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Strategizing stuck in the past or only exploring new territory?

A case study: Carbon dioxide supply chain reporting in a Swedish multinational corporation

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Abstract

Multinational corporations take environmentally responsible actions daily by enforcing carbon dioxide (CO_2) reduction in factories and business travels, reducing waste material and substituting hazardous material. Along this development new considerations and areas of corporate responsibility arise, one of them; environmental supply chain management. The focus of this thesis is the strategic development of these environmental supply chain initiatives in the multinational case study company Entra. In particular the CO_2 emissions posing a large financial risk for Entra, main market is the industrial sector, is researched. Focus is on how Entra can strategically approach the reduction of CO_2 emissions in the supply chain and how that initiative can be implemented in practice. Empirical data from 16 interviews and internal documentation have been analyzed in the light of strategy-as-practice theory, resulting in a comprehensive understanding of the strategizing process. The collected empirical data suggests that Entra is in a place of mobility, trying to find its way to a more environmentally friendly supply chain. Visions are in place but practical implementation is to be fully accomplished, however awareness of this is present.

Introduction & problem discussion

Strategy development of MNCs is lengthy and complex and involves numerous actors and tools both internal and external to the organization. Identifying praxis, practices and practitioners (Whittington, 2006), belonging to the integrated Strategy-as-Practice (SAP) framework enables research into this complex strategizing process and its pitfalls and opportunities and seeing how these are portrayed in reality. Furthermore, Sminia (2009) found that for strategy formation in relation to practice not only the internal events should be researched but also the external occurrences that influence the realization of strategy should be looked into. Moreover, Jarzabkowski & Spee (2009) argue that SAP allows for research within a concentrated episode of praxis in which certain practices shapes a part of the strategy formation. Thus, this research focuses on one strategy episode mainly the CO_2 supply chain reporting and it will entail internal as well as external events influencing strategy formation. The one case study organization, Entra[1], is chosen in accordance with Etzion's (2007) argument that in research on corporations' influences over its environmental performance an individual firm view is commonly taken.

Corporations' ability to understand and adapt their strategy to its changing organizational environment can be studied through how they approach stakeholders according to Etzion (2007). However, the same researcher continues this line of thought by writing about key actors to environmental performance in connection to the organizational environment without mentioning suppliers. Connection between a corporations' CO_2 performance and its supply chain seems obvious and taken for granted and a view that suppliers do not significantly affect the CO_2 performance of a corporation may in some industries be accurate, but in the case organization Entra and its industry being the industrial sector, a clear connection can be seen. Additionally, in 2004 55% of Global 250 firms explicitly discussed supply chain issues in their sustainability reports (Carter & Rogers, 2008) supporting the significant impact supply chain management have on the environmental performance of the MNC. Strategy development is about planning for the future by assessing risks involved and actions to reduce these. Harwood & Humby (2008) argue that 20% of firms view sustainability issues as their biggest supply chain risk. Again indicating the significance for corporations to include the supply chain in their environmental strategy work.

[1] Entra is a fictive name used in this master degree project for the case organization investigated.

CO_2 emissions constitute a large part of energy consumption for Entra stemming from their own facilities and their suppliers'. Programs have been initiated for some time to report and reduce the in-house CO_2 emissions in own production facilities and have been successful in reaching its yearly set reduction target. However, approaching the supplier side of the CO_2 reporting and future reduction is still in an early phase and some complexities have been experienced along the way. Cucchiella & Koh (2009) argue for corporations being pressured internally and externally into taking environmental responsibility for their supply chain due to the assumption that corporations themselves are fully aware of their own environmental impact and hence should expect their suppliers to be the same. Further arguments include corporations aiming at creating a green i.e. a more environmental friendly supply chain should do so from the upstream and therewith work with suppliers that contribute with the least environmental impact.

The corporate world is used to changing according with new demands emerging may they be connected to political, social or environmental preferences (Goodall, 2008). Currently one of the most influential demands is related to CO_2 emissions. CO_2 issues are interwoven within sustainable development (Etzion, 2007). Concern about sustainability and CO_2 in particular for the global society is a phenomenon that is becoming more visible. Sustainability entails in its broader sense "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" in the words of the United Nations General Assembly (1987). The consequences of this concern can be seen in the corporate world in terms of how organizations display its efforts to support a sustainable development within and around its businesses. The increasing visibility of corporate CO_2 emissions measures taken can be linked to Normann's (2007) view on the changing business landscape and the need to reframe business to fit the new landscape when changed. MNCs spread globally are inevitable affected by pressures to develop in a more CO_2 emissions friendly manner in accordance with Normann's (2007) stated trend of corporations having to create new value, i.e. having to change to stay the same.

Business research on the field of climate change and its implications for the corporate world has been limited and one reason put forward for this is the lack of connection between academia and the practical world together with research mirroring the world's economic situation (Goodall, 2008). Furthermore, Bansal & Gao (2006) propose that now is the time for environment and organization research to be performed due to the elimination of having to

ascertain legitimacy for such work, which in turn is a result of the corporate and societal awareness on the topic of sustainability. Moreover, Rosén (2010) argue for a growing attention for research on environmental issues in relation to business strategy. Work has even begun on including the supply chain and the environmental impact it exerts on MNCs. Strategies aiming for green supply chains are a logic step to take argued by Cucchiella & Koh (2009), however the corporate world are still in the early phases of this type of strategy development. By using the SAP theory an attempt at investigating the strategic development of the CO_2 supply chain reporting initiative at Entra is possible and it will contribute to filling the gaps as presented by Goodall 2008, Bansal & Gao 2006, and Rosén 2010.

Purpose, research question and relevance

The research aims at investigating the CO_2 supply chain reporting strategy of the Swedish MNC Entra. The SAP framework will be applied to understand the strategizing process in practice and from this be able to see possible limitations with the theory derived from features in Entra's strategizing that are not explained by theory and to give a practical example of climate change and its link to business strategy. The following research question has been developed based on the problem discussion described in the previous section:

How does a supply chain CO2 reporting strategy develop in a multinational corporation?

This master degree project answers the research question by investigating the tools adopted by Entra in reporting CO_2 emissions from the supply chain and how these are implemented and reviewed by actors that came across the initiative. The research contributes with a comprehensive study on the strategy development of a green supply chain initiative in accordance to what is called for in academia (Cucchiella & Koh 2009; Rosén 2010). Originating from this knowledge base enables new insight to be discovered in how practical strategy development is viewed in a new setting i.e. CO_2 supply chain reporting. Additionally, the research presented contributes with current information about how an MNC work in practice with complex processes of strategy development within their supply chain and its management of CO_2 emissions. The result contributes with relevant information for MNCs on how to approach such a business process and the challenges involved in it. Hopefully it generates insight into the dilemmas and opportunities enabled by the CO_2 supply chain strategy development in real terms and induce more corporations to engage in taking their

environmental responsibility and to provide them with guidance on how to proceed with this type of strategy development.

The disposition of this paper is as follows; abstract to quickly make the reader aware of the research problem, empirical findings and results. Introduction describing the background for the research problem, introducing the research question and the relevance of the research. Theoretical framework described shortly to allow for deeper insight once analysis is presented. Method is detailed described to enhance reliability of research findings. Empirical section to account for the strategy development process in Entra. Analysis based on the theory and empirical section. Conclusion draws from analysis and suggestions for future research found in limitations of this research.

Theoretical framework - Strategy-as-Practice

Strategy-as-practice (SAP) is a theoretical field that aims at portraying the activities included in strategizing i.e. the doing of strategy, in organizations performed by its practitioners (Balogun, Jarzabkowski, & Seidl 2009; Whittington 2006; Sminia 2009; Jarzabkowski & Spee 2009). Further, SAP tries to restore the imbalance of strategy research not being relevant to practice. Hence, the usage of SAP in this master degree project aims at increasing the reliability and applicability of research findings to practical reality for Entra in one of their strategy episodes. SAP usage provides the opportunity to in-depth qualitative research in which a full view of the strategizing process can be examined in which the practice part includes both the individual actions of human beings as well as the socially collective norms accepted by them (Balogun, et al., 2009). Strategy is seen as "a situated, socially accomplished flow of activity that has consequential outcomes for the direction and/or survival of the firm" according to Balogun, et al., (2009: 210). Hence, the SAP framework is chosen to use as a base for analysis in this master degree project since the research conducted aims at understanding and explaining organizational activities surrounding the CO_2 reporting initiative in the supply chain which are likely to significantly influence the MNC Entra.

Strategic planning has long been displayed in practice, however Whittington (2006) argues for a lack of knowledge in how this strategic planning is carried out in reality as well as highlight research that has been able to incorporate the intra-organizational aspects of practical strategic planning with the extra-organizational parts. Further, Whittington (2006) discusses three elements to include in the SAP framework when researching the strategizing process in a

corporation; praxis, practices and practitioners (see figure 1). Firstly, praxis encompasses the actual activities taking place in the organization over time and in connection with interaction between individuals and between the organizational society and its members that formulates strategy and executes it. Praxis occurs over time and can be seen in board meetings, presentations, small talk, projects, conferences, management retreats and in consulting interventions. Further, the praxis is created out of previous experiences i.e. the past and made into present formulation and implementation of strategy to then shape the future outlook of this. Secondly, practices revolve around the resources the strategist uses when doing strategy. These include collective routines of behavior, thinking, traditions, and norms embedded in the knowledge, technologies and methods and tools used by the strategist to create praxis. The practices adopted in a corporation are multilevel i.e. they can be organization specific as well as industry, culture or society specific. Thirdly, practitioners are the actors who perform the praxis by using the practices available to them and who through their actions shape the strategy. The origins, interests and events affected by these actors beyond that of the organization are of interest in SAP according to Whittington (2007).

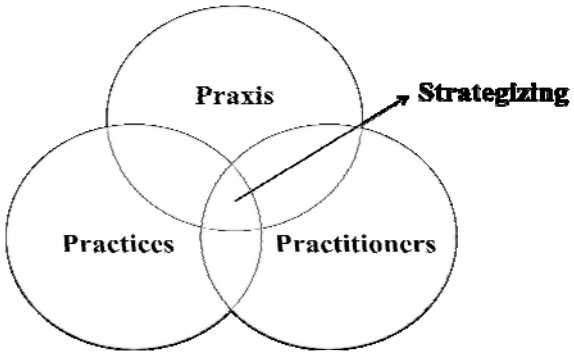

Figure 1 Balogun, et al., (2009)

Balogun, et al., (2009) emphasizes that research into all three elements is necessary since strategizing occurs in the nexus of them all to be seen in figure 1. Further, the essence of strategy is put forward as having various explanations depending on what focus the research has on strategy, i.e. whether research aims at understanding strategizing by looking into one or more of the three elements proposed by Whittington (2006) and their interrelations.

The role of the strategist can be upheld by various actors in an organization and is not limited to top managers but also includes middle managers as we as external actors such as consultants (Balogun, et al., 2009). Additionally, the SAP framework proposes that no matter what the starting point is for research, may it be praxis, practices or practitioners, parts of the

other two elements will inevitably be involved in research at some point for it to contribute to a strategizing understanding.

Practitioners can use the SAP framework of analysis in order to improve their own understanding of how strategies are developed over time and under what circumstances using what resources (Balogun, et al., 2009). New practices, adapted practices or new practitioners can be created by the existing practitioners in how they perform their praxis based on previous experiences, ability to be open for new ideas and by looking for plurality dimensions (Whittington, 2006). Further, organizational performance is influenced by the effectiveness of strategy practitioners present and the fit of strategy practices. Jarzabkowski & Balogun (2009) argue for the necessity of varying the means in how strategic planning is informing different business units in the organization in order for it to be possible to make it integrated within the units. Further, they found that the knowledge base of actors (practitioners) in terms of previous experience and power is likely to affect the level of resistance toward the intended strategy and that strategy integration is co-created through negotiation. Consequently, they argue for the role of the practitioner and the need for managerial awareness of the affect the identity of the practitioners have on the strategy planning integration and hence the strategy formation.

To fully understand the strategy occurrences found in empirical data attention also need to be made to the previous events leading up to the main strategy event being analyzed (Balogun, et al., 2009).

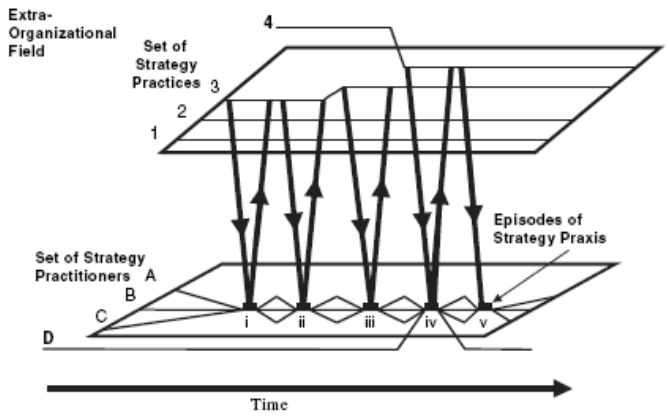

Figure 2 Whittington (2006)

The integrated SAP framework proposed by Whittington (2006) that can be seen in figure 2 is an attempt to visualize how the three elements of strategizing are connected with time and informing about the holistic view they create. Points A-D are the practitioners, A-C belonging to the organization and D being an external practitioner belonging to the extra-organizational

field e.g. a strategy consultant. The extra-organizational field in the figure is visualized as the surrounding environment of the organization and the intra-organizational field of praxis is represented by episodes i-v. Strategizing occurs when the practitioners use their norms of behavior, i.e. point 1-4 in their intra-and-extra organizational field to create praxis. Practices once they are used in an organization are the ones that are fully internalized in the organization may them stem from the extra or intra-organizational field originally. No set of practices is fixed rather practitioners amend their praxis over time.

The integrated SAP framework presents some areas of difficulty worth mentioning before using it analytically on the case organization (Whittington, 2006). Firstly, the degree of influence that the practices have on praxis is hard to judge and foresee visualized by the downward arrows in figure 2. This creates an implication of practitioners being stuck in their strategy making, however the integrated framework allows for praxis to be amended and thereby letting new practices emerge that is visualized by the kink in practice 3 in figure 2. Secondly, this emergence of practices from praxis is another implication that is represented by the upward arrows in figure 2. Thirdly, practitioners can be another implication when and if they can induce too much or too little influence on the practices adopted in an organization. Finally, praxis and its effectiveness depend on the ability of the practitioners to interpret it correctly for deployment. Then it is the role of the practitioners to mediate between praxis and practices otherwise strategy formulation and deployment can suffer immensely.

Guidelines and categorizations for SAP consideration

Whittington (2007) proposes five guidelines for SAP research to be guided by and they are presented here to be considered during the coming analysis of Entra; 1. People are not to be regarded as purely individuals in an organization, but rather as having relations and connections on different levels of society that influence the formation of experiences, behavior and results. 2. When searching for connection and relations interest should be paid to the embeddedness of these in the context of the occurrences investigated. 3. Strategy research should look for influential aspects in the neglected parts of strategy making. 4. Practices may be spread away from its original organizational source and then problems may occur if not considered for this purpose before, hence the credibility of practice need to be evaluated before becoming adopted and internalized. 5. Strategy practices are amended and changed however, there is a positive aspect in the continuity of strategy not to be forgotten.

Furthermore, Rasche & Chia (2009) developed four elements of social practices to guide strategy research. The first one being routinized behavior of the body; meaning that the repetitive movements of the strategist should be researched in terms of what it implies for the strategizing work i.e. the walking, and talking of the strategist. Secondly, research into the objects that are used by the strategist to form the strategy is lagging. Computer software, analysis tools, and strategy models are examples of such object that legitimize and help form strategy. These objects can ease the strategy making as well as hinder it and its practice development. Thirdly, practices rely on a collective understanding of the world founded on a shared knowledge platform. This platform, yet not always acknowledged to exist collectively, forms activities performed and practices developed. Finally, strategy research needs to consider the identity of practitioners and how this is shaped through the adopted practices and vice versa.

Moreover, Regnér (2003) reviews the position of strategy making in terms of what it entails in the periphery and in the centre of the MNC. Periphery inductive strategy making stemming from external and explorative actions takes the form of trial-and-error initiatives, experimenting and informal contacts. Whereas the strategy making in the centre of the organization has deductive features from which an industry and exploitation focal point involves formal reporting, planning, analysis and routines. Findings suggest that deductive strategy making is preferred to refine and improve existing strategies whereas the inductive strategy making is best applied to create new strategy and development.

Whittington's and Rasche & Chia's guidelines for strategy research and Regnér's exemplary categorizations of strategies in the making are useful as an extension of the integrated SAP framework model by Whittington (2006) proposed as a basis for analysis of Entra in this master degree project.

Methodology

The research strategy and design is a qualitative case study of a corporate entity when dealing with strategy development in a multinational setting. The qualitative case study approach allows in-depth, intense and unique investigation of the research question (Bryman & Bell, 2007) providing necessary insight into the practical sphere of the research field to facilitate the analysis made and conclusions drawn.

The case object Entra is anonymized due to sensitive information being part of the empirical material collection, to facilitate a deeper access to information and to the mindsets of interviewees, and to generate a more profound empirical data set for a valuable analysis. The chosen case object Entra is researched and enables an investigation of a contemporary phenomenon, that of CO_2 emissions reporting in the supply chain and its strategic development, in a real-life context. Entra is chosen due to its character of being a multinational corporation with a dispersed and large supply chain, its headquarters being based in Sweden which facilitated the accessibility for the researcher also being based in Sweden, and for the access granted by this specific case object of allowing research to be performed. Additionally, Entra have been highly scored on the Dow Jones Sustainability Index for several years and are regarded a corporate citizen that is very much engaged in their environmental sustainability work. Further, Entra have for some time introduced methods for reducing their in house CO_2 emissions very successfully and have in recent years also started initiatives to report CO_2 emissions from their supply chain. Entra is a well suited case object for the strategy as practice theoretical field since they provide information on how they have worked strategically with supply chain CO_2 initiatives previously and currently, giving opportunity to research the practitioners themselves, the praxis present in Entra and the practices used in the field of operations. All of which enable the use of SAP and the opportunity to analyze the nexus in between these three elements of strategizing. The field of strategy formation in which SAP belongs offers the possibility to lean on its theoretical assumptions for the practical analysis (Sminia, 2009) of Entra.

Work process

The research was initiated by a literature review on the research field of strategy development, particularly in the context of environmental strategy development, in order to become extensively familiar with previous research to function as a background for collecting empirical material. The sequential step was to initiate collection of secondary empirical data by investigating official documents related to Entra's CO_2 emissions reporting and reduction performance. This assisted in discovering some of the indicators of how and with what tools Entra work and enable the usage of this information as a basis for creating an initial interview guide.

The theoretical framework, SAP, used additionally facilitated the creation of the interview guide. Consideration was made to use the knowledge from the theoretical framework in the

interview guide without directly indicating its presence to the interviewee. This guide is of a semi-structured nature leaving room for respondents to speak freely about the questions asked. The interview guide has been revised during the data collection period in accordance with new insight emerging from previous interviews held and to suit the purpose of each unique interviewee and his/her position and involvement in the strategy development at Entra. One of the latter interview guides used in the period of collecting empirical material can be found in appendix A.

16 interviews, which lasted for about 45-70 minutes face-to-face and over the phone was conducted. Interviewees represented employees at Entra stemming from various functional departments (see appendix B) in order to facilitate a comprehensive and balanced view on the strategy development of their supply chain CO_2 emissions reporting initiative. These functional areas included; sustainability, supply chain; both supplier relations and purchasing, legal, R&D, human resources, logistics, and industry specific. Four corporate managers, five middle managers and seven employees were interviewed. All 16 interviewees were digitally recorded and later on transcribed to enable a high degree of objectivity in interpretation of data. Interviewees were chosen as suitable candidates that have insight into the CO_2 reporting initiative in some way. All interviewees contacted have been interviewed apart from representatives of suppliers to Entra, who due communication mishaps were not able to be interviewed.

During interview sessions internal documentation have been shown and shared which make up a secondary empirical data compilation. Due to the case object's anonymity this documentation remains unreferenced in the empirical section. It is used to support or enrich the story of Entra when necessary or ability to do so is present.

For the analysis the first step is to create a code list (see appendix C for code list) based on key elements from the SAP theoretical field. These codes are used in order to categorize the story of Entra into the integrated SAP framework and to highlight the challenging change mechanisms present in developing praxis over time. All empirical data in the form of transcriptions of interviews and the internal documentation was then read through and the codes are used to find relevant parts of empirical data for use in analysis within the SAP integrated framework. The identified parts of the empirical data are then worked into a coherent text described in the story of Entra by putting quotes and adding explanatory text to each quote in order to make a contribution to the story. The quotes are used word for word

when possible but are in cases altered to make grammatical sense for the reader. The story of Entra is mainly presented in a chronological order of events unfolding with the exception of some overall comments that cannot be tied to a certain time period. The conclusions drawn and the recommendations made are based on the findings from the analysis which in turn was performed with a management perspective in mind. The integrated SAP framework and its stance in strategy development entailing many actors in the process have in the finalization of this master degree project been presented from the view of management for a multinational corporation and their actions, reactions and partly future plans for their CO_2 emissions work within their supply chain.

For research to be accepted the trustworthiness of the study has to be evaluated. Lincoln & Guba (in, Bryman & Bell, 2007) argues for four criteria of trustworthiness to take into consideration in qualitative research; credibility, transferability, dependability and confirmability. The trustworthiness of this research was secured by the method adopted in terms of describing what was seen and experienced by Entra's participants using an extensive research on the case object, thereby collecting empirical data from various sources to then be categorized and see what is indicated, i.e. to strengthen the credibility of the findings. Of course it is hard to stay objective when conducting qualitative interviews, but to be aware of the objectivity problem and to stay reflective in the research approach enabled the contribution of research that can be confirmed. The dependability of the research was upheld by the careful documentation of the entire research process from beginning to end including all data sets and research design planning. The nature of the research being a case study limits the transferability of the findings to other contexts, due to the uniqueness of findings from single object investigations. However, the aim of this research was not to be able to generalize findings but rather to investigate a unique case to generate new insight about how a supply chain CO_2 reporting strategy is developed in a multinational corporation.

The story of Entra

The analysis indicated different phases of the CO_2 reporting in Entra, hence the structure of the empirical section presented follows the background of Entra, how the CO_2 reporting began, the three phases of CO_2 reporting tools adopted, rising challenges, and welcomed possibilities.

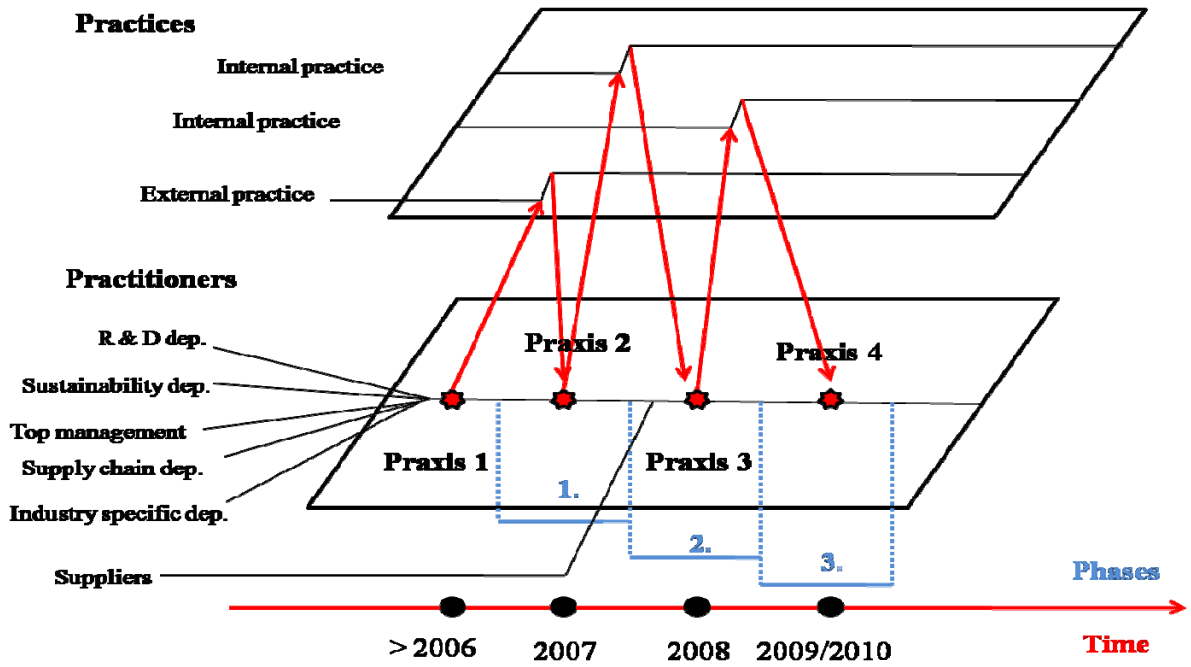

Figure 3 Entra strategy process

Figure 3 illustrates the strategizing process in place at Entra found in the analysis and is presented here to visualize the process and the identified phases this goes through to guide the reading of the empirical section.

Background

Entra is a Swedish multinational corporation that is headquartered in Sweden but conduct its business all over the globe. With more than 40 000 employees spread in over 100 countries the organization has grown immensely since its start in the beginning of the 20th century. Today they roughly have 200-300 main suppliers of direct material and all and all around 15 000 suppliers worldwide. Entra produces high-tech products and parts that they sell to industrial customers of various kinds and also provide services within their field of expertise. The CO_2 reporting work performed by Entra has been ongoing for some time and they have an environmental perspective as a part of the corporate strategy for the future which has been presented by the current CEO. Managers at Entra view the work with CO_2 reporting and reduction as a serious and long-term commitment to publically address the issue of climate changes sincerely, and highlights the fact that there is a huge cost associated with their energy sourcing.

Entra is in a unique business environment in which they very often are also a supplier to their suppliers. The growing commitment for corporate environmental sustainability work pushes organizations to look into how they can influence their supplier channels. Entra is not engaging in any attempt to influence suppliers that they in turn also supply to on the matters of CO_2 emissions more than the mere delivery of their product being produced with the emissions impact in mind. But remarks are made that Entra should perhaps weigh in if they are a supplier to one of their suppliers in the initial risk assessments made upon starting to work with suppliers concerning CO_2 emissions. However, Entra have to keep in mind that this type of pressuring or attempt of influencing customers/suppliers can backfire and hurt business relations if not handled with care.

The work mentality shaping Entra's working manner is described as progressive and value-based. Further, emphasis is put on how Entra work with manager positions and the importance of appointing managers with the same value framework as the entire organization uses in order to maintain a coherent mentality all over the globally spread enterprise. In the late 1990's a new president was appointed to Entra, one who became known to put pressure on the company to straighten up and perform better financially, within community responsibility and within leadership. This pressure led to combining decent profitability with decent behavior supported by the argument that the only thing hindering this development is the own perception on what constitute decency.

Despite the current focus on sustainability within Entra the mentality of the organization has always been one of taking responsibility before it was made a corporate trend and intention to continue to work on it is evident. The long history of Entra implies a well-oiled machine with experiences in most fields within its industry. The brand of Entra is very strong and this they argue is due to their concern for decency. When customers approach Entra the brand is what draws customers to them. However, once customers are in place Entra have to perform equally to competitors or even better to live up to their reputation in term of product quality, sales quality and the speed and ability of the organization to reply to customers' demand to make them better in their respective market. Entra also recognizes the importance of having a very good reputation for its public undertaking towards environmental issues and human rights issues which is part of their decency mentality.

The image of the company as being decent is created through the general understanding of the link between profitability and managerial behavior. Entra argues that to do nothing about

unacceptable behavior is to take a decency risk and this will affect the possibility of making a decent profit. Hence, works to limit unacceptable behavior is taken.

Entra is an engineering company from the origin, but today they are shifting towards a more versified work force and working mentality. Entra's general opinion on how to see the profitability of sustainability work is one such dimension. They argue that the single fact of Entra's profitability is evidence enough for sustainability work being profitable, since sustainability work is part of Entra and the link is then obvious to see without having to show absolute numbers for its contribution to profitability. The engineering origin of Entra is still fought with and when newer areas are brought up for discussion such as CO_2 reporting and reduction work they rely on their perception of sustainability work and profitability going hand in hand.

How it began - Surprised by a Life-Cycle-Analysis? (> 2006)

The work with the code of conduct that was written in 2002-2003 included a very small aspect of the suppliers, but no additional work was made into the environmental direction of the supply chain at that time. The current president of Entra is actively taking stance in the environmental sustainability issues by getting involved and engaged to discuss these matters. It was the current president that took the initiative to install a centralized corporate sustainability unit in place and at this time Entra was very good at receiving sustainability certifications, but the task became to be about broadening the scope of the work;

> "It was not until we felt that we had some control over our scope 1(direct) and 2 (indirect) in-house CO_2 emissions that we started to look into the supply chain." (CM1)

Practices in Entra of long term sustainability mentality and practitioners being chosen to fit the practices of Entra can be seen as an overall starting point of the CO_2 reduction work in Entra resulting in the praxis of the in-house CO_2 reporting initiative that took place before 2006. This praxis 1 element in Entra was an intra-organizational activity that started off as an excel file and later became an automated software program after evaluations and further development of it.

The practices that were active in praxis 1 were the scope 1 and scope 2 emissions labeling stemming from the interest Entra had in the GHG protocol. Scope 1 included the direct and scope 2 included the indirect in-house CO_2 emissions. Upon the work on this initiative life-cycle-analysis were made to evaluate the emissions distribution over the entire value chain in

Entra. This is where the awareness of the weight that the supply chain carries in the overall emission picture emerged.

> "At times we know that our suppliers stand for 75% of the CO_2 emissions associated with our products and then you cannot have a credible position within climate change if you only focus on your internal effect. Therefore we have to broaden our scope to include the supply chain as well." (CM2)

Additionally, at this time pressure were put on Entra to look into the emissions situation in their supply chain when their performance on the Dow Jones Sustainability Index decreased. Further, this media pressure stemmed from the extra-organizational field;

> "We had a worsen rating on the Dow Jones Sustainability Index and it was a starting point in which we saw that we may not have followed up on suppliers in all the right ways." (M6)

Entra then decided to start work on the scope 3 indirect emissions that are generated by suppliers of materials, products and services used by Entra, originally looking into business travel and logistics. However, to maintain a credible position they knew that CO_2 emissions from the supply chain were the big challenge to overcome.

The corporate sustainability manager then approached the supply chain department with the information of the large impact the suppliers have on Entra's total CO_2 emissions. The president of Entra later challenged the sustainability department to come up with manageable procedures for collecting CO_2 data from the supply chain;

> "It took us the first year or even more to develop some reporting tool to distribute to a category of suppliers we called main (80% of what Entra purchases) suppliers to start reporting." (CM4)

The corporate sustainability manager view himself as playing a large part in the initiation of the supply chain CO_2 emissions reporting tool including to challenge the relevant parts of the organization and to say that these are the environmental issues present, these are the concerns we have, these are the responsibilities, these are the drivers, and this is why Entra want to do something about it;

> "My role there is to kind of start the fire in the organization on the issue, getting the right people involved and to push it along to the point where there is some momentum and hopefully it becomes integrated in the specific part of the oganization that need to be concerned about that." (CM2)

Phase 1 – In-house CO_2 reporting applied to supply chain (2007)

In 2006 Entra started to create the first tool to collect CO_2 data from the supply chain and in 2007 it was implemented. The tool consisted of an excel file that was based on the reporting used in praxis 1 in the in-house CO_2 reporting. The in-house version entailed a software system to putting in and aggregating the data for a root-cause-analysis leading to a plan with corrective actions and had quantitative and some qualitative measurements included. The software was developed after the use of excel files became too complex and too many versions of it was afloat. Illustrating how praxis 1 was used as a base for praxis 2 supply chain CO_2 reporting tool and revised to fit the exact need for the supply chain context. Using praxis 1 in this new context was proven a bit problematic, since the level of control Entra exerted on the procedure had then decreased.

The tale about the initial work very much implies a trial-and-error method adopted. Once the president got the information about the CO_2 emissions division across the value chain and a decision was made to report the CO_2 emissions in the supply chain, work was initiated by an risk assessment;

> "I spoke with the director of the supply organization and we started to set up meetings with suppliers. We sort of made a five minute risk assessment about where the trouble is the largest and came to the conclusion that suppliers of developing economies were a good starting point." (CM1)

The risk assessment was a desktop study and is an initial practice leading to the creation of praxis 2. It was able to identify the high-risk suppliers to audit in order to evaluate the severity of their CO_2 emissions situation since it was not possible to audit all suppliers of Entra. The sequential step was to create a tool, an excel file, for reporting CO_2 emissions and it entailed quantitative measurements of Megawatts of electricity or cubic meters of gas used in suppliers' facilities and had a CO_2 converting parameter and were created by interviewee E6 and CM2. An allocation parameter was also included in order for Entra to see how much of a supplier's CO_2 emissions are directly linked to their purchased parts. This excel file was sent to all main suppliers of Entra (approximate 200 suppliers) and was reported on a quarterly basis;

> "We started off with the main suppliers; a couple of hundred and it is just administratively very difficult. Adding the possibility to actually go and visit the suppliers and audit them and show them what we think we want them to do with their CO_2 emissions, you have to be realistic, we do not have sufficient resources to go in and spend a couple of day looking specifically at these issues at every Entra supplier." (CM2)

The thoughts behind the excel file and how it was to be filled out was explained to the supplier relations and quality personnel handling the main suppliers within the supply chain department of Entra. The supplier relations department was part of the initiative in the beginning and not the purchasing department, which was due to the supplier relations department having quality responsibility for all main suppliers and resources limitations. The supplier relations personnel were then told to send out the file to all main suppliers and to collect the data on time to be sent back to the sustainability department;

> "It is the job of the supplier relations people to act as missionaries of awareness of the CO_2 emission reporting initiative to the suppliers". (M3)

The CO_2 reporting work with the suppliers raised numerous new questions for Entra about the trustworthiness of gathered data. Concerning the CO_2 data being recorded in a reliable manner at the supplier facilities, did suppliers fully understand what was asked of them in terms of content and language. All of the questions raised and the manner in which Entra requested the data, on a quarterly basis, led to them realizing that the tool was not consistent and did not give reliable data to be trusted;

> "I was almost surprised that we sent out excel forms and received answers from some suppliers…it is a bit naive I think to believe that large suppliers will send quarterly reports to Entra on their CO_2 emissions when no one else is requesting it." (CM1)

> "One of the problems is that we got all of this data on a quarterly basis and what does it mean what do we do with it? If I am honest I do not know how well we thought that through." (CM2)

> "First tool resulted in too much data and how to use it was unclear." (E6)

Feedback to suppliers on their CO_2 emissions performance is seen as important but one of the aspects lacking in the first tool used by Entra;

> **"**When we started I think we met with two or three suppliers to get their feedback on the process. But since we launched it we have not gone out and systematically asked for more feedback." (CM2).

Phase 2 – Adopting external tool (2008)

After the initial test with the excel file and the result being perceived by Entra as a massive amount of unreliable data, the evaluation of the first excel file used lead to a recommendation of collecting CO_2 emission on an annual basis instead of on a quarterly basis and to minimize the scope of suppliers from all main suppliers to energy-intensive main suppliers;

> "We realized that is where the biggest potential for improvement lays on the ones that are energy-intensive instead of wasting resources on suppliers that are not." (M3)

The way to limit the supplier group into the energy-intensive ones occurred through a risk assessment analysis that put forward semi large suppliers that are a bit sensitive and that have some difficult energy processes when producing a product. Once this is performed a list of priority of suppliers that are large enough and complex enough to put resources into to investigate further and follow up continuously is in place. It is also due to limited audit possibilities that Entra is decreasing the scope of suppliers to ensure reliable data.

The second tool adopted was from an external service provider who was already in contact with some of Entra's suppliers on behalf of the investor market and so the logical question to ask was; why do not Entra use the same service provider and tool for requesting CO_2 data from their suppliers that some of them are already accustomed to? In 2008 a second reporting tool was then adopted after an evaluation made of the first tool, and the second tool for reporting was taken from the extra-organizational field, the reporting procedure is labeled as praxis 3 and was part of the Carbon Disclosure Project Supply Chain (CDPSC) protocol. This tool was sent to 10 of the energy-intensive main suppliers on a trial basis. The argument behind adopting this tool was that it would be more efficient and effective due to it; entailing lower cost to join CDPSC than to develop own tool in more detail, included both quantitative and qualitative questions on carbon and energy performance, being an externally recognized project, being a standard tool thus having a higher chance of succeeding, and participation early in project gives Entra opportunity to influence and shape the tools' development. There were drawbacks seen with using the external CDPSC tool. It was more time consuming for suppliers to fill in the CDPSC file and it only collected data on total CO_2 emissions from a supplier, it did not give Entra the specific data related to their purchasing from that supplier, which is what they requested. However, at this time the latter drawback was counter argued for by Entra in an evaluation of the CDPSC tool stating that that total emissions and energy intensity of their suppliers can be used to prioritize and follow up;

> "We know from own experiences that the CDPSC is complex and takes forever to fill out, and our ambition was to get the data that is linked to our production and not data on how a supplier is performing in general." (CM1)

The above quote directly indicates that the usage of the CDPSC may not be the most useful tool for Entra viewed from the perspective of their vision for working with reducing CO_2 emissions in the supply chain.

The practice of feedback from suppliers in the used trial group of suppliers was gathered and the result was not positive;

> "They said I do not understand what the protocol is asking for, there are far too many questions, and it is not available in my local language." (CM2)

Phase 3 – Combined efforts to report CO_2 emissions (2009/2010)

Following the CDPSC tool Entra in late 2009 / early 2010 went back to the idea of creating their own tool, praxis 4, for collecting and reporting CO_2 emissions data from suppliers. This is part of the intra-organizational field due to the tool itself the excel file being internally created. The tool consist of a revised version of the excel file used in praxis 2. The practices involved in praxis 4 are quantitative and qualitative measurements, annual reporting, and energy-intensive suppliers. All four practices originate from praxis 3 and the evaluation of praxis 2 that led to adoption of praxis 3. Additionally, some practices used in praxis 4 are; communicating information to suppliers upon why CO_2 reporting is requested of them in using a new tool or why they do not need to report any longer.

Lacking in the first tool that was created was a set plan for how to interpret and analyze data and for what it would be used. The practice of a set plan to follow for the third tool was as follows; to select suppliers (energy-intensive based on risk assessment), send out excel file + letters of intent (administrated by Entra employee in India), suppliers send responses, Entra aggregate data, CM2 CM3 and M3 evaluate data, report is sent to ethical supply chain board, three best suppliers receive reward, three worst suppliers may be offered energy audit made by Entra sustainability and energy service team. One of three worst suppliers is chosen to be audited in detail in order to follow up on set corrective actions;

> "We should have a very clear plan as to what we do with the data and how we give feedback to suppliers, what our expectations are, how do we identify those suppliers that need to improve, how do we help them to identify the things that they need to improve and how do we follow up on that." (CM2)

Apart from the now set plan installed with the third tool described previously monthly meetings are to be held with all the supplier relations people that are responsible for the suppliers in the CO_2 emission initiative in order to evaluate the status of the work performed

by them and follow ups. The third tool used for collecting data that is under way as this paper is written includes suppliers CO_2 emissions data for 2008 and 2009. After the analysis of this data an evaluation of supplier group included in the initiative will be held;

> "When the replies have been turned in and we have analyzed everything we will try to come up with how to move on and if we are to make any changes regarding the scope of suppliers included". (M3)

A practice being part of praxis 4 but yet to be seen realized is the goal of by the end of 2010, and the ongoing data collecting using the third reporting tool, to have a base for a CO_2 index on the most energy-intensive main suppliers. The third tool created by Entra had the benefit of combining challenging qualitative and quantitative measurements which made it possible to reflect critically upon the CO_2 behavior of the suppliers. It is the mix of qualitative and quantitative measurements in the tool that installs a comprehension of the degree of CO_2 emissions at the supplier and this in connection to industry levels to see the level of improvement possibilities. This aspect needs to be reflected upon and linked back to Entra;

> "Reconnection of values is important, and we have had experiences within auditing in the supply chain that due to scarce resources and lack or reconnection with information failed to deliver what was intended, this should be avoided in the CO_2 emission initiative." (M3)

Another aspect included in the third tool and its follow-up entailed recognizing suppliers who performed well and to publically reward suppliers that are good at CO_2 reporting and reduction;

> "We definitely would want to get to a couple of really good examples and publically show them the value that we recognize from that performance." (CM2)

Additionally, the third tool and its excel file was to be accompanied by a letter of intent with the CO_2 reporting initiative clearly described in terms of what risk it addresses to reduce and what benefits successful emissions reporting and reduction have for the suppliers and for Entra and their interrelations;

> "To try and make sure that they understand that this is not purely an environmental concern it is in their business interest to follow up on this. (CM2)

Communicating the vision behind the CO_2 reporting initiative to the suppliers have been identified as crucial and the manner in which Entra have approached this is by informing by letters, and by having suppliers conferences in which intentions of the initiative has been

explained in detail. As well as the supplier relations personnel communicating this when sending the letters and responding to suppliers' inquires that follows.

The identification of suppliers not living up to the standard set by Entra in the third tool for reporting CO_2 emissions in the supply chain will be audited in detail and then recommended for probation until certain criteria is met;

> "We will look at it and we will try mainly from the qualitative responses to say where are the suppliers that we are concerned about, the ones that do not have an energy manager, energy policy, basically the ones that do not see this as an issue." (CM2)

The idea with the identification of suppliers that are unapproved by Entra in terms of CO_2 emissions and energy management lead to a possibility for Entra to provide them with services that will assist them in improving their CO_2 emissions work by using an already established energy and sustainability team function;

> "Suppliers even ask for help especially smaller ones with small resources for improvement. We would like to be able to offer that help and this would develop our supplier relations further." (M6)

However, the usage of the service team creates a problem of cost allocation internally within Entra.

The initiative of reporting CO_2 emissions in the supply chain is today owned by two departments within Entra, the centralized sustainability function and the supply chain function. This for the reason that the sustainability function has the knowledge to drive such an initiative but it has to be integrated in the operating unit of the supply chain organization as well. Work to integrate the CO_2 emissions initiative within the supply chain is ongoing but has as of yet not been fully accomplished. The collaboration between the sustainability and supply chain department weights over on the sustainability department. However, an aim is for it to be fully owned by the supply chain department who has the direct contact with suppliers and have the ability to influence;

> "Ultimately all of these issues with environmental sustainability you would want them to be integrated into the core of whatever business process it belongs to and it has to be done over time." (CM2)

The departments that are included in the work with the CO_2 emissions reporting are the sustainability, supply chain and to some small awareness extent the industry specific departments. Integrating the CO_2 emissions work into the right places in the oganization is

difficult but one way of doing it is to start getting CO_2 emissions criteria more visible in the criteria that evaluates potential and existing suppliers;

> "We should make it just like any of the other important parameters that we use to influence and evaluate suppliers. It has to go through that route it cannot come solely from the sustainability department." (CM2)

Entra is aware of the importance in giving feedback about and explain the vision behind the initiative to the suppliers involved and this is part of the third tool. However, they are yet to show this being executed;

> "This is not a one-time operation but will be ongoing in the future and for it to work in the long-term feedback to suppliers is crucial." (M5)

After the initial tool that was created and had been tested and the CDPSC tool was used and discarded and then when the third and final tool was created and used it was evident that part of the entire process of development of all three tools had gone fast and sometimes without deeper thought put into it;

> "To be honest it sounds as if we really did not think it through very much. Then we started to sort of question it and come up with the various situations of the tools we have. It is a more manageable scope now and we have got more useful data that we are gathering." (CM2)

The intentions for reporting the CO_2 emissions in Entra's supply chain are many and vary depending on who you ask. However, the intentions are not yet accomplished and the work is still developing as can be seen;

> "We have not yet fulfilled the intentions with the CO_2 reporting and reduction initiative within the supply chain but I would say that we have realized the importance of the issue and are working on improving our procedures for it." (CM2)

Further implementation thoughts on the third tool used are unable to be described here since the aggregation of data is occurring as this master degree project is written.

Rising challenges

Auditing

Entra performs audits on quality and terms of delivery in majority and usually they are performed by the supplier relations or by the purchasing unit. A plausible problem that arises

when audits are made that include added parameters such as CO_2 emissions concerns the balancing act of all parameters to audit and the role of the auditor;

> "It is about who is performing the audit, if it a person from the purchasing unit or someone even closer to production they will have a selective ability to see what is happening at the supplier. I believe that the type of issues that CO_2 emissions belong to can be overlooked at times if price, quality and delivery terms are approved." (CM1)

A solution to the problem may be to either have special auditors sent to the suppliers that are trained to see all aspects of the auditing criteria to be evaluated including the CO_2 parameter or to train all auditors that visit suppliers the importance of all the evaluation criteria. Implied is that attention is not directed at the problem currently;

> "In Entra the overall environmental work stems from our quality thinking in all that we produce. We need to train our auditors in how it is all connected. I do not think we have done that yet." (CM1)

Motivation & Influence

Upon discussing the challenges that may come with the work of reporting CO_2 emissions in the supply chain it seems as if a balance needs to be upheld in terms of providing incentives for suppliers to cooperate without raising cost and visualize the benefits it can reward both the suppliers and Entra if successful reductions in CO_2 emissions are achieved;

> "There is a potential for a supplier to respond negatively or actually to say; if you are going to ask all of this from us we are going to have to put our costs up. We might actually have a counteractive or negative impact. I would argue straight back to a supplier that it will actually save you money." (CM2)

The financial risk involved is part of the discussion and when energy prices go up in the future this will have a large affect on Entra's cost. It is due to scarce resources and tightened legislation that Entra regard this to be a problematic area in the future. However, for now it seems as if it is the internal pressures of taking responsibility within the sustainability department that drives the CO_2 reporting initiative forward and not the potential risk of increasing energy cost;

> "I think at the moment we are very much driving this from the point of it being our responsibility and it not so much being about managing future cost risk in supply chain; it is about meeting the expectations of the sustainability department." (CM2)

The second tool adopted, the CDPSC, was too complex and complicated for suppliers to fill in and was discarded for numerous reasons for the creation of a third tool that is applied now in

Entra. In order for the tools to be working well some type of ownership for the users of the tools both internally and externally has to be created;

> "I believe that ownership is very important and I think that there is where you need to get so that relevant decision makers know whether to choose this or that supplier." (E7)

One way to organize this is to have a centralized function responsible for strategies and policies and the overall concerns (sustainability department). However, their main role will be to create ownership out in Entra for the CO_2 issue as an example. The key for this unit is to practically be working out in the organization to solve problems and not to wave with policy documents. Argued is the importance of having to be committed with the relevant people affected by the initiatives in their daily work.

Taking on the main role driving the CO_2 reporting initiative seems to be somewhat unclear in Entra. Different departments and people have been appointed for being best suitable for this;

> "Purchasing people need to be involved in the CO_2 emissions work with suppliers not necessarily to drive it but to be involved." (M7)

> "Purchasers can discuss these matters during negotiations but we as supplier quality relation managers have most influence in developmental terms during our audits." (E5)

> "Supplier relations personnel and purchasers need to work together to inform and influence suppliers." (E2)

The purchasing department keeps an open dialogue with the energy-intensive main suppliers but do not have the resources to influence as much as desired;

> "If we wanted to and had the resources we could have influenced quite a lot. It has as of yet not been extremely active on my part. We can improve this. To really influence you actively have to go in and do something, send in resources." (M6)

Supplier scope

Starting work to report CO_2 emissions in the supply chain raise the question of how far does the responsibility of Entra stretch? To include all tiers of suppliers, which would be suppliers in the tens of thousands or should restrictions be set to include first tier only or a specific group of main suppliers?

> "Entra have responsibility for the entire supply chain but in a descending scale the farther away you come from Entra." (M5)

An interest into the general affect that Entra and its suppliers have on its surrounding environment is evident however they contemplate where to best utilize resources for the most influential impact;

> "I think we have a responsibility to understand the supply chain CO_2 emissions issues and to try to influence them and try to ensure that we find ways to reduce these emissions over time whether that is through improving existing suppliers or selecting future suppliers with low energy or CO_2 intensity." (CM2)

Communication

The importance of knowing yourself and what and why you are performing the activities you are and not to forget about the communication of this to the affected partiers, namely the suppliers is indicated as vital;

> "We need to thank them for their efforts and in some way communicate the value their performance has for our relation and not just absolute results. This type of communication is applicable internally in Entra as well." (CM1)

Another comment that was made upon the challenges with the CO_2 initiative in the supply chain included the importance of letting all involved parties, both external and internal, to know why this initiative is taking place;

> "I think that you have to start with why we want to do it. There is a responsibility as a good corporate citizen to deal with climate change and there is a huge cost associated with our energy consumption at suppliers' facilities that indirect influence our prices and CO_2 emissions in the overall value chain." (CM2)

Communicating internally the vision behind the CO_2 reporting initiative in the supply chain has been lacking and this is the reason for why a collective view within the supply chain department is not visual as of today;

> "There are people in the supply chain department who agree with me on the need for working on reporting and reducing the CO_2 emissions in the supply chain but I would not say that is a collective view yet." (CM2)

> "We have the advantage of an engaged president which help along to create overall commitment a lot. But there is a need for the entire Entra employee base and management to understand the underlining visions and why the environmental work is important for Entra and how this is connected to the profitability of the MNC." (E6)

> "You will not get anywhere if you do not involve many and communicate the reasons for your actions. The world differs in culture and dimensions but the why always stays the same in a global organization. Put your actions in a business setting and communicate it strongly top-down and bottom-up simultaneously." (CM1)

It is through workshops and meetings, giving out brochures and awards for best practices that Entra can communicate the important message behind the initiative;

> "Awareness building is for me very important whether it is inside the company or with an external stakeholder like a supplier. If our target group does not understand our focus and why we want them to put down effort and time in this issue it will be hard to complete." (E1)

> "We have really talented personnel working with these initiatives who are committed especially within sustainability department they are sort of souls of fire for these concerns within Entra which is a force to reckon with." (CM8)

Poor communication of the initiative and need for improvement of this has been put forward as important for the initiative to have a chance to be internalized fully;

> "We need to decide how important the initiative is, how much are we willing to invest in this in resources and time, what is the objective and how are we getting there. Some of these are somewhat defined but we need to clarify it further to drive it forward." (M9)

Maturing initiative

The size of the initiative and it still being in its early phases of implementation affects the level of importance it is seen to have within Entra to be seen in the below quote made by the corporate manager of the human resource and sustainability function;

> "Projects need to come to a certain degree of maturity and size before I am included in the work with it. We have not come that far yet with this initiative." (CM8)

The corporate manager of the supplier relations and the manager of purchasing should according to the purchasing manager be the ones to take environmental initiatives further within the supply chain. Further, the purchasing department sees the value of creating a supplier CO_2 emissions index for use in their commercial negotiations;

> "The vision was for us to be able to compare suppliers based on this type of performance as well. We still want this for the commercial negotiations. CO_2 performance is part of the quality of the product." (E6)

Welcomed possibilities

Finding what group of suppliers to engage in a CO_2 reporting initiative and how to integrate the work vision for that at the right departments and people in Entra can be challenging but rewarding;

> "If we find a way to really focus on the right suppliers and maybe that means, suppliers who are energy intensive but are not controlled by a lot of legislation where our involvement and our support will actually help to identify effective approaches to reduce energy consumption and to reduce emissions and future risk associated with increased energy prices." (CM2)

To report CO_2 emissions in a way that is of demonstrated value for everyone involved in Entra and to visualize that this is a real pragmatic problem which is solved with this initiative and is going to save Entra money is strived for.

The structure with industry specific departments in direct contact with the Entra production facilities connected to those industries and their respective local purchasers is where a possibility to influence suppliers exists;

> "It is the local purchasers at our factories that have the possibility to influence suppliers within our department." (M9)

The benefits of working on the CO_2 emissions reporting and reduction initiative within the supply chain are many for Entra one is described as;

> "A great possibility of strengthen relations with suppliers in becoming more of a partner than a demander." (E1)

Analysis

The analysis builds upon the integrated SAP framework by Whittington (2006) seen in figure 3 presented in the beginning of the empirical section. In which the empirical setting of Entra is described by being categorized into praxis episodes, numerous practices belonging to the praxis and the practitioners involved are seen and a timeline is identified. These elements of the SAP theory are divided into three phases which are seen in the structure of the empirical section.

Table 1 is a summary that presents an overview of the empirical findings of the supply chain CO_2 reporting initiative within Entra in terms of what praxis, practices and practitioners are found in each of the three phases as well as in the initiation phase of the CO_2 in-house reporting.

The change mechanisms moving from one phase to another are reflected upon in the following analysis and the overall aspects of transition, path dependency, practitioner grouping, periphery strategizing, and communication that are considerations to be aware of in a CO_2 strategy development process are presented and discussed.

Table 1 Summary of SAP elements found in Entra

Element/Phase	Initiation	Phase 1	Phase 2	Phase 3
Praxis	In-house CO_2 reporting	First supply chain CO_2 reporting	External supply chain CO_2 reporting tool	Combined efforts of supply chain CO_2 reporting
Practices	•Internal effect •Sustainability mentality •Life-cycle-analysis •Dow Jones Sustainability Index •Quarterly reporting •Excel file •Software program •GHG scope 1 & 2 •Quantitative measurements	•External effect included •GHG scope 3 •Risk assessment •Audit •Excel file •Quantitative measurements •All main suppliers •Quarterly reporting •Limited audit possibilities •Trial –and-error method	•External effect included •GHG scope 3 •Annual reporting •Energy-intensive main suppliers •Risk assessment •CDPSC protocol •Quantitative & Qualitative measurements •Supplier feedback	•External effect included •GHG scope 3 •Excel file •Energy-intensive suppliers •Annual reporting •Quantitative & Qualitative measurements •Informing suppliers of changes •Set action plan to follow •Monthly supplier relations meetings •Supplier feedback •Reward good performance •Audit worst performance •Supplier conferences
Practitioners	•President •Sustainability department •Industry specific departments	•President •Sustainability department •R&D •Supplier relations •Suppliers included	•Sustainability department •Supplier relations •CDPSC •Suppliers included	•Sustainability department •Supplier relations •Suppliers included •Indian administrative resource •Energy and sustainability team function

Transition 1. **Transition 2.** **Transition 3.**

Regarding the transitions

The integrated SAP framework by Whittington (2006) has laid the foundation for the coming transition analysis. The purpose behind the framework is to provide the possibility to link this theoretical framework on strategy procedure to empirical settings in practice. The following transition analysis illustrates the possibility to identify praxis, practices and practitioners in Entra within the supply chain CO_2 reporting strategy episode. However, as to be seen in the below transition analysis upon using the integrated SAP framework additional elements arise as being important for the strategizing within this context. These are further built upon in the extension of the analysis to include these as well.

The transitions between the phases in table 1 are found to be linked to the practices used in the previous phase. These practices can be seen as stemming from the extra-organizational field (external) or the intra-organizational field (internal). An attempt at accounting for these is made in the following transition analysis.

Transition 1: Initiation phase → phase 1

Moving from the stable and developed in-house CO_2 reporting to starting a CO_2 reporting initiative in the supply chain was a big transition for the involved practitioners to apply as seen in the following section.

The sustainability mentality of Entra is a clear trigger for why the in-house CO_2 reporting started. The following adoption and influence that the external practices of the GHG protocol, the Dow Jones Sustainability Index and the life-cycle-analysis had affected the development of the supply chain CO_2 reporting initiative in its current direction. Furthermore, the form the phase 1 praxis embraced is closely connected to the tool used in the in-house reporting. It follows the same outlining of being based on an excel file, including quantitative measurements, and being quarterly reported. However, one exception is then the context in which it is used, namely the supply chain instead of the own production facilities to be linked to Whittington's (2007) remark on the difficulties in transferring practices between organizational sources. Moreover, phase 1 praxis was sent to all main suppliers of Entra, which may again be linked to the in-house reporting that concerned all own production facilities. The request of CO_2 reporting by all main suppliers in the phase 1 praxis was later to be seen as non efficient since data overload was the result and the reliability of the data was questioned.

The external change mechanism in moving from the initiation phase to phase 1 praxis that is evident are partly the arguments for including all three scopes of the GHG protocol. Arguing to be a MNC that have a high awareness about and a prevailing sustainability mentality and to only adopt 2/3 of the external GHG protocol does not portray a credible position. To ensure work towards improving the environment and having a long-term commitment to achieving this Entra had to adopt all three scopes of the GHG protocol once it was initiated. Furthermore, Entra's worsening position on the external Dow Jones Sustainability Index affected the transition towards reporting CO_2 emissions in the supply chain context. The media pressure exerted from this obviously affected the involved practitioners to investigate the possibility of adding this type of reporting to the supply chain context. Moreover, the usage of life-cycle-analysis within the in-house reporting disclosed the weight that CO_2 emissions in the supply chain enforce over Entra's total emissions picture and forced the practitioners to open their eyes for the affects it may have for the decent profitability mentality of the MNC.

Thus, when the level of control practitioners exerted over the CO_2 reporting shifted with transition 1 into the supply chain context both internal and external practices transferred with it into phase 1. Additionally, the compliance to follow the entire GHG protocol and its three scopes and effort to improve the rating on the Dow Jones Sustainability Index illustrates concern for legitimizing the supply chain CO_2 reporting initiative to a broader societal context supporting Balogun et al., (2009) argument for organizations being influenced by societal norms they agree with. In turn this shows the different influence that external versus internal practices have for the strategizing procedure beyond that which is described by Whittington (2006). However, concern is to be raised over the path dependence feature seen and the transferring need of practices which is a recognized pattern to be developed further in the section following the transition analysis.

Transition 2: phase 1 → phase 2

Shifting the CO_2 reporting from the own created tool to using an external version was a decision that intended a better outcome, but that resulted in a worsen situation to be seen in the following section.

The internal evaluation made of phase 1 praxis lead to the reporting being recommended to be annual and that the scope of suppliers included in the reporting to be limited to energy-

intensive suppliers. Hence, the change mechanisms active in transition 2 from phase 1 praxis to phase 2 praxis was the naiveness in including all 200-300 main suppliers in a first trial of the reporting due to resource constraints to perform detailed follow-ups and audits of all main suppliers. Further, the risk assessment practice used to come up with the revision of supplier scope to be limited to energy-intensive main suppliers can be connected to the risk assessment made in the phase 1 praxis in which the supplier scope with highest CO_2 emissions risk were identified. Additionally, the result of phase 1 praxis was huge amounts of quarterly data that was questioned in terms of reliability. Furthermore, to reflect upon the outcome of the phase 1 praxis data compilation and administration difficulties is to open the doors for letting the suppliers become part of the strategizing indirectly. Instead of revising the phase 1 praxis to encompass the desired changes that was thought to be called for, investigation was made into adopting an external practice to become phase 2 praxis.

The CDPSC protocol was adopted on the grounds put forward in the evaluation of the phase 1 praxis which called for revisions to be made. The reasons for looking into a new reporting tool included beliefs on it to be more efficient and effective, induce lower cost than revising own reporting tool, included both quantitative and qualitative measurements of CO_2, and had a higher trustworthiness of gathered data and external recognition. The external practice of following the GHG protocol still in place in this transition has clearly continued to influence the praxis decisions made by the involved practitioners. Adopting the external CDPSC protocol to further the compliance of the GHG protocol is another way for Entra to maintain their credibility in their sustainability mentality. Part of the phase 2 praxis was supplier feedback which is a practice that was not found in phase 1 praxis. This new practice assisted Entra in realizing what type of reporting the chosen supplier scope responded well to and what challenges they experienced by reporting the CO_2 data using this tool. By taking in suppliers' views Entra open up for suppliers to become practitioners guiding what practices are used to further develop the reporting initiative in line with Whittington (2007) view that strategy influences are to be looked for in the neglected parts as well.

Transition 2 entailed broadening the horizon and looking into what alternative CO_2 reporting options existed. New practices then came into the strategizing process that made it more reliable, focused, and holistic. However, traces of the initiation phase practices are still kept within the work surrounding the external phase 2 praxis. Concern is raised around why Entra adopted an external service provider's CO_2 reporting tool when knowledge of its complexity

was already known. Adopting an external service providers' tool may be one way of consciously open up for new ideas to take place within Entra or at the time of contemplation appeared to be the better option due to the mentioned pros of it. Either way the phase 2 praxis led to new practices assisting in the strategizing development. A new practitioner emerged in transition 2; the suppliers themselves are indirectly affecting the further development of the practices used by taking part in the initiative.

Transition 3: phase 2 → phase 3

The result of trial-and-error development so far resulted in combined efforts of previous praxis into the phase 3 praxis. Once the phase 2 praxis was adopted from the extra-organizational field it became integrated within Entra and the practices within it was internalized. Hence, for transition 3 between phase 2 to phase 3 the once external practices within it are in phase 3 praxis of the extension of own created reporting tool viewed as internal practices.

The change mechanisms transitioning from phase 2 praxis to phase 3 praxis include suppliers finding phase 2 praxis to be very time consuming and complex to fill out. It was the supplier feedback practice adopted in the phase 2 praxis that contributed to that result being found. Supporting Whittington (2006) by illustrating the affect practice has on further praxis. Furthermore, the aggregated data Entra received in phase 2 praxis was not in the form they requested; specific data related to their purchasing from the specific supplier, and so the intentions of gathering supplier CO_2 data was not fulfilled using the phase 2 praxis. However, the external reporting tool had some positive practices within it. One of these was the combination of quantitative and qualitative measurements to capture not only numbers but also an overall energy management mentality of suppliers. In line with Whittington (2006) view on becoming stuck in strategizing practices that are not efficient and the possibility to work through these to revise and take the best experiences to the next praxis. The practice of combining quantitative and qualitative measurements was transferred into the phase 3 praxis with the belief that it would enable a more comprehensive picture for Entra on their suppliers' overall CO_2 reporting and possibility and willingness to work on its future reduction. Furthermore, the expansion of internal practices in phase 3 praxis included; information letter sent out to suppliers, set action plan for reporting and analysis procedure ending with supplier consequences, monthly meetings with supplier relations personnel, rewards for good supplier performance and audits and assistance for suppliers with poor performance, and to use

supplier conferences as forum for information sharing. These new practices are stemming from the benefit seen in the phase 2 praxis in taking more into account than the mere quantitative numbers to evaluate suppliers on. The Indian administrative resource that are to assist the entire reporting procedure in phase 3 praxis is in a position of becoming a influential practitioner based on how the work is performed and in what way data is complied and presented for analysis. The energy and sustainability team function that may be put in a role to assist suppliers with energy audits and help with improving their CO_2 emissions outlook is also in a position of becoming an influential practitioner. The manner in which they communicate and create close relations with suppliers concerning these matters is what shows that they have a possibility to affect what practices are best suited for some suppliers to use for reporting.

Once suppliers got to raise their opinion about the CDPSC protocol reporting tool used they became part of the strategizing when Entra took into account their views and made phase 2 practices influence the development of phase 3 praxis.

Transition 3 entails like the previous transitions elements of path dependency and the emergence of new practices that are enhancing the strategizing process as Whittington (2006) argue that the integrated SAP framework do. However, what stand out in this transition is the use of combining internal and external previous practices in a new combined effort to take what is regarded the best of previous experiences and make these into one comprehensive CO_2 reporting tool. New practitioners are also identified in this transition expanding the possibilities to affect the strategizing process further.

Path dependency & transferring context

The pattern seen in the three transition phases illustrates a clear need of transferring practices both internal and external. This supports the argument by Balogun, et al. (2009) that attention to previous strategy events is important for interpreting empirical data. The level of influence that the in-house reporting had on the supply chain reporting that acted as a starting point to the initiative and the influence between phases 1-3 are significant for the further development of the strategizing process. However, some distinction between the internal and external practices is made. The external practices transferred are apart from assisting in creating more effective reporting tools, contributing to maintaining a credible position as an actor that is environmentally concerned and that have a progressive approach towards sustainability.

While the internal practices main contribution when being transferred is linked to improving the procedure surrounding the reporting tool.

Praxis of all phases is sequentially being revised in order for the next praxis to take place in a new improved format with the inclusion or exclusion of practices. However, as Whittington (2007) argues there is a value in maintaining some practices in order not to lose the continuity of strategy development and the behavior and thinking behind practices adopted. The consideration of the importance of continuously evaluating the scope of suppliers to be included in the request to report CO_2 data exemplifies the practitioners being attentive for this. The strategizing process seems to be all about the development and revision of praxis to be improved and prolonged. However, as Whittington (2007) argues there are influences hidden in the elements of strategizing that are less evident. The practitioner role of the suppliers themselves is one such hidden influence that the active and directly involved practitioners may not be aware of. When supplier responses or lack of responses or feedback is taken into account in the strategizing process this makes the suppliers part of the group of practitioners.

Practitioners risk being stuck in their strategizing (Whittington, 2006). In Entra previous practices are continuously transferred to the next phase and thereby they are exposed to the stuck in strategizing risk. One example is the use of quantitative measurements transferred from the initiation phase to phase 1. The quantitative measurement practice limited the possibility of analyzing suppliers' general willingness to work in an environmental friendly direction beyond that of pure numbers. However, the qualitative feature was included in the phase 3 praxis once the external reporting tool used in phase 2 praxis transferred this feature of the reporting procedure. Another example is the division of suppliers belonging to main or not main suppliers. Had Entra not used this categorization throughout the strategizing process they may be looking into a completely different supplier scope today based on other measures than how the suppliers are connected to Entra. Possibilities then open for the reporting supplier scope to being energy-intensive disregarding them being identified as main supplier or not. One explanation for Entra's behavior of path dependency and transferring need may be that once the initiative to report CO_2 emission from the supply chain was started it found itself on new ground, admitting to that sometimes they did not always think things through before taking action and used the comforting and well known practices from the in-house reporting as a base and was not aware of the risks involved in doing so. However, as of today this

situation is changed and experienced have been gained within the area and they are better equipped to develop the supply chain CO_2 reporting further.

Grouping of practitioners

The individual practitioners involved in the CO_2 reporting are grouped in categories of working departments or positions due to the common referencing to these rather than to individuals in the story of Entra section. The reoccurring groups are; president, sustainability, supplier relations and suppliers. When examining the division of these groupings in table 1 to identify the roles and level of involvement they exerted in the different phases is not evident. However, to be seen from the empirical section the president took on the role of corporate communicator of responsibility for environmental initiatives being developed within Entra. Further involvement by the president in phase 1, 2, and 3 praxis has not been evident. In phases 1 to 3 and its praxis the sustainability department and its corporate manager(s) have played large roles in terms of at different times being corporate responsible for the centralized sustainability department in Entra from which the supply chain CO_2 work was made a reality. One of the corporate managers was part of the initiation of the supply chain CO_2 work conducting the initial risk assessment of suppliers CO_2 performance and then the initiative was transferred to the second corporate manager. It was the sustainability department together with the R&D department who created the initial excel file practice used in the phase 1 praxis.

The main responsibility for driving the project has been divided between the supply chain and the sustainability department at Entra. The corporate manager of the supplier relations function within the supply chain department has been part of the initiative from the beginning after being approached by the sustainability department about the initiative. The supplier relations corporate manager communicated together with a manager working for both sustainability and supplier relation department to supplier relations employees how the first tool was to be filled out and assigning them to send out and collect the data from their respective supplier responsibility area. The suppliers themselves became practitioners in phase 2 and phase 3 praxis when they through their interaction with Entra either through feedback or through delivering non-compliance or unreliable data affected further praxis development.

Who to drive CO_2 reporting initiative?

Evident is that who to drive the CO_2 reporting initiative is dispersed in Entra, voices indicates supplier relations, purchasing and sustainability department for this task. Or at least to find all of them involved in one way or another. Additionally, the role of local purchasers has been mentioned as well as to their close connection to suppliers. However, as long as the initiative is concentrated on energy-intensive main suppliers, local purchasers will not be able to have an extended practitioner role until the scope of supplier is increased and local suppliers are incorporated too since the structure today in Entra follows main suppliers being handled centrally and local suppliers are handled locally. The supplier relations department seems to have had a large role in the initiative since the beginning and kept close to the development of phase 1 to 3 through their auditing procedures of suppliers incorporating aspects of CO_2 emissions performance. If Entra regard CO_2 performance of suppliers as part of the quality of a supplier than the responsibility of driving a CO_2 emissions reporting and future reduction initiative within the supply chain falls naturally within that department. However, if Entra regard the CO_2 performance of suppliers to be part of more than quality of suppliers than the role of the purchasing department within the supply chain, that up until now seems to have played a smaller role in the initiative, may become more apparent.

Argumentation has been made for attention to be given to the identity of practitioners involved and their effect on practices and the praxis development (Jarzabkowski & Balogun 2009; Rasche & Chia 2009) and is seen in Entra as per the below arguments. The currently driving role of the sustainability department in the initiative may diminish with time when the initiative grows stronger and includes more supplier groups of Entra. Voices have been heard that sustainability department's role is more of supporting the driving function of the initiative may that be the supplier relations or the purchasing department. Either way how the opinions raised on driving the initiative and its supporting function plays out, the manner in which the practitioners involved in the creation of praxis be it past, present or future and his/her ability to interpret praxis is what will in the end decide the effectiveness of the strategy episode of CO_2 reporting.

A problematic area in Entra is the role that supplier auditors (supplier relations personnel) have. Practitioners are said to be affected by their previous knowledge and power relations when using their practices to create praxis (Jarzabkowski & Balogun, 2009). If auditors do not have existing knowledge in CO_2 emissions and energy management they will experience

difficulties in conducting reliable audits. This type of knowledge is said to be lacking in Entra. The knowledge gap said to exist can influence the development of the supply chain CO_2 strategy if auditors are not aware of ongoing activities of suppliers that affects CO_2 emissions. Thereby they cannot recommend accurate corrective actions for suppliers to make sure that Entra's CO_2 requirements are met. In turn this can affect that practices adopted in Entra and thereby the praxis development as Whittington (2006) argue.

Caution is to be made to the involved practitioners and their level of influence on used practices (Whittington, 2007) since it is their level of knowledge that affects which practices are used and evaluation of these practices along the strategizing process is advisable to ensure progress in the desired direction. In Entra the use of quantitative and qualitative measurements used and the scope of supplies included in the phases to report CO_2 emissions have been altered due to practitioners' discussions after the use of the initiation and phase 1 and phase 2 praxis and an effort to continue these discussions for phase 3 praxis are put forward. This indicates a high level of influence from the practitioners on chosen practices and their mindset of trial-and-error method used. In line with Whittington's (2007) guideline the influence that the intra-organizational and extra-organizational field has on Entra and its used practices affecting the further development of praxis illustrates that the strategy practitioners in Entra regard themselves not only as part of the internal MNC but as part of larger society and adhere to current topics of interest therein.

Strategy in the periphery?

Entra is to be regarded in the intermediate between the periphery and centre of the strategy making (Regnér, 2003) with their current supply chain CO_2 reporting. Evidence of this is illustrated in the manner the strategizing started in the periphery with influences from both the extra-organizational (GHG protocol and media pressures) and intra-organizational (in-house CO_2 reporting behavior) field and the trial-and-error path of testing different tools, measurements and scope of suppliers for reporting CO_2 emissions. Another indicator of this is the view of one of the corporate managers interviewed about her level of involvement in the initiative being limited as long as the magnitude of the initiative is small i.e. in the periphery. That led to the situation in phase 3 praxis, the current state of the initiative, to be partly in the centre with formal reporting, planning, analysis and routines included but still with aspects of the explorative trial-and-error initiatives. The strategy development of the supply chain CO_2

reporting in Entra supports Regnér's (2003) view that new strategy development is best applied in the periphery of the organization while refinement and improving existing strategy development suits best the centre of the organization. The current intermediate position of the supply chain CO_2 reporting strategy in Entra is most reliably dependent upon whom the driver of the initiative is since the identity of practitioners are said to influence the interpretation made of practices and the praxis to be part of that. Furthermore, the driver of the initiative is affected by the motives for working with supply chain CO_2 reporting. Thus, having a set motive to work for enables for the practitioner group to drive the initiative being clear and this in turn enhances the possibility of symmetry between motive, driver and strategizing position.

Communication

Creating a shared motive to work for is a crucial element for strategizing to proceed smoothly and in the intended direction. Despite a shared vision based on collective knowledge (Rasche & Chia, 2009) seemingly in place in Entra on the environmental commitment of the MNC a lack of a specified and shared vision with the CO_2 supply chain reporting initiative is present. Its poor communication during the strategizing episode to the involved parties in Entra is one explanation for the challenges with phase 1 and 2 praxis not fulfilling the intentions set seen by the evaluation results of the reporting since it is the collective knowledge base shared that forms activities performed and practices developed. Expectations set for phase 3 praxis are yet to be evaluated when reporting is fully conducted and analyzed. In general awareness about the CO_2 supply chain reporting initiative is poor among interviewees other than the directly involved ones in the strategizing. Comparison made to the in-house reporting and its communication has been made by interviewees and this is where a gap in the supply chain CO_2 reporting communication performance is evident.

To ensure integration of praxis and its surrounding practices Jarzabkowski & Balogun (2009) argue for varying the means in how different business units in the organization is informed about the initiative. Entra uses differentiated methods for communicating ongoing projects including; intranet, brochures, internal newspapers, presentations, meetings, annual reports and press releases. However, communication about the CO_2 reporting initiative has been limited and no evidence of it being extensively spread internally and externally using multiple methods have been encountered.

Conclusions

Supply chain CO_2 reporting strategy develops over time with an emerging trial-and-error nature starting in the periphery of the MNC with informal and explorative activities and moving towards the centre along with a formalization of practices and praxis present in which a constant risk is lingering for the practitioners of becoming stuck in strategizing.

The transition from one praxis phase to another is where something happens within the strategizing spectra. It is a transition that includes evaluation of present based on the past to form the future. Developing a supply chain CO_2 reporting strategy included the acceptance of control being shifted away from the MNC, an increasing need and ability to externally legitimize the environmental work performed, induced a desire to open up the horizon for a new field, identifying new practitioners to influence the strategizing and resulted in a combined effort to create an improved procedure for supply chain CO_2 reporting.

This journey of strategizing illustrated a clear path dependency in which the separation of internal and external practices adopted shed light on the strategizing in terms of visualizing to what extent practitioners are affected by both internal and external practices a seen in the praxis acted upon beyond that which is described by Whittington (2006). Previous experiences within the area of CO_2 reporting have an obvious impact on the development of CO_2 reporting in the context of supply chains. The existing knowledge base and experiences are transferred with partly success and partly challenges as a result. Identified praxis illustrates a process of trial-and-error efforts towards developing a CO_2 reporting strategy influenced by internal as well as external pressures on sustainability behavior. One explanation of path dependency and transferring need may be that once the initiative to report CO_2 emission from the supply chain was started new ground was discovered and then well known practices from previous reporting were comforting to lean on contributing to unawareness of the risks involved in doing so.

The identified emerging nature of the development of the CO_2 supply chain management strategy over time is evident and the reason for this is demonstrated by difficulties in strategizing on CO_2 initiatives. These difficulties may stem from the context of MNCs huge supplier bases which in its mere size complicate any fluent handling of CO_2 reporting. Another reason may be the unexplored nature of supply chain CO_2 reporting. However, this in

turn are reasons put forward for why practitioners after these experiences revised practices influencing their praxis along the way of strategizing.

The current intermediate position of the supply chain CO_2 reporting clearly originated in the periphery of the MNC as it developed and is becoming more formalized and extended moving towards the centre of the MNCs strategizing. Attention to this mobility is needed in order for practitioners to follow the development with suitable practices making sure the improvement of the strategizing is conducted as efficient and as quickly as possible for the MNC to reap the benefits of this work sooner. Further, a link between motive, driver and strategizing position of supply chain CO_2 reporting strategy is evident. Despite efforts of revision and improvement the CO_2 reporting initiative may still struggle with challenges stemming from an under communicated vision behind the initiative. Hence, communication means used and the level of commitment from top management and from middle management practitioners involved is vital for a coherent picture of the vision to be integrated. With such integration in place the MNC can work efficiently towards that vision without experiencing dispersed views of driving the initiative forward with roles of responsibilities clearly set. Connecting the communication of the vision for the initiative, to who is to drive the initiative forward within the MNC, to affect the resulting strategy procedure is apparent.

This research is to be regarded a contribution to the requested need of more research into climate change and its link to business strategy in a practical and theoretical arena in a context that is still in its early phases. Furthermore, this research has taken the view that concern for climate change and its implication for corporate strategy are evident and not need for legitimizing why such research is conducted need to be clarified in more detail. Moreover, this research has in its mere existence of illustrating a practical example of how a supply chain CO_2 reporting strategy is developed in a MNC using the SAP theory contributed with valuable information for practitioners to take part in and to realize learning in their organizations about the understanding of how such strategies are developed over time and under what circumstances using what resources. Additionally, the challenges and considerations to contemplate in this type of strategizing context are shared enabling practitioners of MNCs to become better prepared and equipped for handling strategy development around supply chain CO_2 reporting.

Suggestions for future research

Limitations to this research open up the possibility for future research and these are presented in the following section.

This research builds on the analysis of the transitions identified in the use of the integrated SAP theory by Whittington (2006). However, a need for further research into the change mechanisms between praxis of internal and external practices and into what extent they affect the transition and whether or not they differ in their effect is one area of research to be developed more to enhance the understanding of particular practices in what order and extent they affect strategizing. Furthermore, this research is limited to one case study and interest lays in making comparisons between supply chains' CO_2 reporting and its inherent strategizing. Opening up research for multiple case studies and interest lays in cross-industrial research as well. Moreover, this research used grouping of practitioners to see their overall roles in the strategizing procedure, but further interest lays in how these groupings use practices differently perhaps the internal and external practices used are interpreted differently by the separate practitioner groups found in an MNC and thereby affect the strategizing procedure in different ways?

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Appendix A.

Interview guide example

Interview - Name of interviewee

Information: Position within Entra, office location and area of responsibility. Example: Sustainability department, Sweden, communication.

Inform interviewee of purpose with research and anonymity of interview in master degree project. Ask for permission to record interview.

Background questions:

1. What is your current position in Entra? What does this job entail in terms of duties and responsibilities? Whom do you report to? Who are the people working closely with you?
2. What have your previous roles within Entra been? Responsibilities, assignments and areas?
3. Follow-up questions of interesting aspects…

Sustainability experiences (mainly focusing on CO2 emission work in supply chain):

4. What is your general view upon Entra work within environmental sustainability?
5. When did Entra start to mention suppliers and their environmental sustainability work in the annual report and sustainability report? Please tell me the story behind this process up until today?
6. How has the content about suppliers and their environmental impact/responsibility for Entra changed over the years that you have reported on it?
7. What Difficulties/Possibilities do you see with this work? From your perspective?
8. Do you know about the collection of CO2 emissions data from suppliers?
9. How involved are you in this work?
10. When did Entra start working on initiatives to reduce CO2 emissions with the supply chain?
11. What was the starting point? Could you describe the process as you perceive it?
12. What was/is the intentions with this type of work? One-dimensional or not?
13. Have the intentions been fulfilled? Why/in what way is this so? Or.. why not/on what grounds?
14. Which methods do you know of that have aimed at reducing CO2 emissions in the supply chain? What is your view on these? In detail please. What is your perception to why they were successful? What is your perception to why they were not successful?
15. Entra state that the way suppliers comply with CO2 emission directives will influence the choice of suppliers used – Is this correct? In what ways and grounds are these decisions taken? Who makes those decisions? Do you believe this to be an effective method? What is the value in such a statement?
16. What people within Entra are/were involved with the CO2 emissions reducing work within the supply chain?

Suppliers' perspective:

17. Did you receive feedback from supplier upon being asked to report this CO2 emissions data?
18. What is your view on how suppliers have received the previous used methods for reducing CO2 emissions in their facilities? What type of response have you received from them? Good? Bad?

19. Do you believe it should be required by suppliers to report all CO2 emissions? How do you propose this reporting should be approached?
20. Are there alternative methods to use? How will Entra motivate the value in such methods? Should Entra act differently towards suppliers?
21. Which suppliers should be included in such CO2 emission reduction initiatives? (minor/major/most energy intensive suppliers?) All suppliers in all tiers? Is this even a possibility?
22. Should you approach suppliers where you have the most impact or greatest influence?
23. Where to draw the line? How far does Entra's responsibility stretch?
24. How is your work affected when new methods for reporting are emerging?

Future methods and ways of approaching:

25. What are the most important learning/reflection that you have acquired/can make over the years of working with environmental sustainability within CO2 emissions and the supply chain?
26. According to your opinion; what are the most essential parts to include in a method aimed at reducing CO2 emissions in the supply chain? In terms of providing value for suppliers as well as internally for Entra? Why these parts in specific? Were there missing parts in methods previously adopted that you have seen the consequences of internally in hindsight?

Internal parts:

27. How has the work with reducing CO2 emissions in the supply chain been communicated? Internally and externally?
28. Do you think you should have communicated it differently?
29. How do you believe is the best way to create engagement within the sustainability work both internally and externally? Where should it be created? Who is responsible to make it work? What value does it have?
30. Where does the responsibility lay within the supply chain department? How to involve local purchasers in the process?
31. Do you believe that there is a connection to purchasing and to work on initiatives to reduce CO2 emissions in the supply chain? If yes – how important is this connection and why? If no – Why does this not have a value? Should there not be such a connection since purchasers are the operational and daily link to suppliers?
32. When this initiative is gradually becoming owned the supply chain department – how to communicate this to become integrated in that department?
33. What is the purpose to work on CO2 reduction in the supply chain?
34. How has this intention been communicated to you? In what forms?
35. What ways do you believe are the best to create sustained engagement within the purchasing units to see the value and be able to fulfill the intentions of these CO2 emissions reducing initiatives in the supply chain as set out?

Wrapping up the interview:

- End the interview and thank for participation.
- Perhaps some more practical matters to discuss? Contact information to other interviewees?
- Can contact me if he/she wants to add anything to the interview data later on.
- Ask weather interest exist in taking part of master degree project when finished.

Appendix B.

Interviewee distribution

Name in thesis	Department	Gender
Corporate Manager 1 (CM1)	Sustainability	M
Corporate Manager 2 (CM2)	Sustainability	M
Manager 3 (M3)	Sustainability/Supply chain	M
Corporate Manager 4 (CM4)	Supply chain (supplier relations)	M
Manager 5 (M5)	Sustainability	M
Manager 6 (M6)	Supply chain (purchasing)	F
Manager 7 (M7)	Industry specific	M
Corporate Manager 8 (CM8)	Human resources & Sustainability	F
Manager 9 (M9)	Industry specific	M
Employee 1 (E1)	Sustainability	F
Employee 2 (E2)	Legal	M
Employee 3 (E3)	Supply chain (supplier relations)	M
Employee 4 (E4)	Logistics	F
Employee 5 (E5)	Supply chain (supplier relations)	M
Employee 6 (E6)	R&D	M
Employee 7 (E7)	Sustainability	M

Appendix C.

List of analytic codes employed

Codes for analysis
Praxis
Practices
Practitioners
Timeline
Extra-organizational field
Intra-organizational field
Change mechanisms