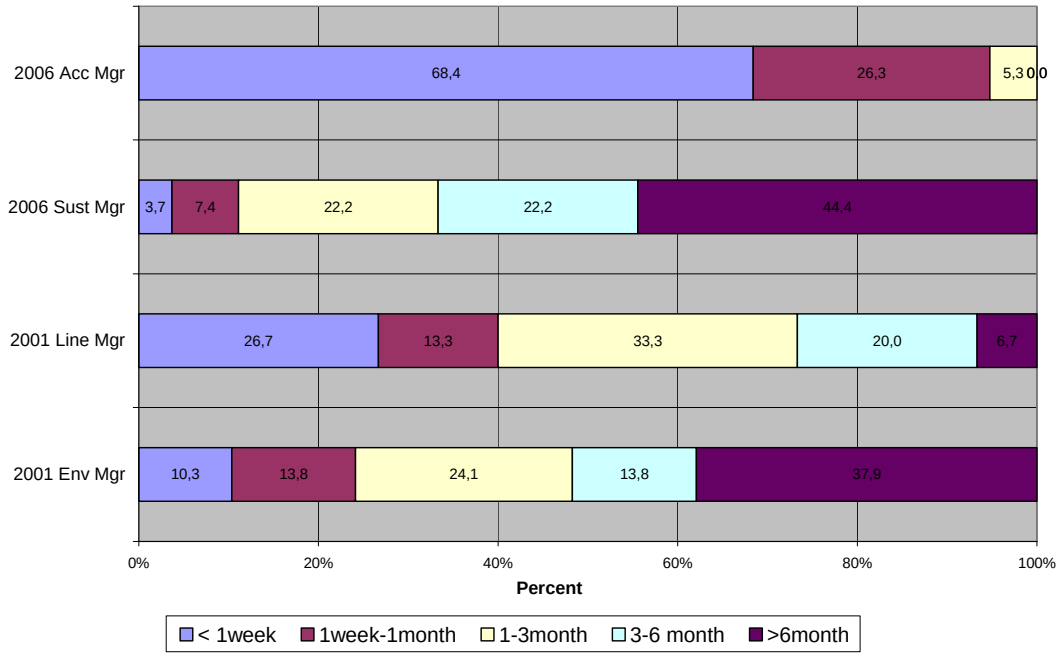

Figure 35. Work time spent on environmental/sustainability issues.

9.3 Driving forces for working with environmental/sustainability issues

The questions to the respondents were:
2001 study: Main driving force motivating work with environmental issues?
2006 study. Main driving force for working with sustainability issues?

When interpreting the results in this section it should be kept in mind that the questions are somewhat differently formulated, i.e. with respect to the words environmental and sustainability which reflects the general development in industry during the same time period from managing environmental issues to managing sustainability issues. Management programs were seen as being the most import driver in the 2001 study, but in the 2006 study external drivers, like legal/governmental requirements, awareness in the society and customers are also perceived to be of importance, see figure 35. It is interesting to note this trend is even more significant for the Acc Mgrs that do not at all perceive management programs as being a driver. One conclusion possible to draw from this figure 35 is that a slight shift have been identified for the driving forces, from internal to external driving forces, i.e. from management programs to legal and governmental requirements, general awareness in the society and the customers.

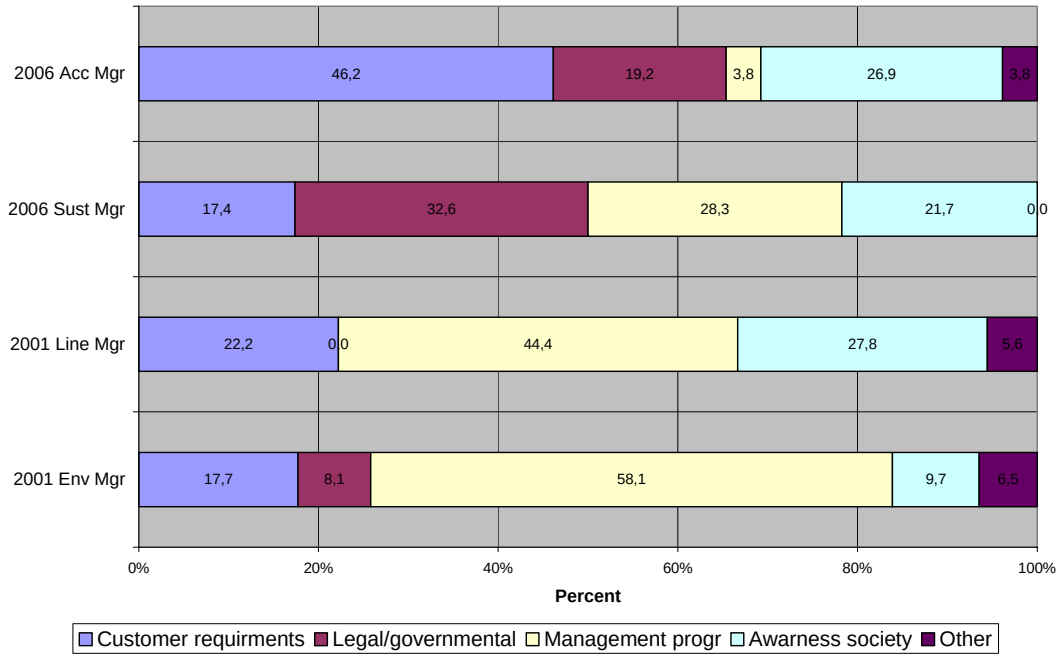

Figure 36. Driving forces for working with environmental/sustainability issues. The number of people in each study *is normalized to 100%.*

9.4 Main obstacles for working with environmental/sustainability issues

The questions to the respondents were:
2001 study: What is the main obstacle for integration of LCA in the normal activities?
2006 study. What is the main obstacle for integration of sustainability issues in the daily activities?

The questions are somewhat differently formulated with respect to the LCA in the 2001 study and sustainability issues in the 2006 study which may affect the outcome of the responses. Access to manpower in general seems to be a smaller problem today compared to the situation six years ago, see figure 6 in section 6.4. Another observation is that management commitment seems to be a bigger problem today for the environmental/sustainability managers than it was the situation six years ago.

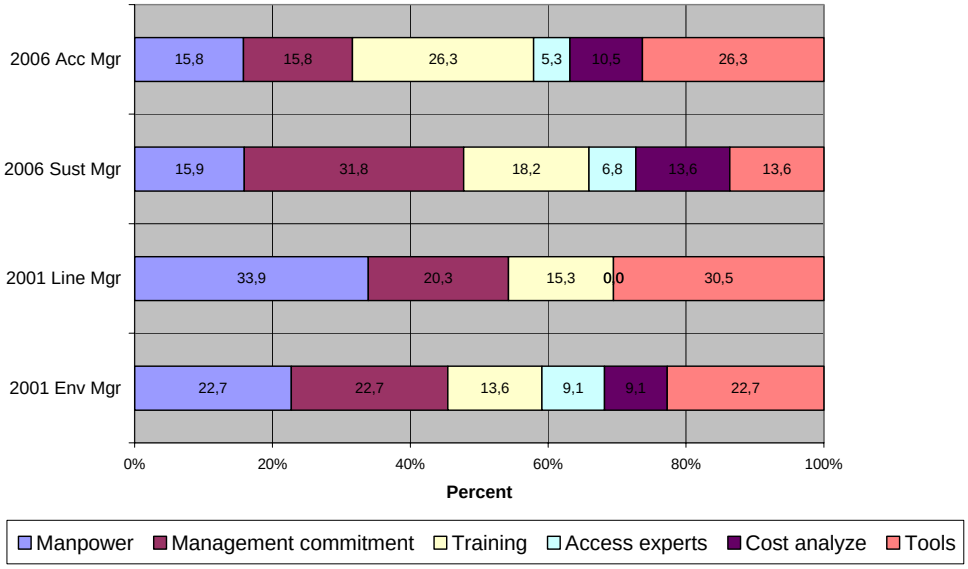

Figure 37. Main obstacles for working with environmental/sustainability issues. The number of people in each study is normalized to 100%.

9.5 Customer demands for LCA and environmental information

In this section the customer demand for LCA and environmental information is analyzed as well as the perceived competitive advantage acquired by working with LCAs. The three statements to consider were:

- *Customers demand environmentally related data*
- *LCA, Life Cycle Assessment has been used in marketing/sales and/or customer communication.*
- *LCA gives us a competitive advantage on the market*

The respondents were asked to declare to what degree they agreed to the normative statements that was given them.

The respondents can be summarized as follows:

- *Do customers demand environmentally related data?*
  An important finding is that the request for environmental data from customers is almost exactly in the same level in 2005 as it was in 1999.
- *Have LCA, Life Cycle Assessment been used in marketing/sales and/or customer communication?*
  Also for this question it seems to be a very stable situation. LCA was used in equal extent in marketing communication during 2005 compared to the situation in 1999.
- *Does LCA give us a competitive advantage on the market?*
  The perceived competitive advantage gained from working with LCA has decreased slightly between 1999 and 2005.

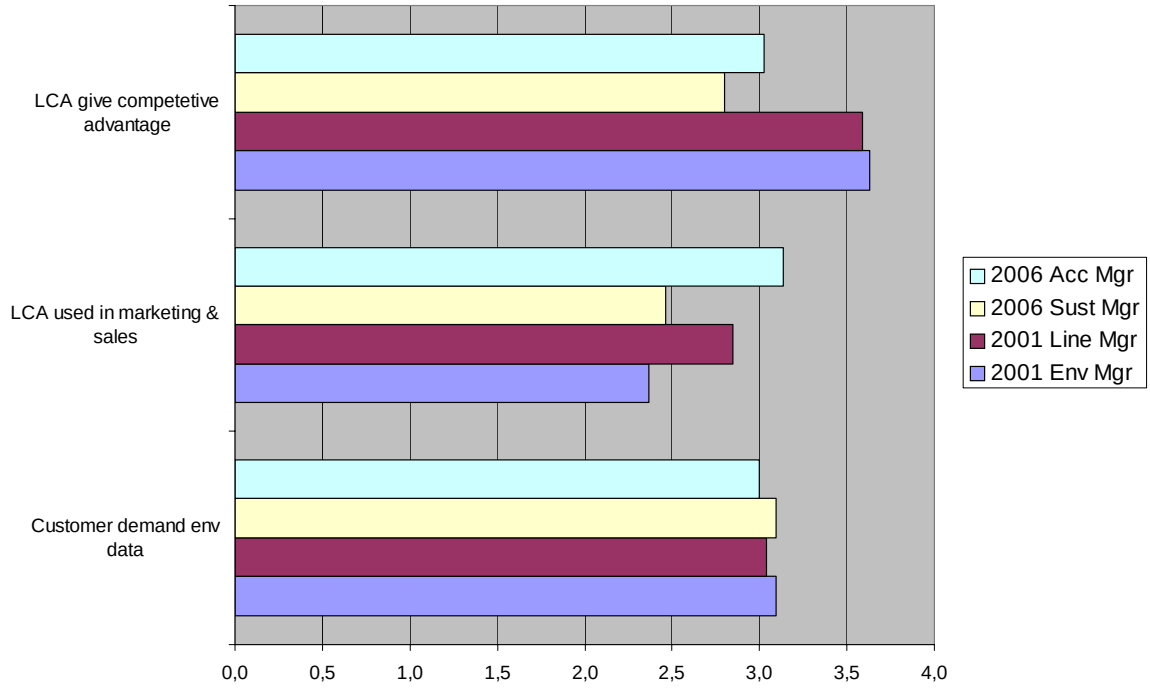

Fig 36. Customer demand for LCA and environmental information is analyzed as well as the perceived competitive advantage acquired by working with LCA. Percent of total number per study 1 corresponds to fully disagree and 5 correspond to agree.

9.6 Recapitulating the longitudinal study

An overall finding is that the respondents' answers are in general quite stable over the six year that has passed between the two studies.

The following summarizes the conclusions that can be drawn from the longditudinal study:

- The customer demand environmental information to the same extent 2005 as in 1999.
- The use of LCAs in marketing & sales also remains on a stale level.
- Less ABB respondents believe that LCAs provide a competitive advantage in business and customer relations today than six years ago.
- The main drivers have significantly shifted, from internal drivers – management programs – to external drivers – legal/governmental and customer requirements.
- Management commitment is perceived as a larger obstacle today for the environmental/sustainability specialists and managers than was the situation six years ago. Today almost one out of three sustainability managers see management commitment as the main obstacle for the work on these issues.

10 Synthesis and Conclusions

In the following synthesis sub-section the empirical findings of the study are related to and tested against the theoretical foundation discussed in section 5. The outcome and recommendations forward of the study are finally presented in the conclusion sub section.

10.1 Synthesis

The rich empirical findings, covering the input from more than 100 dedicated professionals having a wide range of different responsibilities and belonging to both industry and society sectors, of this study is a hard task to condense into a brief conclusion of the report. In order to do so we have structured the synthesis according to the pillars of the theoretical foundation developed in section 5.6. The three pillars of conglomerated theoretical paradigms are as follows: *Information Asymmetries*, *Power Interests* and *Cultural Belongings*. For each theoretical pillar are the observations from the respondent groups of the study placed to provide a tool for structuring the findings to provide bases for the conclusions of the report.

10.1.1 Information Asymmetries

The pillar of *Information Asymmetries* incorporates the notions of stakeholder theory, transaction cost theory and the communicative competence concept.

The core of stakeholder theory addresses the interdependencies between groups in terms of affect of being affected (cf. Lowe, 1971; cf. Freeman, 1984) – which is an extension of Friedman's (1970) shareholder view – but this interaction between actors involves transaction costs (Coase, 1937). However, in order to be able to influence the company to act in the interest of the stakeholder information about company actions are essential. The respondents of the study indicate that, in general, it is very difficult and resource consuming for company stakeholders to retrieve a good picture from the outside-in regarding the internal management of environmental and social issues and the resulting outcome in environmental, social and economic performances. The customers (read procurement staff) are, thus, to a large extent asking for the easy to retrieve information such as the existence of environmental management systems and not for time-consuming information to retrieve such as environmental improvement or environmental performance. The staff responsible for these transactions has deficient communicative competence on environmental and social aspects which is reflected in line mangers responses that their main obstacle for working with sustainability issues is related to insufficient training.

Contrary to the predominant school in economics (neo-classical) – that neglects the presence of costs for transactions – the school of institutional economics stresses the imperatives consequences from transactions costs that make some markets to more or less *implode* into inefficiencies such as markets for used cars (cf Akerlof, 1970). In fact, according to Eliasson (1996) transactions costs constitute the largest cost of all in industry. The results from the respondents also indicate the magnitude of transactions cost when retrieving relevant *"internal"* company and product information on from the outside and in. Due to this blindness of external stakeholder trying to look

inside, the existence of implemented and/or certified EMSs becomes important for ABB Acc. Mgr to show when the procurement staff asks for environmental related issues, but according to them EMS is not a significant. Then the procurement staff is able to checkmark their environmental obligations as satisfied through small work efforts. This phenomenon is reflected in the respondent groups' answers. ABB Sustain Mgrs and ABB Account Mgrs do see environmental management tools as equally important from a business perspective even though ABB Account Mgrs do not regard them as an important driving force for working with sustainability issues. This phenomenon relates to legitimacy actions by agents (in Power Interests) and institutional theory (in Cultural Belongings).

All respondent groups, moreover, state that the two most important sources for companies' sustainability information are based on voluntary reports and personal contacts. Only the Finance SRI Adv stakeholder group sees external third party publications as equally important as the other two sources, but according to the respondent of this finance group it is a real struggle to find such data. One respondent from academia, Academia Env Mgt, sees the future trend as there *"will be more focus on performance and less on certificates and self-reporting."* A comment from Academia Acc/Inv explains that *"What is voluntary today will become mandatory tomorrow. Today's frontrunners will thus shape tomorrow's rules, laws and regulations."* These responses are confirmed by the findings in a resent report from Swedish EPA (Flening, 2005) where it is stated that environmental reports focus too heavily on the existence of management systems but lacks performance information on how the company affects the environment and, importantly, lacks information on how the environment may affect company growth.

The communicative competence which involves knowing when to use grammatically correct utterances appropriately, coined by Hymes (1966), can be characterised as a four component competence; grammar, sociolinguistic, discourse and strategic (Canale and Swain, 1980) or be described as consisting of two parts; organisational and pragmatic competencies (Bachman, 1990). A result from the responses to the questionnaires is that ABB Sustain Mgr possess communicative competence and succeed to permeate the work that is taking place within ABB on social and environmental issues to its external stakeholders. Even the pickiest respondent group about finding third party data of real performance and strategic management is content with most aspects of ABB's sustainability work, more so with the handling of environmental aspects than with social.

10.1.2 Power Interests

The pillar of *Power Interests* incorporates the notions of agent theory, legitimacy theory and the property rights.

According to theory, agents (company management) act in their own interests which their principals (company owners) attempt to curb (cf. Gray, 1995). This raises under the presence of transactions costs and asymmetric information delicate control problems where the principals strive to enforce the agent to act according to the desires of the principal (Jensen and Meckling 1976). The bigger the asymmetric information gap is, advantaging the agent, the more complicate is the control problem (cf. Barney and Ouchi, 1986). The problem of ensuring that management perform as the investors crave for regarding social and environmental issues encompassed by corporate extended responsibilities is as found in this study is an undertaking of ample magnitude. Vast resources are vested into research by Finance Banks and Finance SRI Advs to monitor the behavior of management and performance of company which is one side of Jensen's agent cost (Jensen, 1983). The information channels for making such evaluations are under the influence or control of companies' management through voluntary reporting under lax reporting standards as well as the

personal communication with management. Larger Finance SRI Adv firms have firmly stated that company-own generated data is not enough. They need third party data e.g. retrieved from national EPAs.

Continuing with the views of the Finance SRI Adv group, the reporting according to GRI is incomplete, scattered and significantly varying between firms and incomparable since indicators are dealt with differently by the reporters. The usefulness of GRI reporting for the Finance SRI Advs, according to its respondents, is, therefore, small with no major cuts in the deficient information position of the investor. As put by one respondent: *"we can use some data from GRI and use it, but this data does often not cover entire industries, just a few companies. If I do not have cross industry data then it is not useful data. We use third party data from e.g. US EPA on toxic emissions and from EPA's in Japan and Europe. We buy data on carbon emissions third party."* Another comment from the respondent group that indicates low value of GRI reports for in-depth financial analysis is: *"I do not regards these GRI reports very well."* The same respondent group was, moreover, very reluctant to company management commitments such as to the UN Global Compact since these do not imply company behaviour to be acting accordingly. These commitments are seen by some analysts as indicative of merely nothing, *"Global Compact is not indicative of anything"*, if no performances are shown supporting the commitment, which often is the case. Then the information asymmetries between agent and principal prevail. This view of Finance SRI Adv shown in this paragraph is supported by the Academia Acc/Inv respondent group.

In order to trade a good there must be rights associated to it to define the ownership. Lacking rights to the good means no transactions of it since no one owns it and the resulting uncertainties are high. The Coase theorem (cf Coase, 1960; defined by Stigler, 1966) implies that well-defined property rights could overcome the problems of externalities e.g. resulting from the operations of a firm. These externalities are, hence, seen as market disorders with conflicting resource aims. Some corporate extended responsibility of environmental and social aspects can by allocating property rights to the distortions become a production factor for the firm which is tradable like the emission rights in the EU Emission Trading Scheme. With these tradable rights, of course, come interests and responsibilities.

An indication of the importance of responsibility for how much weight an environmental or social issue is given within an organisation is also provided by the responses to the questionnaires in the report. We see actually that the respondent groups seem most occupied with the sustainability issues that lie within their responsibility or close to – that is within the responsibility of their key stakeholders such as industrial customers' responsibility is of concern for a sales manager. The respondents thus deals most with the issues that has a consequence which is important to consider for a property rights discussion where responsibilities can be given to new areas for an actor in order to achieve highest transformation pressure. For instance, ABB Sust Mgr spend most on their time on health and safety issue which is also an area which is internally an important responsibility area that can become costly – economically and socially – if mismanaged. ABB Account Mgr, conversely, spend most of their time on environmental issues which is a concern of the primary stakeholders that are vital for ABBs sales. But likewise important for them in sales is how they carry out their operations ethically, which becomes prosecutable not only for them but also for their own superiors in the top of the organisation if mismanaged. Customers – acting in procurement situations – are, however, mostly interested in environmental aspects. From the customer perspective it makes sense to focus on environmental issues since, in most cases, the environmental performance of products will when operated become a responsibility of the customer – or their customer.

10.1.3 Cultural Belongings

The pillar of *Cultural Belongings* incorporates the notions of the wall of self-evidence, institutional theory and creative destruction theory.

As illustrated by Gustafsson (1994) the wall of self-evidence create rules and behavior that agents who are nurtured within them see as very absolute and unquestionable even though these sets of order may very well be loosely founded. These values are the seeds for habits that the group takes to protect its area of domain, knowingly or unknowingly. As Cerin and Laestadius (2003) illustrate the main concern of units within larger organisations is first and foremost not the larger entity's well being but the prosperity of the unit. Strannegård (2000) describes, moreover, very illustrative the importance of cultural belongings and educational background when employing new staff. In the paper, the success of an environmental unit within a corporation is described to be dependent on the cultural and educational similarities between the environmental manager and the CEO of the corporation, providing a foundation for the strong support. Cultural differences and similarities of importance are found in the study.

The cultures of professional groups within the financial industry are found to differ more than the cultures that reside within ABB and the customers of ABB. Professionals occupied with sustainability issues in the financial industry have oftentimes an educational background that is unalike the background of the financial analysts and fund managers. In industry have, on the contrary, people that are working with environmental and social issues, almost without exception, an engineering or technical university diploma similar to the line organisation staff, whose work they are trying to influence. The inherent walls of self-evidence that are built up within the financial industry between fund managers/financial analysts and the socially responsible investment professionals may restrict the communication between those actors and also prevent the more holistic view on corporations and their responsibilities to be incorporated into mainstream financial actors' decision-making.

There exist, hence, strong cultural barriers between Finance Port Mgr/Analyst – those making the investment decision – or the final advice – and the respondent groups Finance Banks and Finance Sustain Adv. The two latter groups are focused on environmental and social issues where Finance Sustain Adv are being more critical to various policies, commitment and tools for dealing with sustainability aspects. Instead the SRI advisors are looking for performance measures that are supported e.g. by third party. If linking to legitimacy theory (in Power Interests), Finance SRI Adv communicate to customers (Finance Banks) that are of similar cultural belongings and the commination can be more balanced while Finance Banks have to strive for legitimacy from a diverted group culturally diverse group - Finance Port Mgr/Analyst.

Cultural barriers do, however, also exist within ABB. One such indication is the view on the work with sustainability issues that takes place internally. ABB Sustain Mgrs see management programs as important driving forces for the internal work with sustainability issues but ABB Account Mgr do, on the contrary, not see them as permeating change. The ABB Account Mgrs are more content with how sustainability issues are dealt with in daily activities and every fifth person does not see any obstacles while ABB Sustain Mgrs sees management support as the largest obstacle. This view on lacking management support for working with company extended responsibility has increased since 1999 according to the longitudinal comparison. There is also a difference in the beliefs in competitive advantage of working with sustainability issues. E.g. one ABB Sustain Mgr expresses *"Salesmen and Business managers, they have not realized the benefit of sustainability. They are the ones who need training and motivation."* While an ABB Account Mgr expresses a different reality: *"I have never*

experienced a case, where sustainability has given us any advantage. 'It's nice, of course it is expected from ABB to have this and stick to the rules but let us come to the hard facts.' That is the world in which we live in today."

Institutional theory provides a foundation for understanding for comprehending how organisations take on similar practices under comparable pressure (cf. DiMaggio and Powell, 1983). When there is pressure on the organisation that is inconsistent with the actions of the organisation the organisation may chose to decouple the information to the stakeholder from real actions as a mean for managing inconsistent norms. This approach involves a struggle between company strategy and society values and in the end the legitimacy and efficiency of the organisation (Meyer and Rowan, 1977; Meyer and Scott, 1983). So to address this seemingly uniform pressure companies tend to copy successive stakeholder communication activities of other companies (e.g. awarded environmental reporting see Cerin, 2002). These communication activities that are based on isomorphic copying are then detached from how company internal activities are carried out which, thereby, can continue as usual automorphistic (cf. Schwartz, 1997).

The agents performing the communication of company extended responsibilities do not always know why and to whom they are communicating (Ljungdahl, 1999; Björklund 2006). The GRI guidelines are wholly or often partially adopted by some 7,000 corporation's world wide and there is a general feeling that this is good among industry actors. Especially people from the ABB Sust Mgr and Finance Banks respondent groups are convinced that this kind of reporting is a good foundation for evaluating company performance. ABB Account Mgr do not share this belief but they share the belief with the other two respondent groups as well as with Academia Env Mgt that GRI reporters are companies that have better environmental and social performances. The two respondent groups working with analysing corporate performance of social and environmental aspects, Finance SRI Adv and Academia Acc/Inv, are however reluctant to the idea that GRI reporters should be better performing than other companies on sustainability issues. These two groups are also negative towards GRI as a foundation for evaluating firms.

The issue of main obstacles for the members of different response groups reflects that there are clear organisational barriers between ABB Sustain Mgrs and ABB Account Mgrs even though they share rather similar views on most questions and normative statements that they have responded to in this study. The organisational obstacles are, hence, an obstacle for ABB Sustain Mgrs to overcome in order to receive necessary support and one method to retain this support is through actions that create internal legitimacy – e.g. high rankings in a sustainability index. This necessity links back to the Power Interest section on legitimacy and agents.

The prerequisite for a vivid dynamic economy that is dynamic enough to foster change is the existence of creative destruction (cf. Schumpeter, 1911). Inefficient, e.g. environmentally, firms who cannot change shall be pushed out from the market releasing resources, e.g. labor, for new entrants and existing agents on the market that will create more value, and in this context of Cerin (2005c) causing less environmental damage and resource use.

As detected in this report initiatives such as management programs do serve as important signaling between actors in business or to some financial and academic respondents (predominantly within Finance Banks and Academia Env Mgt) on the agents work with environmental and social issues. However, as also detected these tools for managing social and environmental aspects do not constitute a driving force for change according to ABB Acc Mgrs. This was supported by Finance SRI Adv and the two Academic respondent groups. These managerial tools do not constitute a strong force for change within the corporation. The tools do, moreover, not create enough support for those trying to establish pressure for transformation within industry, since the indication of tools creates a selection more related to company size and not to innovations and performance.

Respondents from the two academic groups have commented this lack of pressure for change has stated, such as one Academia Acc/Inv respondent, that *"Public policies would be the most important change in the way industry work with sustainability issues."* Another respondent from the Academia Env Mgt group similarly states *"Regarding to regulations there will probably be more regulations connected to sustainability issues due to more environmental and social effects in the society…Also corporate social responsibility issues will be more emphasized both by industry and the legislators and will be connected t the poor regions in the world."* These words indicate the importance of the global perspective and an additional comment addresses the *"Higher demand to know your products and process. Consumption will increase. Some raw materials will be scarcer and hence much more expensive. More knowledge will be required about the impact of your products in society (health and environmental)…"* This focus on the environmental and social performance of products is strongly supported by some of the comments by Finance SRI Adv group.

The, according to creative destruction theory (cf. Schumpeter, 1911), necessarily transformation of actors and phasing out (killing) those that cannot is thus currently not taking place and space (resources) for more preferred businesses is not created. There is also an inherent risk that some of the sustainability funds – those that are heavily relying on companies' own generated images instead of retaining third party information – may preserve firms in industry that from a social and environmental perspective ought to be changed in the way they carry out their business or to be excluded from the investment universe.

10.2 Conclusions

The tools for managing sustainability issues in industry is generally perceived as contributing to better environmental and social performances but not improving the business performance. The group Academia Acc/Inv is, however, less convinced that there should exist a positive correlation to a better environmental and social performance. Actors within industry, included within this study, regard the information from companies, on the one hand, to its customers and the financial actors, on the other hand, and being sufficient – covering what is requested and not superfluous to a great extent. The two academic groups do not share this view.

It is, moreover, very difficult and resource consuming (high transaction costs) for company stakeholders to retrieve a good picture from the outside-in regarding the internal management of environmental and social issues and the resulting outcome in environmental, social and economic performances.

ABB Country Sustainability Controllers feel management support, or the absence of it, as being the main obstacle for working with sustainability issues which is an experience which has increased compared to the results of the ABB study on LCA carried out 1999. ABB Group Account Managers do not see management commitment as an obstacle and 20 percent of them do not see any problems at all in the ongoing work with sustainability issues. ABB Country Sustainability Controllers increasingly perceive legislation as being drivers for working with environmental and social aspects compared to the view 1999. ABB Group Account Managers see e.g. see management tools for environmental and social issues as being important from a customer perspective, it is requested, but these managers do not perceive these tools as being drivers for change – which is in fact is the core task of the management programs. LCA data is requested to the same extent as it was in 1999, but both ABB Country Sustainability Controllers and ABB Group Account Managers feel that this information to a lesser degree than before constitutes a competitive advantage in sales.

This decreased importance could also reflect a more widespread adoption of LCA in industry, including competitors, as a bottom line tool than it was six years ago.

The most critical group in the study to many aspects of corporate handling of environmental and social issues is the Finance SRI Adv respondent group. The respondents of this group are, however, also the respondent group that demonstrates the strongest support to ABB as being a proactive company in the sustainability area. This confirmation recognizes ABB's handling of environmental issues but is also, and not negligible, a result of communication skills, reaching out with desired information to the financial stakeholders.

The findings of this study show that for ABB a product focus is vital to implement when addressing the environmental aspects of the organisation. Environmental performances of ABB's products and services are what the customers request since it affects their own operations. This product focus is also the focus for the financial analysts and they see a need for linking the dependence on environmental aspects to the generation of ABB's revenues, which for active products of ABB go via its services and the economic solutions offered customers. Indications are provided from the larger firm of the respondent group Finance SRI Adv that they do not care much for initiatives like carbon neutral companies and plants (unless driven by marginal cost cuts), which currently is well perceived among industrial actors – firms and perhaps especially consultants – and NGO's. The negative stand simply arises because these increased costs within the company will not come anywhere near to generate the business needed to cover them and the major environmental gains lies in product improvements. But, in the view of Finance SRI Adv, for social issues working conditions upstream in the value chain and coherent HR standards within the corporation globally are vital in the evaluation.

The Academia Accounting-&-Investment respondents anticipate a trend regarding sustainability issues moving from voluntarism to mandatory regulations. Some academics, moreover, are concerned with the new global order where the vast late coming economies will alter the global resource conditions significantly for the services that industry is providing. Considering these trends indicated by academia and finance it is, thus, important for company internal strategies, management systems and product assessments to create the knowledge for knowing how the sensitivity of environmental and social issues may affect future company revenues in a dynamic global environment.

11 References

Akerlof G. 1970. The Market for Lemons: Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics.* volume 84. pp. 488-500.

Alvesson M, Willmott H. 1996. *Making Sense of Management: A Critical Introduction.* Sage Publications, London, UK.

Arrow K. 1963. Uncertainty and the Welfare Economics of Medical Care. *American Economic Review.* volume 53, pp. 941-973.

Article 13. (2006) *Definitions.* http://www.article13.com/ [February, 2006]

Axelsson U, Almgren R, Hjelm O. 2003. *Effektivare miljöledningssystem – en studie om brister, behov och möjligheter till förbättringar.* Swedish Environmental Protection Agency – Naturvårdsverket, Rapport 5304, September 2003, Stockholm, Sweden.

Bachman L. 1990. Fundamental considerations in language testing. Oxford University Press, Oxford, UK.

Baden A. 2001. Shareholder Value- oder Stakeholder-Ansatz? *Wirtschaftswissenschaftliches Studium.* Jahrgang 30, Heft 8, S. 398-403.

Barney J, Ouchi W. 1986. *Organizational Economics – Towards a New Paradigm for Understanding and Studying Organizations.* Jossey-Bass, San Francisco, USA.

Björklund H. 2006. *Branschspecifik miljöredovisning: En studie av miljöredovisning och miljökommunnikation i den svenska bank- och försäkringsbranschen.* Magisteruppsats. Stockholms Universitet, Stockholm, Sweden.

Burrell G, Morgan G. 1979. Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life. Heineman Educational Books, London, UK.

Börkey P, Glachant M, Lévêque F. 1999. Voluntary approaches for environmental policy: An assessment. OECD, Paris, Fance.

Canale M, Swain M. 1980. Theoretical bases of communicative approaches to second language teaching and testing. Applied Linguistics. volume 1, pp. 1-47.

Cerin P. 2003. Sustainability Hijacked by the Sociological Wall of Self-Evidence. *Corporate Social Responsibility and Environmental Management.* Volume 10, Issue 4, pp. 175-185.

Cerin P. 2005a. Bringing Economic Opportunity into Line with Environmental Influence: A Discussion on the Coase Theorem and the Porter and van der Linde Hypothesis. Submitted to *Ecological Economics.*

Cerin P. 2005b. Introducing Value Chain Stewardship (VCS). *Accepted for Publication in International Environmental Agreements: Politics, Law and Economics*, Forthcoming.

Cerin P. 2005c. *Environmental Strategies in Industry – Turning Business Incentives into Sustainability.* Swedish Environmental Protection Agency, Report 5455, February 2005, Stockholm, Sweden.

Cerin P, Karlson L. 2002. Business incentives for sustainability: a property rights approach. *Ecological Economics.* Volume 40, Issue 1, pp. 13-22.

Cerin P, Laestadius S. 2003. The Efficiency of Becoming Eco-Efficient. *Management of Environmental Quality: An International Journal.* volume 14, Issue 3 pp. 221-241.

Clarkson M. 1995. A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance. *Academy of Management Review.* volume 20 no. 1, p. 92-117.

Coase R. 1937. The Nature of the Firm. *Economica.* 4 Nov., pp 386-405.

Coase R. 1960. The Problem of Social Cost. *The Journal of Law and Economics.* No. 3, pp. 1-44.

Coase R. 1974. The Lighthouse in Economics. *The Journal of Law and Economics.* volume 17, issue 2, pp. 357–76.

Coase, R., 1988. *The Firm, the Market and the Law.* The University of Chicago Press, Chicago, Il.

Coase R. 1991. 1991 Nobel Lecture: The Institutional Structure of Production. Williamson O, Winter S. (Ed.) 1993. *The Nature of the Firm: Origins, Evolution, and Development.* Oxford University Press, New York, USA. pp. 227-235

Croci E, Pesaro G. 1998. *Voluntary environmental agreements: good or bad news for environmental protection?* Paper for the CAVA workshop in Ghent on 26-27 November, 1998 (CAVA working paper no. 98/11/5). IEFE, Universitá Bocconi, Milan, Italy.

Czarniawska B. 2002. Remembering while forgetting: The role of automorphism in reframing city management in Warsaw. *Public Administration Review.* volume 62, issue 2, pp. 163-173.

Dahrendorf R. 1959. *Class and Class Conflict in Industrial Society.* Routledge and Kegan Paul, London. UK.

DiMaggio, P. and Powell, W. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality. Powell W. DiMaggio P. (1991 eds.) *The New Institutionalism in Organizational Analysis.* University of Chicago Press, Chicago, Il.

Dobers P. 1996. Legislation-induced bubble markets. Driving forces of air pollution control technology in the field of waste incineration. *Scandinavian Journal of Management.* volume 12, no. 3, pp. 255-273.

Dobers P. Strannegård L, Wolff R. 2001. Knowledge Interests in corporate environmental management. *Business Strategy and the Environment.* Volume 10, issue 6, pp. 335-343.

Domeij B. 2001. Coase, externa effekter och omsättningens intresse. *Festskrift till Ulf Bernitz, Juridisk Tidskrift.* pp. 5-20, Stockholm, Sweden.

Donaldson T, Preston L. 1995. The Stakeholder Theory of the Corporation – Concepts, Evidence, and Implications. *Academy of Management Review.* volume 20 no. 1, p. 65-91.

ECC. 2003. *Global Stakeholder Report 2003. Geteilte Werte? Die erste weltweite Stakeholder-Befragung zum Non-financial Reporting.* Juli 2005, ECC Kothes Klewes, Bonn, Germany. www.pleon-kohtes-klewes.de [May, 2006]

EIRIS. 2005. *Do good environmental management systems lead to good environmental performance?* News release, EIRIS-Ethical Investment Research Services. London, 20th October 2005.

Ekelund R, Hébert R. 1997. *A History of Economic Theory and Method.* Fourth edition. MacGraw-Hill, NY.

Eliasson, G. 1990. The Firm as a Competent Team. *Journal of Economic Behavior and Organization.* volume 13, pp. 275-298.

Eliasson G. 1996. *Firm Objectives, Controls and Organization: The Use of Information and the Transfer of Knowledge within the Firm.* Kluwer Academic Publishers, Dordrecht, The Netherlands.

Figge F. 2002. Stakeholder Value Matrix. Die Verbindung zwischen Shareholder Value und Stakeholder Value. CSM, Universität Lüneburg, Germany.

Figge F. 2004. Stakeholder und Shareholder Value. in: Ruh H, Leisinger K. (Eds.) Ethik im Management. Ethik und Erfolg verbünden sich. Orell Füssli Verlag AG Zürich, Switzerland, pp. 255-267.

Flening B. 2005. Finansmarknaden, miljön och redovisningen. Swedish Environmental Protection Agency. Report 5521, December 2005, Stockholm Sweden.

Friedman M. 1970. The social responsibility of business is to increase its profits. The New York Times Magazine, New York, NY, September 13.

Freeman R. 1984. Strategic Management: A Stakeholder Approach. Pittman, Boston, Ma.

Fullerton D. 1995. Why have separate environmental taxes? Working Paper 5380. NBER Working Paper Series. National Bureau of Economic Research, Cambridge, MA.

Gibbons M, Limoges C, Nowotny H, Schwartzman S, Scott P, Trow M. 1994. The new production of knowledge: the dynamics of science and research in contemporary societies. Sage Publications, London, UK.

Gray R, Kouhy R, Lavers S. 1995. Corporate Social and Environmental Reporting – A Review of the Literature and a Longitudinal Study of UK Disclosure. Accounting, Auditing and Accountability journal. volume 8 no. 2, p. 47-77.

Gray R, Owen D, Adams C. 1996. Accounting and Accountability – Changes and Challenges in Corporate Social and Environmental Reporting. Hemel Hempstead: Prentice Hall, London, UK.

GRI. 2005. Global Reporting Initiative. http://www.globalreporting.com/ [December, 2005]

Gustafsson C. 1994. Produktion av allvar: Om det ekonomiska förnuftets metafysik. [Own translation from Swedish: Production of Seriousness: Regarding the Metaphysics of Economic Sense]. Studier i företagsekonomi 3, Nerenius & Santérus förlag, Stockholm, Sweden.

Habermas J. 1976. *Legitimation Crisis.* Heinemann, London, UK.

Habermas J. 1996. Kommunikativt handlande. Texter om språk, rationalitet och samhälle. Andra upplagan. Daidalos, Sweden.

Hart O. 1993. Incomplete Contracts and the Theory of the Firm. In: Williamson, O., Winter, S., (Eds). The Nature of the Firm: Origins, Evolution, and Development. Oxford University Press, New York, NY, pp. 138-158.

Hobbes T. 1651. Leviathan, or The Matter, Forme, and Power of a Commonwealth Ecclesiasticall and Civill. in. Tuck R. (ed.) English Works. volume 3. repr with additions from the Latin edition of 1678 (Cambridge, 1996). ch. 17. Or go to ch. XVII http://www.orst.edu/instruct/phl302/texts/hobbes/leviathan-contents.html [March, 2002].

Holmberg J, Sandbrook R. 1992. Sustainable Development: What is to be Done? In Holmberg J (ed.) 1992. Policies for a Small Planet. Earthscan, London, Uk, pp. 19-38.

Hymes D. 1971. On communicative competence. In Brumfit C, Johnson K. (Eds.) 1979. The communicative approach to language teaching, pp. 5-26. Oxford University Press, Oxford, UK.

Innovest. 2005. Innovest Launches Global Compact Assessment Tool. Press Release. Innovest Strategic Value Advisors. September 23, 2005. New York, London and Barcelona.

Jensen M. 1983. Organisational Theory of the Methodology. The Accounting Review. volume 58 no. 2 , p. 319-339.

Jensen M, Meckling W. 1976. Theory of the Firm – Managerial Behavior, Agency Costs, and Ownership Structure. Journal of Financial Economics. Oct., pp. 305-360.

Karlson L. 2002. *Life Cycle Assessment (LCA) – a Sustainable Management Tool?* Licentiate Thesis, department of Industrial Economics and Management, Royal Institute of Technology (KTH), Stockholm, Sweden.

Laestadius S, Karlson L. 2000. Eco-efficient products and srvices through LCA in R&D/design. *Environmental Management and Health.* Vol. 12, No. 2, pp. 181-190

Latour B. 1999. *Pandora's Hope. Essays on the Reality of Science Studies.* Harvard University Press, Cambridge, MA.

Lenzen M, Murray J, Sack F, Weidmann T. 2006. Shared producer and consumer responsibility – theory and practice. *Ecological Economics. Accepted for publication.*

Ljungdahl F. 1999. Utvecklingen av miljöredovisningen i svenska börsbolag – praxis, begrepp, orsaker. Lund University Press, Lund, Sweden.

Lowe E. 1971. On the idea of a Management Control System: Integrating Accounting and Management Control. Journal of Management Studies. volume 8, issue, pp. 1-12.

Marx K. 1867/1981. Das Kapital; Kritik der politichen Ökonomie. Volumen I, Der Produktionsprocess des Kapitals. Hamburg, Germany. (1981. Swedish translation. Kapitalet - Första boken. Arkiv-Zenit, Lund, Sweden.)

Meyer M, Rowan B. 1977. Institutionalized organizations: formal structure as myth and ceremony. American Journal of Sociology. volume 83, pp. 340-363.

Meyer J, Scott W. 1992. Organizational Environments. Ritual and Rationality. Updated ed, Sage Publications Inc, Newbury Park, CA.

Mezias S. 1990. An institutional model of organizational practice: Financial reporting at the fortune 200. Administrative Science Quarterly. volume 35, issue 3, pp. 431-457.

North D. 1994. Economic Performance Through Time. American Economic Review. volume 84, issue 3, pp. 359-368.

OECD 1999: June. OECD Economic Outlook. Organisation for Economic Co-operation and Development, OECD Publications, France, Paris, No. 65, June.

OMB. 1995. Management Accountability and Control. Circular No. A-123. Revised June 21, 1995. The Executive Office of the President, U.S. Office of Management and Budget, Washington, D.C.
Available at The Federal Register on June 29, 1995, volume 60, number 125, pp. 33876-33872. Or www.whitehouse.gov/omb/circulars/a123/a123.html [January, 2006].

Oliver C. 1991. Strategic responses to institutional processes. *Academy of Management Review.* volume 16, pp. 145-179.

Palmer K, Oates W, Portney P. 1995. Tightening Environmental Standards: The Benefit-Cost or the No-Cost Paradigm? *Journal of Economic Perspectives.* volume 9, no. 4 Fall 1995, pp. 119-132.

Pfeffer J, Salancik G. 1978. *The External Control of Organizations – A Resource Dependence Perspective.* Harper & Row, New York, NY.

Pigou A., 1912. Wealth and Welfare. MacMillan, London, UK.

Pigou A., 1920. *The Economics of Welfare.* Macmillan & Co., London, UK.

Pleon. 2005. *Unternehmen Verantwortung: der Global Stakeholder Report 2005. Die Zweite weltweite Stakeholder – Befragung zur Nachhaltigkeitsberichterstattung von Unternehmen.* Dezember 2005, Pleon Kothes Klewes, Bonn, Germany. www.pleon-kohtes-klewes.de [May, 2006]

Porter M, van der Linde C. 1995a. Green and Competitive. *Harvard Business Review.* September-October. pp. 120-134, USA.

Porter M, van der Linde C. 1995b. Toward a New Conception of the Environment: Competitiveness Relationship. *Journal of Economic Perspectives.* volume 9, no. 4, pp. 97-118.

Rikhardsson P, Welford R. 1997. Clouding the Crisis: the Construction of Corporate Environmental Management. Welford R. (Ed.) *Hijacking Environmentalism: Corporate Responses to Sustainable Development.* Earthscan Publications Ltd., London, UK, pp. 40-62.

Rotch W. 1993. Management Control Systems: One View of Components and Their Interdependence. *British Journal of Management.* Volume 4, issue 3, pp. 191-203.

Sandström J. 2002. Organizational Approaches to Greening: Technocentrism and Beyond. PhD Thesis. Dept. of Business Administration, Umeå School of Business and Economics, Umeå University, Umeå, Sweden.

Schaltegger S, Burritt R. 2000. *Contemporary Environmental Accounting: Issues, Concepts and Practice.* Greenleaf Publishing Limited, UK, Sheffield.

Schmidheiny S, Business Council for Sustainable Development – BCSD. 1992. *Changing Course: A Global Business Perspective on Development and the Environment.* The MIT Press, Cambridge, MA.

Schmidheiny S, Zorraquin F, World Business Council for Sustainable Development – WBCSD. 1996. *Financing Change: The Financial Community, Eco-Efficiency and Sustainable Development.* The MIT Press, Cambridge, MA.

Schumpeter J. 1911/1934. The Theory of Economic Development. *Harvard Economic Studies.* Volume XLVI, Harvard University Press, Cambridge, MA. (Originally published in German: 1911-12. *Das Wesen und der Hauptinhalt der theoretischen Nationalökonomie.* Duncker & Humblot, Munich and Leipzig, Germany.)

Schwartz B. 1997. Det miljöanpassade företaget: Strategiska uppträdanden på den institutionella scenen. Nerenius & Santérus förlag, Stockholm, Sweden.

Silverman D. (ed.) 1997. Qualitative Research: Theory, Method and Practice. SAGE Publications, London, UK.

Simon H. 1955. A Behavioral Model of Rational Choice. Quarterly Journal of Economics. volume 69, pp. 99-118.

Smith A. 1776/1937. An Inquiry into the Nature of and Causes of the Wealth of Nations. : Modern Library, New York, NY.
or
Smith A. 1776/1999. The Wealth of Nations: Books I-III. Edited with an introduction and notes by Andrew Skinner. Penguin Books, London, UK.
and

Smith A. 1776/1999. The Wealth of Nations: Books IV-V. Edited with an introduction and notes by Andrew Skinner. Penguin Books, London, UK.

Stigler G. 1951. The Division of Labor is Limited by the Extent of the Market. Journal of Political Economy. LIX 3, pp. 185-193.

Stigler G. 1966. The Theory of Price. Third edition. The University of Chicago. The Macmillan Co., New York, USA.

Stiglitz J. 2003. The Roaring Nineties: Why we're paying the price for the greediest decade in history. Penguin Books, London, UK.

Suchman M. 1995. Managing Legitimacy – Strategic and Institutional Approaches. *Academy of Management Review.* volume 20, no. 3, pp. 571-610.

SustainAbility and Mistra. 2004. Values for Money: Reviewing the Quality of SRI Research. Sustainability and Mistra – The Foundation for Strategic Environmental Research. [January 19th, 2006] www.mistra.org

WCED – World Commission on Environment and Development. 1987. *Our Common Future.* Oxford University Press, Oxford, UK.

Welford R. 1997b. Towards a More Critical Dimension for Environmental Research. Welford R. (Ed.) *Hijacking Environmentalism: Corporate Responses to Sustainable Development.* Earthscan Publications Ltd., London, UK, pp. 228-243.

Welford R. 1998. Editorial: Corporate environmental management, technology and sustainable development: postmodern perspectives and the need for a critical research agenda. *Business Strategy and the Environment.* volume 7, issue 1, pp. 1-12.

Zucker L. 1987. Institutional Theories of Organization. *Annual Review of Sociology.* volume 13, pp. 443-464.

Appendix – Questionnaires

Four questionnaires were used when collecting opinions from the stakeholders. The questions can be found in this enclosure.

In order to render it relevant for the five different categories of respondents the questions could not be put to them in an identical wording. Some questions were adjusted to fit the realities and experiences of the five main respondent groups. The most common alteration to the statements in the questionnaire was given to the Customer main respondent group. For Customers the word *'Companies'* was often replaced by the word *'Suppliers'* as a way of indicating their role, and referring to their experiences, in their procurement activities. To make the evaluation transparent all questions are however displayed in this section.

ABB
The following questions were sent to both ABB Sust Mgrs and ABB Account Mgrs.

General issues (Relate the questions to your own position) Please, select one alternative for each question.

1) Your main responsibility/working area.
   a) Marketing/sales
   b) Procurement
   c) Sustainability issues
   d) Technology/product development
   e) Other, please specify:

2) Your working time spent on sustainability issues during the last 12 months.
   a) < 1 week
   b) 1 week - 1 month
   c) 1 month - 3 months
   d) 3 months - 6 months
   e) > 6 months

3) Your planned amount of work time to be spent on sustainability issues during the next 12 months (compared to the last 12 months).
   a) Much less
   b) Less
   c) Equal
   d) More
   e) Much more

4) On what sustainability issues did you spend most of your time during the last 12 months?
   a) Environmental
   b) Social
   c) Ethical
   d) Health and safety
   e) Other, please specify:

5) Your educational background.
   a) Technical/engineering
   b) Natural sciences
   c) Social sciences
   d) Other, please specify:

6) Your participation in sustainability education, training or experience exchange seminars during the last three years.
   a) < one day
   b) 1-3 days
   c) 4-10 days
   d) >10 days

Give your opinion about the following questions. Relate the questions to your own organisation (company, division, business unit/country etc. depending on the scope of your own responsibility). Please, select one alternative for each question.
For questions 7-11: If relevant, you may select two alternatives for each question.

7) Main driving force for working with sustainability issues.
   a) Customer requirements
   b) Legal and governmental requirements
   c) Internal management programs
   d) Increasing sustainability awareness in the whole society
   e) Other, please specify:

Additional comments:

8) What is the main obstacle for integration of sustainability issues in the daily activities?
   a) Available manpower
   b) Management commitment
   c) Insufficient education and training in sustainability issues
   d) Evaluation tools and methodologies
   e) Management tools and methodologies
   f) Costs for conducting sustainability analyses
   g) Lack of access to sustainability expert
   h) No obstacles are identified
   i) Other, please specify:

Additional comments:

9) What type of information is the most critical one to communicate to the customers?
   a) Corporate policies and expressed corporate commitment,
   b) Existence of sustainability management systems and tools
   c) Sustainability communication and reporting
   d) Company performance
   e) Product performance
   f) Other, please specify:

Additional comments:

10) Which sustainability tool/method is the most important o have implemented from a business and customer perspective?
   a) Environmental management system (e.g. ISO 14001, EMAS)
   b) Environmental analyses on products (e.g. LCA, Life Cycle Assessment)
   c) Environmentally declared products (e.g. EPD, Environmental Product Declaration)
   d) Occupational health and safety management system (e.g. OH SAS 18001, SA 8000)
   e) Expressed commitment to the principles of the UN Global Compact
   f) Reporting according to the Global Reporting Initiative (GRI) Guidelines
   g) Other, please specify

Additional comments:

11) Which of the following information channels is the most critical one in marketing and customer communication?
   a) Company legal reporting (e.g. fiscal reports)
   b) Company voluntary reporting (e.g. sustainability reports)
   c) Personal contacts

d) External publications
e) Other, please specify

Additional comments:

12) Do you provide customers with the requested sustainability information?
a) Always
b) Mostly
c) Seldom
d) Never

Additional comments:

13) Do you provide superfluous (not requested) sustainability information to customers?
a) Always
b) Mostly
c) Seldom
d) Never

Additional comments:

14) Does high sustainability rating (e.g. in Dow Jones Sustainability Index) lead to a competitive advantage?
a) Always
b) Mostly
c) Seldom
d) Never

Additional comments:

Give your opinion the following statements. Relate the questions to your own organisation (company, division, business unit/country etc. depending on the scope of your own responsibility). *Use a scale between 1 and 5 and, please, mark the selected position on the line. Check 1 for full disagreement with the statement. Check 5 for full agreement with the statement.*

15) Current sustainability evaluation tools and methods are too resource and time consuming.

1----------2----------3----------4----------5
Full disagreement Full agreement

16) It is vital to improve the efficiency of the sustainability evaluation tools and methods.

1----------2----------3----------4----------5

17) Companies with high rated sustainability performance (e.g. in Dow Jones Sustainability Index) have a competitive advantage in their businesses.

1----------2----------3----------4----------5

18) Companies being committed to sustainability expressed in e.g. policies and reports perform better financially.

1----------2----------3----------4----------5

19) Companies being committed to sustainability expressed in e.g. policies and reports perform better environmentally.

1----------2----------3----------4----------5

20) Companies being committed to sustainability expressed in e.g. policies and reports perform better socially.

1----------2----------3----------4----------5

21) Companies with an implemented environmental management system (e.g. ISO 14001, EMAS) perform better environmentally.

1----------2----------3----------4----------5

22) Companies conducting environmental analyses on their products (e.g. LCA, Life Cycle Assessment) perform better environmentally.

1----------2----------3----------4----------5

23) Companies with environmentally declared products (e.g. EPD, Environmental Product Declaration) perform better environmentally.

1----------2----------3----------4----------5

24) Companies with an implemented occupational health and safety management system (e.g. OH SAS 18001, SA 8000) perform better socially.

1----------2----------3----------4----------5

25) Companies with an expressed commitment to the principles of the UN Global Compact are more responsible corporate citizens that perform better socially and environmentally.

1----------2----------3----------4----------5

26) Companies that report according to the Global Reporting Initiative (GRI) Guidelines perform better socially and environmentally.

1----------2----------3----------4----------5

27) The indicators comprising the Global Reporting Initiative (GRI) Guidelines constitute a good foundation for evaluating the sustainability of a company.

1----------2----------3----------4----------5

28) The process how to work with sustainability issues will undergo major changes during the next 2-3 years.

1----------2----------3----------4----------5

29) The process how to work with sustainability issues will undergo major changes during the next 5-6 years.

1----------2----------3----------4----------5

30) ABB is a pro active company in the sustainability area.

1----------2----------3----------4----------5

31) Sustainability management is crucial for ABBs business.

1----------2----------3----------4----------5

32) Customers demand environmentally related data

1----------2----------3----------4----------5

33) LCA, Life Cycle Assessment has been used in marketing/sales and/or customer communication.

1----------2----------3----------4----------5

34) LCA gives us a competitive advantage on the market.

1----------2----------3----------4----------5

Customer
The following questions were sent to ABB Customers and CPM companies

General issues (Relate the questions to your own position) Please, select one alternative for each question.

1) Your main responsibility/working area.
   a) Procurement
   b) Sustainability issues
   c) Technology/product development
   d) Other, please specify:

2) Your working time spent on sustainability issues during the last 12 months.
   a) < 1 week
   b) 1 week - 1 month
   c) 1 month - 3 months
   d) 3 months - 6 months
   e) > 6 months

3) Your planned amount of work time to be spent on sustainability issues during the next 12 months (compared to the last 12 months).
   a) Much less
   b) Less
   c) Equal
   d) More
   e) Much more

4) On what sustainability issues did you spend most of your time during the last 12 months?
   a) Environmental
   b) Social
   c) Ethical
   d) Health and safety
   e) Other, please specify:

5) Your educational background.
   a) Technical/engineering
   b) Natural sciences
   c) Social sciences
   d) other, please specify:

6) Your participation in sustainability education, training or experience exchange seminars during the last three years.
   a) < one day
   b) 1-3 days
   c) 4-10 days
   d) >10 days

Give your opinion about following questions. Relate the questions to your own organisation (company, division, business unit/country etc. depending on the scope of your own responsibility). Please, select one alternative for each question.

For questions 7-11: If relevant, you may select two alternatives for each question.

7) Main driving force for working with sustainability issues.
   a) Customer requirements
   b) Legal and governmental requirements
   c) Internal management programs
   d) Increasing sustainability awareness in the whole society
   e) Other, please specify:

Additional comments:

8) What is the main obstacle for integration of sustainability issues in the daily activities?
   a) Available manpower
   b) Management commitment
   c) Insufficient education and training in sustainability issues
   d) Evaluation tools and methodologies
   e) Management tools and methodologies
   f) Costs for conducting analyses
   g) Lack of access to sustainability expert
   h) No obstacles are identified
   i) Other, please specify:

Additional comments:

9) When evaluating suppliers sustainability work, performance and risks/opportunities which of the following information is the most important?
   a) Corporate policies and expressed corporate commitment,
   b) Existence of sustainability management systems and tools
   c) Sustainability communication and reporting
   d) Company performance
   e) Product performance
   f) Other, please specify:

Additional comments:

10) When evaluating suppliers sustainability work, performance and risks/opportunities which of the following tools is the most important?
   a) Environmental management system (e.g. ISO 14001, EMAS)
   b) Environmental analyses on their products (e.g. LCA, Life Cycle Assessment)
   c) Environmentally declared products (e.g. EPD, Environmental Product Declaration)
   d) Occupational health and safety management system (e.g. OH SAS 18001, SA 8000)
   e) Expressed commitment to the principles of the UN Global Compact
   f) Reporting according to the Global Reporting Initiative (GRI) Guidelines
   g) Other, please specify:

Additional comments:

11) Which of the following information source is the most critical one in your supplier evaluation process?
   a) Company legal reporting (e.g. fiscal reports)
   b) Company voluntary reporting (e.g. sustainability reports)
   c) Personal contacts
   d) External sources (e.g. national statistics, media)
   e) Other, please specify

Additional comments:

12) Do the suppliers provide you with the requested information?
    a) Always
    b) Mostly
    c) Seldom
    d) Never

Additional comments:

13) Do the suppliers provide you with superfluous information?
    a) Always
    b) Mostly
    c) Seldom
    d) Never

Additional comments:

14) Does high sustainability rating (e.g. Dow Jones Sustainability Index) lead to other supply decisions that would be the case without such ranking information?
    a) Always
    b) Mostly
    c) Seldom
    d) Never

Additional comments:

Give your opinion the following statements. Relate the questions to your own organisation (company, division, business unit/country etc. depending on the scope of your own responsibility). *Use a scale between 1 and 5 and, please, mark the selected position on the line. Check 1 for full disagreement with the statement. Check 5 for full agreement with the statement.*

15) Current sustainability evaluation tools and methods are too resource and time consuming.

1----------2----------3----------4----------5
Full disagreement Full agreement

16) It is vital to improve the efficiency of the sustainability evaluation tools and methods.

1----------2----------3----------4----------5

17) Suppliers with high rated sustainability performance (e.g. Dow Jones Sustainability Index) are preferred suppliers.

1----------2----------3----------4----------5

18) Suppliers being committed to sustainability expressed in e.g. policies and reports perform better financially and are therefore preferred suppliers.

1----------2----------3----------4----------5

19) Suppliers being committed to sustainability expressed in e.g. policies and reports perform better environmentally and are therefore preferred suppliers.

1----------2----------3----------4----------5

20) Suppliers being committed to sustainability expressed in e.g. policies and reports perform better socially and are therefore preferred suppliers.

1----------2----------3----------4----------5

21) Suppliers with an implemented environmental management system (e.g. ISO 14001, EMAS) perform better environmentally and are therefore preferred suppliers.

1----------2----------3----------4----------5

22) Suppliers conducting environmental analyses on their products (e.g. LCA, Life Cycle Assessment) perform better environmentally and are therefore preferred suppliers.

1----------2----------3----------4----------5

23) Suppliers with environmentally declared products (e.g. EPD, Environmental Product Declaration) perform better environmentally and are therefore preferred suppliers.

1----------2----------3----------4----------5

24) Suppliers with an implemented occupational health and safety management system (e.g. OH SAS 18001, SA 8000) perform better socially and are therefore preferred suppliers.

1----------2----------3----------4----------5

25) Suppliers with an expressed commitment to the principles of the UN Global Compact are more responsible corporate citizens that perform better socially and environmentally and are therefore preferred suppliers.

1----------2----------3----------4----------5

26) Suppliers that report according to the Global Reporting Initiative (GRI) Guidelines perform better socially and environmentally and are therefore preferred suppliers.

1----------2----------3----------4----------5

27) The indicators comprising the Global Reporting Initiative (GRI) Guidelines constitute a good foundation for evaluating the sustainability of a supplier.

1----------2----------3----------4----------5

28) The process how to evaluate suppliers sustainability work, performance and risks/opportunities (methodology/tools/criteria) will undergo major changes during the next 2-3 years

1----------2----------3----------4----------5

29) The process how to evaluate suppliers sustainability work, performance and risks/opportunities (methodology/tools/criteria) will undergo major changes during the next 5-6 years

1----------2----------3----------4----------5

30) ABB is a pro active company in the sustainability area.

1----------2----------3----------4----------5

31) Sustainability management is crucial for ABB as a supplier.

1----------2----------3----------4----------5

32) You demand environmentally related data from suppliers (ABB)

1----------2----------3----------4----------5

33) LCA, Life Cycle Assessment information has been used in purchasing decisions.

1----------2----------3----------4----------5

34) LCA is a useful tool for identification of cost reduction possibilities in purchasing decisions.

1----------2----------3----------4----------5

Financial sector
The following questions were sent to actors in the financial sector

General issues (Relate the questions to your own position) Please, select one alternative for each question.

1) Your main responsibility/working area.
   a) Financial analysis
   b) Sustainability analysis
   c) Other, please specify:

2) Your working time spent on sustainability issues during the last 12 months.
   a) < 1 week
   b) 1 week - 1 month
   c) 1 month - 3 months
   d) 3 months - 6 months
   e) > 6 months

3) Your planned amount of work time to be spent on sustainability issues during the next 12 months (compared to the last 12 months).
   a) Much less
   b) Less
   c) Equal
   d) More
   e) Much more

4) On what sustainability issues did you spend most of your time during the last 12 months?
   a) Environmental
   b) Social
   c) Ethical
   d) Health and safety
   e) Other, please specify:

5) Your educational background.
   a) Technical/engineering
   b) Natural sciences
   c) Social sciences
   d) Other, please specify:

6) Your participation in sustainability education, training or experience exchange seminars during the last three years.
   a) < 1 day
   b) 1-3 days
   c) 4-10 days
   d) >10 days

Give your opinion about the following questions. Relate the questions to your own experience from analysis of companies. Please, select one alternative for each question.
For questions 7-11: If relevant, you may select two alternatives for each question.

7) Main driving force for working with sustainability issues.
   a) Customer requirements
   b) Legal and governmental requirements
   c) Internal management programs
   d) Increasing sustainability awareness in the whole society
   e) Other, please specify:

Additional comments:

8) What is the main obstacle for integration of sustainability issues in the daily activities?
   a) Available manpower
   b) Management commitment
   c) Insufficient education and training in sustainability issues
   d) Evaluation tools and methodologies
   e) Management tools and methodologies
   f) Costs for conducting analyses
   g) Lack of access to sustainability expert
   h) No obstacles are identified
   i) Other, please specify:

Additional comments:

9) When evaluating company sustainability work, performance and risks/opportunities which of the following information is the most important?*)*
   a) Corporate policies and expressed corporate commitment,
   b) Existence of sustainability management systems and tools
   c) Sustainability communication and reporting
   d) Company performance
   e) Product performance
   f) Other, please specify:

Additional comments:

10) When evaluating company sustainability work, performance and risks/opportunities which of the following tools is the most important for them to have implemented?
   a) Environmental management system (e.g. ISO 14001, EMAS)
   b) Environmental analyses on their products (e.g. LCA, Life Cycle Assessment)
   c) Environmentally declared products (e.g. EPD, Environmental Product Declarations)
   d) Occupational health and safety management system (e.g. OH SAS 18001, SA 8000)
   e) Expressed commitment to the principles of the UN Global Compact
   f) Reporting according to the Global Reporting Initiative (GRI) Guidelines
   g) Other, please specify

Additional comments:

11) Which of the following information source is the most critical one in your evaluation process?
   a) Company legal reporting (e.g. fiscal reports)
   b) Company voluntary reporting (e.g. sustainability reports)
   c) Personal contacts
   d) External sources (e.g. national statistics, media)
   e) Other, please specify

Additional comments:

12) Do the companies provide you with the requested information?

a) Always
b) Mostly
c) Seldom
d) Never

Additional comments:

13) Do the companies provide you with superfluous information?
a) Always
b) Mostly
c) Seldom
d) Never

Additional comments:

14) Does high sustainability rating lead to other investment decisions that would be the case without such ranking information?
a) Always
b) Mostly
c) Seldom
d) Never

Additional comments:

Give your opinion the following statements. Relate the questions to your own organisation
Use a scale between 1 and 5 and, please, mark the selected position on the line. Check 1 for full disagreement with the statement. Check 5 for full agreement with the statement.

15) Current sustainability evaluation tools and methods are too resource and time consuming.

1----------2----------3----------4----------5
Full disagreement Full agreement

16) It is vital to improve the efficiency of the sustainability evaluation tools and methods.

1----------2----------3----------4----------5

17) Companies with high rated sustainability performance have a competitive advantage in their businesses.

1----------2----------3----------4----------5

18) Companies being committed to sustainability expressed in e.g. policies and reports perform better financially.

1----------2----------3----------4----------5

19) Companies being committed to sustainability expressed in e.g. policies and reports perform better environmentally.

1----------2----------3----------4----------5

20) Companies being committed to sustainability expressed in e.g. policies and reports perform better socially.

1----------2----------3----------4----------5

21) Companies with an implemented environmental management system (e.g. ISO 14001, EMAS) perform better environmentally.

1----------2----------3----------4----------5

22) Companies conducting environmental analyses on their products (e.g. LCA, Life Cycle Assessment) perform better environmentally.

1----------2----------3----------4----------5

23) Companies with environmentally declared products (e.g. EPD, Environmental Product Declarations) perform better environmentally.

1----------2----------3----------4----------5

24) Companies with an implemented occupational health and safety management system (e.g. OH SAS 18001, SA 8000) perform better socially.

1----------2----------3----------4----------5

25) Companies with an expressed commitment to the principles of the UN Global Compact are more responsible corporate citizens that perform better socially and environmentally.

1----------2----------3----------4----------5

26) Companies that report according to the Global Reporting Initiative (GRI) Guidelines perform better socially and environmentally.

1----------2----------3----------4----------5

27) The indicators comprising the Global Reporting Initiative (GRI) Guidelines constitute a good foundation for evaluating the sustainability performance of a company.

1----------2----------3----------4----------5

28) The process how to evaluate company sustainability work, performance and risks/opportunities (methodology/tools/criteria) will undergo major changes during the next 2-3 years.

1----------2----------3----------4----------5

29) The process how to evaluate company sustainability work, performance and risks/opportunities (methodology/tools/criteria) will undergo major changes during the next 5-6 years.

1----------2----------3----------4----------5

30) ABB is a pro active company in the sustainability area.

1----------2----------3----------4----------5

31) Sustainability management in ABB is crucial for ABBs business.

1----------2----------3----------4----------5

Academia
The following questions were sent to researchers in academia

General issues
(Relate the questions to your own position) Please, select one alternative for each question.

1) Your main research area?
   a) Engineering
   b) Sustainability issues
   c) Business administration
   d) Economics
   e) Other, please specify:

2) Your working time spent on sustainability issues during the last 12 months:
   a) < 1 week
   b) 1 week - 1 month
   c) 1 month - 3 months
   d) 3 months - 6 months
   e) > 6 months

3) Your planned amount of work time to be spent on sustainability issues during the next 12 months (compared to the last 12 months):
   a) Much less
   b) Less
   c) Equal
   d) More
   e) Much more

4) On what sustainability issues did you spend most of your time during the last 12 months
   a) Environmental
   b) Social
   c) Ethical
   d) Health and safety
   e) Other, please specify:

5) Your educational background?
   a) Technical/engineering
   b) Natural sciences
   c) Social sciences
   d) Other, please specify:

6) Your participation in sustainability education, training or experience exchange seminars during the last three years.
   a) < 1 day
   b) 1-3 days
   c) 4-10 days
   d) >10 days

Give your opinion about following questions. Relate the questions to your view on industrial organisations. Please, select one alternative for each question.

For questions 7-11: If relevant, you may select two alternatives for each question.

7) Main driving force for working with sustainability issues.
   a) Customer requirements
   b) Legal and governmental requirements
   c) Internal management programs
   d) Increasing sustainability awareness in the whole society
   e) Other, please specify

Additional comments:

8) What may the main obstacle be for integration of sustainability issues in the daily industrial activities?
   a) Available manpower
   b) Management commitment
   c) Insufficient education and training in sustainability issues
   d) Evaluation tools and methodologies
   e) Management tools and methodologies
   f) Costs for conducting analyses
   g) Lack of access to sustainability expert
   h) No obstacles are identified
   i) Other, please specify

Additional comments:

9) When evaluating company sustainability work, performance and risks/opportunities which of the following information is the most important?
   a) Corporate policies and expressed corporate commitment,
   b) Existence of sustainability management systems and tools
   c) Sustainability communication and reporting
   d) Company performance
   e) Product performance
   f) Other, please specify:

Additional comments:

10) When evaluating company sustainability work, performance and risks/opportunities which of the following tools is the most important for them to have implemented?
   a) Implemented environmental management system (e.g. ISO 14001, EMAS)
   b) Environmental analyses on their products (e.g. LCA, Life Cycle Assessment)
   c) Environmentally declared products (e.g. EPD, Environmental Product Declaration)
   d) Occupational health and safety management system (e.g. OH SAS 18001, SA 8000)
   e) Expressed commitment to the principles of the UN Global Compact
   f) Reporting according to the Global Reporting Initiative (GRI) Guidelines
   g) Other, please specify

Additional comments:

11) Which of the following information sources could be the most critical one for an evaluation process?
   a) Company legal reporting (e.g. fiscal reports)
   b) Company voluntary reporting (e.g. sustainability reports)
   c) Personal contacts
   d) External sources (e.g. national statistics, media)

e) Other, please specify

Additional comments:

12) Do companies, in general, provide its stakeholders with adequate information on sustainability?
   a) Always
   b) Mostly
   c) Seldom
   d) Never

Additional comments:

13) Do companies, in general, provide its stakeholders with superfluous information on sustainability?
   a) Always
   b) Mostly
   c) Seldom
   d) Never

Additional comments:

14) Does high sustainability rating (e.g. Dow Jones Sustainability Index) lead to other decisions that would be the case without such ranking information?
   a) Always
   b) Mostly
   c) Seldom
   d) Never

Additional comments:

Give your opinion the following statements. Relate the questions to your own organisation
Use a scale between 1 and 5 and, please, mark the selected position on the line. Check 1 for full disagreement with the statement. Check 5 for full agreement with the statement.

15) Current sustainability evaluation tools and methods are too resource and time consuming.

1----------2----------3----------4----------5
Full disagreement Full agreement

16) It is vital to improve the efficiency of the sustainability evaluation tools and methods.

1----------2----------3----------4----------5

17) Companies with high rated sustainability performance (e.g. Dow Jones Sustainability Index) have a competitive advantage in their businesses.

1----------2----------3----------4----------5

18) Companies being committed to sustainability expressed in e.g. policies and reports perform better financially.

1----------2----------3----------4----------5

19) Companies being committed to sustainability expressed in e.g. policies and reports perform better environmentally.

1----------2----------3----------4----------5

20) Companies being committed to sustainability expressed in e.g. policies and reports perform better socially.

1----------2----------3----------4----------5

21) Companies with an implemented environmental management system (e.g. ISO 14001, EMAS) perform better environmentally.

1----------2----------3----------4----------5

22) Companies conducting environmental analyses on their products (e.g. LCA, Life Cycle Assessment) perform better environmentally.

1----------2----------3----------4----------5

23) Companies with environmentally declared products (e.g. EPD, Environmental Product Declarations) perform better environmentally.

1----------2----------3----------4----------5

24) Companies with an implemented occupational health and safety management system (e.g. OH SAS 18001, SA 8000) perform better socially.

1----------2----------3----------4----------5

25) Companies with an expressed commitment to the principles of the UN Global Compact are more responsible corporate citizens that perform better socially and environmentally.

1----------2----------3----------4----------5

26) Companies that report according to the Global Reporting Initiative (GRI) Guidelines perform better socially and environmentally.

1----------2----------3----------4----------5

27) The indicators comprising the Global Reporting Initiative (GRI) Guidelines constitute a good foundation for evaluating the sustainability of a company.

1----------2----------3----------4----------5

28) The process how to evaluate company sustainability work, performance and risks/opportunities (methodology/tools/criteria) will undergo major changes during the next 2-3 years

1----------2----------3----------4----------5

29) The process how to evaluate company sustainability work, performance and risks/opportunities (methodology/tools/criteria) will undergo major changes during the next 5-6 years

1----------2----------3----------4----------5

30) ABB is a pro active company in the sustainability area.

1----------2----------3----------4----------5

31) Sustainability management is crucial for ABBs business.

1----------2----------3----------4----------5