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BALANCED SCORECARD AND SUSTAINABILITY
STATE OF THE ART REVIEW

by

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Balanced Scorecard & Sustainability

State of the Art Review

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Table of Contents

1. Introduction 5
   1.2. Background and objectives of the study 6
   1.3. Contents of the report 7
   1.4. Methodology 7
   1.5. Definitions 8
2. Review of the Literature 9
   2.2. Innovations in Performance Measurement: what are the trends? 9
   2.3. A Brief introduction to some key Balanced Scorecard concepts 10
   2.4. Discussion of possible limitations of the Balanced Scorecard approach 14
   2.5. Discussion over the meaning of 'Social' and it's interaction with the Balanced Scorecard approach. 15
   2.6. References to environmental and social issues by Kaplan and Norton 16
   2.7. Other BSC Authors mentioning issues related to Shared Service Unit Scorecards 17
      Human Resource (HR) Department Balanced Scorecard 17
      Information Technology (IT) Department Balanced Scorecard 18
   2.8. Other BSC authors mentioning environmental and social issues 20
   2.9. Corporate environmental management and social responsibility literature mentioning the BSC 20
      Paper N. 1: Application of the Balanced Scorecard Approach: Identification and Selection of Environmetnal Performance Indicators (S. Johnson, 1998) 21
      Paper N. 2: Using the Balanced Scorecard to Develop Metrics for Sustainable Development (M. Radcliffe, 1999) 25
      Paper N. 3: The Sustainability Balanced Scorecard – A tool for Value-Oriented Sustainability Management in Strategy-Focused Organisations. (Figge et al., 2001a) 27
      Paper N. 4: Good Neighbours: Implementing Social and Environmental Strategies with the Balanced Scorecard. (Epstein & Wisner, 2001) 28
      Paper N. 5: The Balanced Scorecard – a Vehicle for the Greening of Business Meetings?. A Case Study of Telia Nära AB and Skanska Facilities Management AB, Sweden. (Nilsson E., 2001) 29
   2.10. Preliminary Conclusions theory 31
      What is the best architecture for a Sustainability Scorecard? 31
      What are the fundamental issues that must be solved in order for any future framework to be effective? 32
3. Practical Experiences 35
   3.2. BSC companies with little information 35
   3.3. Results from interviews to BSC Companies 37
      Company: Nova Scotia Power 38

Company: British Telecom 39
Company: Skandia 41
Company: Xerox Sweden 43
Company: Novartis 45
Company: SwissRe 50
Company: ABB Sweden 53
Company: Shell 57
Company: Lunds Energi 58
3.4. Preliminary Conclusions practice 60
3.5. What does the practice bring to the theory? 64
Bibliography of the Literature Review (Chapter 2) 66
Annex 1 References by category 69
Annex 2 Today's perceived quality of performance measures 73
Annex 3 List of Indicators from Johnson (1998) 75
Annex 4 Some examples of general and specific EH&S Scorecards from Epstein & Wisner (2001) 77
Annex 5 Criteria for Balanced Scorecard measures 79
Annex 6 Cause Effect relationships case study (Nilsson E., 2001) 80
Annex 7 Some Authors contact details 82
Annex 8 Main Organizations that deal with the BSC 83
Annex 9 List of Companies using the Balanced Scorecard 84

1. Introduction

In the rather recent field of Sustainability literature there are still several basic issues to be clarified: giving a definition of Sustainability that is actionable, understanding how it should be managed, integrated, monitored and valued within a company. Given the very problems in shaping an actionable definition of the Sustainability concept it is no surprise that the management approaches are still somewhat scattered and incomplete. As it happened for quality first (i.e. ISO 9001) and for environment later (ISO 14001) sustainability is also on the way to have its standardized form. This pressure to define and standardize seems to be important to companies since their efforts towards sustainability would become ***auditable*** and could be ***capitalised*** similarly to what happened in earlier times with the environmental and quality standard. This standardization approach to the management of sustainability is, in our view, somewhat incomplete. If companies are to integrate sustainability in their every day operations they must understand how the integration for sustainability will create value for the firm. Failing in this very purpose will only result in an ever more widening gap between *business* and *sustainability*. Evidence of the existence of this gap is how external communication of environmental/social activities is performed by firms today. The environmental/social report, even for leading multinational firms, hardly ever bears an explicit relation with the business strategy. For the same reasons annual reports mostly contain a two page statement ensuring that the company is well behaving towards the environment and society, but not explicit statement on how these actions are creating value for the firm.

The issues of ***integration*** and ***value creation*** are thus essential, in our view, to the success of a management approach that would raise attention to the possible strategic content of actively and effectively managing environmental and social outcomes of firms business activities. Traditional management literature is today indirectly pointing in the same direction. The growing awareness of the importance of the so-called "intangibles" are issues that very closely relate to our research. For example: what is the portion of the brand value of a company that is linked to their environmental and social performance? Or even: How does the way a firm deals with Human Resources add value to the firm? Specifically and limited to these two examples (there would be many more) the growing interest of academics and practitioners around Brand management and Strategic HRM is today a well-documented fact.

If we assume that integration is the way to go, we must then ask ***what to integrate in*****?** The answer is definitely not and easy one. Broadly speaking, sustainability considerations could - and perhaps should - be part of both a strategy formation process as well as embedded in the strategy implementation tools (i.e. management control). These two areas have been going through significant change in the past ten years. Firstly academic work showed how strategies are planned but often not pursued in the practice. Excessive attention to short-term financial results identified as the main culprit for this phenomenon. Financial indicators are deemed to be limited in the information that they can provide to management to take decisions. The tendency toward reaching a strategic objective must also include qualitative (non-financial) indicators. These indicators are however too many and too scattered to be of use to top management as such. Clustering these indicators and reducing their number to a few valued to be of strategic relevance was one of the proposed solutions.

What we just described is the essence of the work carried out by Kaplan and Norton (an Harvard professor and a business consultant) since the early nineties in a strategy implementation tool that has been popularized as the Balanced Scorecard. From the perspective of who studies Corporate Sustainability and Corporate Social Responsibility, the success of this tool is of outmost significance for four main reasons:

1 It advocates that qualitative indicators - *perhaps* including environmental and social ones - can be of strategic importance.

2 By forcing managers to agree on what the firm strategy is might give sustainability managers a meaningful platform to integrate into and easily communicate the added value of their work.

3 By introducing a framework and a methodology to build cause-effect relationship maps allows us to more easily build the business case for environmental and social activities.

4 It widens the horizon of strategy from short-term to medium-long term strategy which for environmental and social investments is often a crucial need.

These and other considerations brought us to the conclusion that this tool was a good starting point to investigate ***integration*** and ***value creation*** of environmental and social strategies in a firm every day business.

1.2. Background and objectives of the study

This report has been prepared by the Centre for the Management of Environmental Resources (CMER) at INSEAD (France) as part of a research project commissioned by the Bundesministerium fur Bildung und Forschung (BMBF). The overall objective of this 2 year project is to understand to what extent the Balanced Scorecard can be a good platform to integrate environmental and social issues in the traditional management accounting systems. The study presented in this report is concerned with the review of the literature and the collection of practicioners and academics experiences in this field without including the contribution of the Academics that worked within the BMBF project.

The applied research part of the project, carried out by the Centre for Sustainability Management (CSM, University of Lunenburg, Germany) and the Institute for Economy and Environment (IWO-HSG, University of St. Gallen, Switzerland) includes an applied research exercise in 8 different firms namely UBS, Volkswagen, BWB, Unaxis, The aim of the applied research part is to test theoretical frameworks and methodologies to the practice. The experience gained in this exercise together with this study will offer a good feed back for the refinement of a tool aimed at framing Sustainability management in a more rigorous and effective framework.

In order to fulfill this final aim we have surveyed the literature and current corporate efforts in integrating environmental management with their Balanced Scorecards. Surveying the practice should tell us to what extent this integration is already happening and what type of problems practitioners face. Surveying the literature will tell us to what extent this tool can solve the integration problem and hopefully some guidelines on how it would work in practice. Additionally the information contained in this report can be of use to decide on what direction (if at all) future research should take in order to be theoretically significant and practically useful.

A preliminary version was presented at the workshop promoted by the Universities of St. Gallen (Switzerland) and Lunenburg (Germany) in which the first year results of their work was being presented to the companies. The workshop was held in Wolfsburg (Germany) on the 23rd of June 2001. In addition to this work an analytical paper (Orssatto, Zingales & O'Rourke, 2001). *The Environment and Socio-related Balanced Scorecard: Towards a conceptual framework*) was prepared and presented at the 10th annual conference for Business Strategy and the Environment held in Leeds (UK) the 10th and 11th September 2001. The analysis carried out in the above mentioned paper has been integrated in this document.

1.3. Contents of the report

The objective of this work is to discuss experiences both in literature and in the practice of the interaction between the Balanced Scorecard (BSC), an emerging strategic management tool, and the environmental and social strategies of firms.

Chapter 1 serves as an introduction and a brief description of methodology and sources of the information.

Chapter 2 reviews the literature for references on the interaction between environmental and social strategies and the BSC. This has been carried out both in management literature as well as in environmental/sustainability literature. This Chapter contains its own conclusions that stem from the literature discussion..

Chapter 3 described the selection process of the companies that were interviewed and the interview results. The conclusions of this chapter discuss mainly what matching could be found between what was found in the literature and what is being done currently by these firms in the practice.

Annexes 1 to 6 contain tables taken from the literature with lists of indicators and criteria that might be of interest for who works in the field of Sustainability. **Annex 7** reports their names and contact details. **Annex 8** reports information found on the web on institutions around the world that specifically deal with the BSC. **Annex 9** contains two tables. Table A9-1 is a list of companies that were reported by the literature to be using the BSC. Table A9-2 is a longer list of companies that supposedly is using the BSC.

1.4. Methodology

Four main activities were carried out in order to fulfill the research objectives. First a ***literature review*** from English language databases including more than 3000 journals was set to find matching key words such as "Balanced Scorecard" and "environmental/ social strategy/ management/ communication/ reporting/ performance evaluation". The databases searched include ABI inform, Proquest and Science direct. A list of companies implementing the BSC was created (based on the literature and web search). From this list ***9 organizations*** known for their investment in social and environmental strategies were selected for subsequent interviews. Within these firms the research team ***interviewed key managers*** from the environmental department and the BSC implementation team. The interviews had to be done in two rounds. As we will see in the interviews part, the process of building a BSC varies widely from firm to firm. Additionally the actual results of this process (i.e. contents of the BSC) are not so easy to explain

without knowing the business and the firm very well. We have tried to reduce these problems by going back to the firms after the first round of interviews with more specific questions or to try and get a hold of additional people that might clarify issues previously left unexplained.

Although not completely solving the problem, this strategy has proven to be a winning one. Going back to the interviewees a second time allowed us to concentrate on issues that we could see as fundamental to understand, or to ask them to specify a particular issue that they had raised but had not been completely elaborated.

1.5. Definitions

We realize there are some issues that relate to the definition of the term Corporate Sustainability that have not been solved up to now. We will not tackle this problem in this report. Rather than talking about Corporate Sustainability we will talk about Corporate Environmental and Social strategies. As a contribution to better grasp the differences and the commonalities between these two categories descriptions, examples and analysis will be kept separate throughout the report

We define ***environmental strategies*** as a series of actions, programs, management systems that improve the environmental performance of a company. By improvement of environmental performance we mean a decrease in environmental impact from company operations and/or products. Similarly ***we define social strategies*** as a series of actions, programs, management systems that aim at the improvement of the quality of the relationship between the company and its social stakeholders such as employees, neighboring communities and society at large.

When speaking of departments in corporations we will speak generally of environment/sustainability departments. This definition relates to the support functions sitting at Corporate level that are responsible for understanding the corporation environmental and social impacts and reducing them in the smartest possible way. We need to specify how both environmental and social responsibilities are often allocated very differently in different firms. In other words, these so-called environmental/sustainability departments are often only theoretical constructs that in real life include many different functions in the firm (both at corporate and at business unit level), each one dealing with one specific aspect or task. Again defining which are departments dealing with social impacts is even harder than for the environmental ones and we prefer not to get into this discussion now. Nevertheless, and only for the purpose of orientation of the reader when mentioning the championing of 'social' actions in a company we are mostly thinking of departments like Public Relations that mostly deal with 'social' stakeholders like local, national and international authorities or Human Resources that would deal more with internal issues related to employees conditions such as wages, capacity building and knowledge management.

2. Review of the Literature

The main objective in this Chapter is to review the existing literature discussing the integration of environmental and social indicators in the BSC. To do this we first need a good grounding in the BSC literature, of which the departure point is from the management accounting and/or strategy implementation specialists. On the contrary from the point of view of environmental management the Balanced Scorecard would be of interest if it has the potential to surface the value creation of these activities in firms. An extensive list of the literature can be found in Annex 1. To facilitate the research of particular topics the literature has been divided in different categories according to the general content of the article (or book)[1].

2.2. Innovations in Performance Measurement: what are the trends?

The first step in our research was to understand what were the issues at stake in the Performance Measurement/Management Accounting arena. We have found the article by Ittner et al. (1998)[2] to be serving this purpose very well. Two main findings of this paper are important for our purposes. The first one is an apparent lack of satisfaction of the companies for their management accounting systems. For example the authors mention a 1996 survey carried out by the Institute of Management Accounting (IMA) with US firms where only 15% of the surveyed firms measurement systems supported top managements business objectives well, while 43% were less than adequate or poor. As a result about 60% of the surveyed companies were found to be carrying out major overhauling of their management accounting systems[3]. The second finding was a definite distinction of the new systems into two different categories. The first category entailed 'improved' financial measures such as *economic value*, the second – defined as *balanced scorecard* type – would on the contrary include also non-financial indicators in an attempt to give more balance and forecasting power to the performance assessment system.

Within the category we find economic value measures such as Earnings per Share and Return on Investment (ROI), Economic Value Added (EVA) and Cash Flow Return on Investment (CFROI). The first two measures have been widely criticized for not taking into consideration the cost of capital and for being influenced by external reporting rules. The other two measures (although there are many more) try to tackle this very problem. For example EVA - defined as adjusted operating income minus capital charge - assumes that a mangers actions adds economic value only when the resulting profits exceed the cost of capital. Up to 160 adjustments built within the EVA calculation represent the effort to eliminate or reduce the distortions created by external accounting rules. The authors take no stance on which one of the improved financial measures such as EVA or CFROI is best. Apparently the discussion is ongoing even within the Academic circle. Nevertheless they underline how the growing use of EVA and other economic

[1] Refer directly to Annex 1 for a description of the categories and reasoning behind it.

[2] Christopher D. Ittner, David F. Lacker (1998). Innovations in Performance Measurement: Trends and Research implications. University of Pennsylvania

[3] Some surveys on the use of financial and non-financial measures can be found in Annex 2

measures how little evidence is available in the research arena that proves them superior to the traditional accounting measures.

On the contrary, instead of using 'improved' financial measures, some firms have started to use 'balanced scorecard' systems that 'complement' the financial measures with non-financial ones taken from at least three other categories: customers, internal business processes and learning and growth[4] (e.g. Kaplan and Norton 1992). Two 1995 studies[5] (Fisher 1995, Brancato 1995) have identified three main reasons behind the utilization of non-financial measures in firms (1) perceived limitations in traditional accounting-based measures (e.g. too historical, lack predictive ability, reward short term behavior, not capturing changes until too late etc.) (2) Competitive Pressure (e.g. need of understanding value drivers leading to success in new – and fast pace changing- competitive environment) (3) Outgrowth of other initiatives (e.g. typically the implementation of TQM programs showed that available aggregate accounting data was not providing the detail of information needed to act timely on process issues and customer satisfaction). A survey among 221 organisations in USA (Business Intelligence Survey, 1998) showed that 54% of them is using the Balanced Scorecard as their main strategic management tool.

Some authors have already tackled the issue of integration of corrective factors in the improved financial measures (see Schaltegger & Figge 1999, Figge & Schaltegger 2000, or Epstein & Young , 1999). In this report however we will only explore the implications of the research stream that uses Scorecard approaches and it's interaction with environmental and social strategies/investments/actions. This decision is mostly driven by the intuition that performance measures that allow the use of non-financial indicators and provide them with the same 'weight' of the financial ones will be much more useful to understand *whether* and *how* environmental and social strategies can contribute to business strategies.

2.3. A Brief introduction to some key Balanced Scorecard concepts

The Balanced scorecard was developed to answer to the shortcomings that financial measures seem to have for an effective deployment of strategies by organisations. Although a thorough review of what the Balanced Scorecard approach is would be beyond the scope of this study[6] it is quite important that we introduce some concepts that we will be using throughout this study.

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[4]Kaplan and Norton (1992). The Balanced Scorecard – Measures that drive performance. Harvard Business Review 70 (1): 71-79.

[5] Fisher, 1995. Use of non-financial performance measures. In Readings in management Accounting, edited by S.M. Young, 329-335. Englewood Cliffs, NJ: Prentice Hall.

Brancato, C.K. 1995. New performance measures – A research report. Report Number 1118-95-RR. New York. NY: the Conference Board.

[6] See the two books by Kaplan and Norton 1996, 2001 edited by Harvard Business Publishing.

The first basic concept is the idea of *adding three additional 'perspectives' to the financial one*. If in the past (and today as well) the companies are managed following exclusively financial goals Kaplan and Norton proposition is that other non-financial goals are also important. These non-financial goals however need to be clustered and rationalized in order to be useful. Organisations have in fact been using non-financial indicators (e.g. Key Process Indicators – KPIs) for quite some time (e.g. quality movement in the 80´s). What is lacking in the current approach is a focusing exercise on what is really important and consequently elevating these indicators at the same level of the financial ones. As shown in Fig. 2.3.1 Kaplan and Norton cluster these non-financial indicators in three new perspectives: the customer perspective, the internal-process perspective, the development and growth perspective. We should see each of these perspectives as an additional instrument where we can control a firms' performance in areas that are different from the financial one. In each of these perspectives the firm will define objectives (what to achieve), indicators (measures of that objective), targets (what score wants to be achieved and by when) and actions (how to do it). The rationale behind the choice of these perspectives is in fact quite straightforward. A firm decides a financial target (in the financial perspective), then establishes how the customer should be seeing the firm in order to reach that target (e.g. measures of customer satisfaction in customer perspective), then defines what type of internal processes (e.g. timely communication between marketing and operations) need to be designed or improved in order to reach that result (internal-process) and finally what type of know-how is needed to do the job and how to sustain it in time (development and growth perspective).

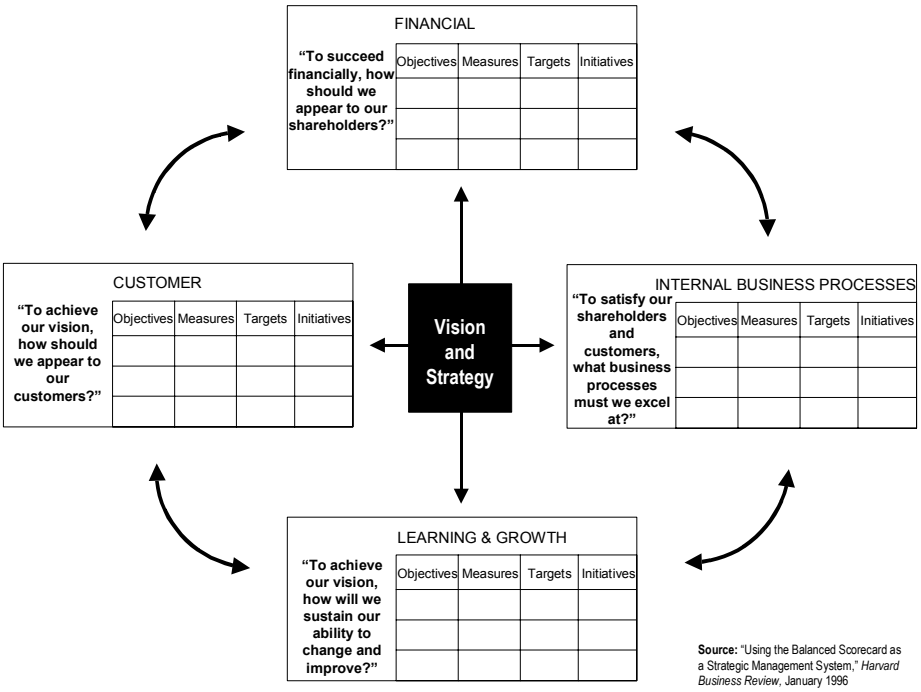


Fig. 2.3.1 The Balanced Scorecard (Kaplan and Norton 1996a, p.9)

The second important concept is the one of *leading and lagging indicators*. The lagging indicators are measures that tell us something that has already happened. Thus, if a firm reacts on that measure it will be already late. The classic example of lagging indicator is the financial one. Increase in sales only tells a firm that it has performed well last year but gives no insight on

whether that can be replicated this year. The leading indicators on the other hand, tell me something about the future. If a firm is performing better than usual in the customer satisfaction index, provided that the indicator was designed correctly, it is likely that the firm is on the way of having another good year of sales. There is a leading-lagging relationship also within each perspective. For instance, if a firm wants to achieve customer satisfaction (lagging indicator of customer perspective) and knows that it is directly proportional to the quality of the relationship that the firm entertains with the customer then something of the kind of a 'quality of relationship index' tells me if I will achieve the desired level of customer satisfaction (leading indicator in customer perspective).

The third important concept are the *cause effect relationships* which directly stem from the leading-lagging indicators discussion. If we have a number of indicators interlinked in a way that the present performance of one indicator is an indication of a future good performance of the other then we have built a cause-effect relationship map. Experience in firms in the last 10 years shows that mapping these relationships will show evident gaps in the way strategy is being implemented thus helping the firm to understand how their actions in different fields (e.g. marketing, operations) are creating value.

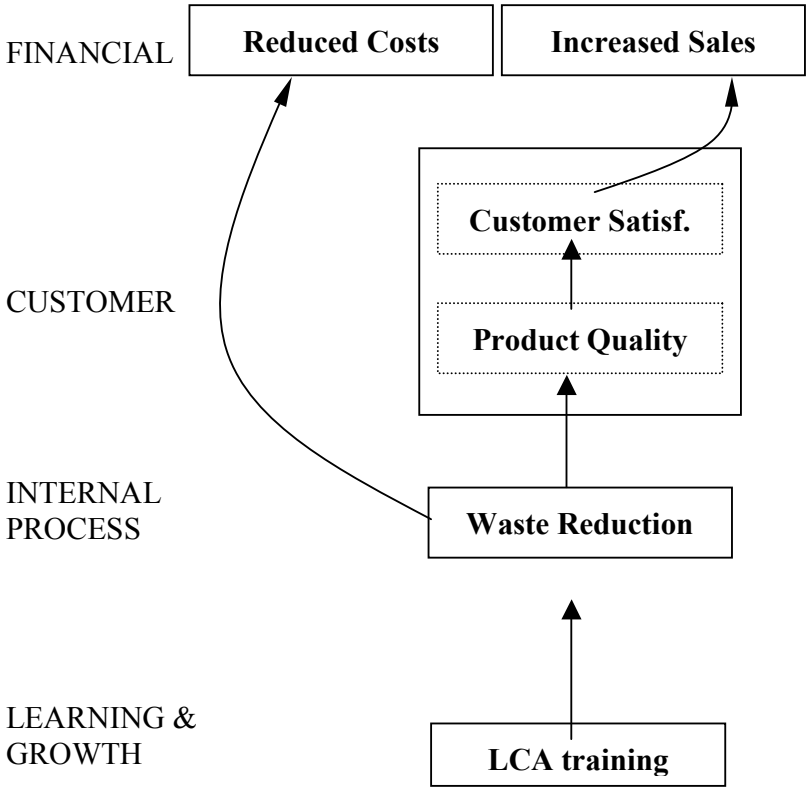


Fig. 2.3.3 Example of Cause-effect relationships and leading/lagging indicators

The fourth is the idea of *cascading the Balanced Scorecard through the organization*. As shown in Fig. 2.3.4 typically a multinational firm with several business units will create a Balanced Scorecard for the corporate level first and then build the business unit level scorecards to the corporate one. The Strategic Business Units (SBUs) will take the objectives (and sometimes even the indicators) in the corporate scorecard as the starting point and understand how can they best

contribute to the corporate targets. Then subunits will then take the SBU goals and target the indicators that they can influence. This cascading for some organizations will reach, for example through a classic Management By Objectives (MBO) system, all the way to the individual level.

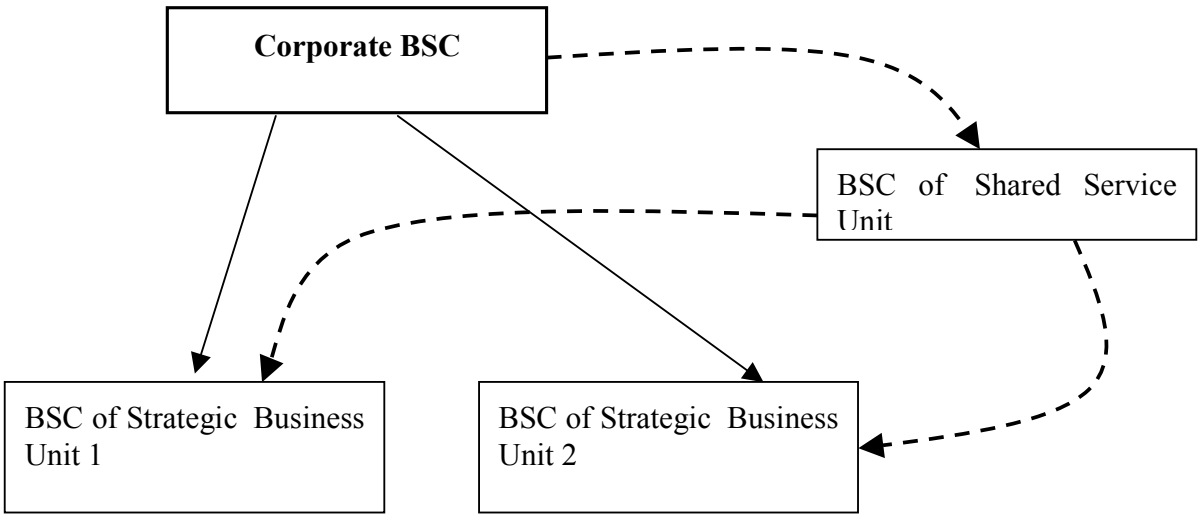


Fig. 2.3.2 Cascading the BSC

The fifth, and final concept is what Kaplan and Norton call the '*double loop learning' (*see Fig. 2.3.5). Firms that have developed a BSC should use it both to control the success of the pre-defined strategy (single loop learning) as well as the platform of discussion where the strategy in itself is challenged by the new information acquired from the business environment (double loop learning).

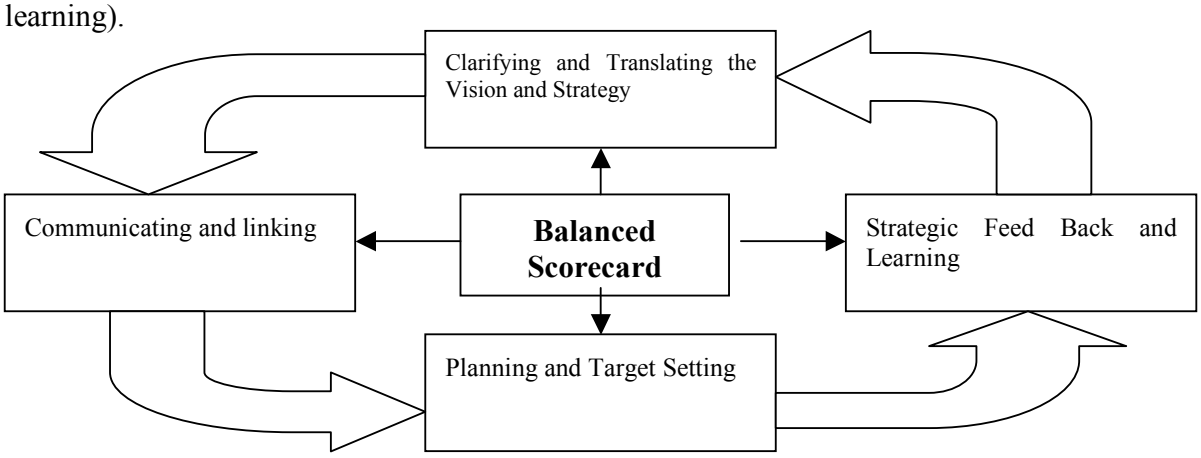


Fig. 2.3.5 Double loop learning process. (Kaplan and Norton 1996a, p.289)

This feed back process would go through 4 phases (i) clarifying and translating vision and strategy, which basically entails the whole 'development' of the BSC (ii) Communicating the BSC and linking it to personal goals (iii) Design plans and define targets (iv) Strategic feed back and learning. The importance of this features lies in the assumption that simply controlling a pre-

defined strategy and treating departures from planned results as 'defects' is no longer a suitable way of managing strategy. In information age the strategy ideas can also come from the ground floor since it is impossible for the top management to grasp entirely the complexities inherent in their business environments.

2.4. Discussion of possible limitations of the Balanced Scorecard approach

The apparent success of the BSC should not detract us from identifying the weaknesses intrinsic to this management tool. When analysing the appropriateness of BSC for the management of social and environmental issues by firms, as this study intends to do, any limitations of this approach should be considered. Curiously, for reasons that still require research, the BSC has not been the target of extensive critique. The work of Lipe *et al*. (2000) constitutes a rare example in this direction. They suggest that *judgmental effects* can limit the effectiveness of the BSC. Such effects relate to the idea that the evaluation, by managers, of the performance of a Strategic Business Unit (SBU), will, for instance, prioritise financial over non-financial indicators simply because these are the common indicators across various SBU. In other words, the existence of BSC *per se* may not detract managers of prioritising financial over non-financial indicators − in our case, best represented by the ones related to social and environmental performance. Although this issue might, at first glance, be seen as minor elevating operational performance indicators to similar status of financial indicators in the implementation of the firm's strategy is exactly what the BSC is expected to address. Furthermore, non-financial indicators are normally can be characterised as *leading indicator* − they inform managers about the strategic directions of the firm. The very nature of these indicators makes them specific to an SBU; after all, they are expected to capture the peculiarities of the Unit. In sum, if a corporation continues to prioritise the financial over non-financial indicators in the implementation its strategy, the *balance* of the performance measurement constitutes merely a theoretical exercise.

The BSC apparently satisfies the claim of being an efficient control tool for *strategy implementation*. According to various authors (Mooraj *et al.* 1999, for instance), the BSC can certainly help managers to integrate the various organisational functions towards pre-defined strategic goals. Problems may arise, however, when one questions the nature of *strategy formation*. In simple terms, a firm may effectively implement an *equivocated strategy*. Such equivocation may be a result of a limited scope of the external environment provided by the BSC. Stakeholders, other than customers and shareholders are the best example of such limitation; they not considered in the four areas of action of the BSC (Atkinson & Waterhouse 1999). Kaplan and Norton (1996) invite companies to add other perspectives, if this proves to be important for them. However, no substantive criteria are given to indicate the approach that an organisation should follow in the case that managers are supposed to enlarge the number of perspectives. For instance, when should a firm consider the government as an important stakeholder to be included in its Scorecard? Overall, what are the criteria that should be used to define the level of importance of each stakeholder? Hence, it is necessary to question not only how effectively the strategy has been implemented but also the criteria used for its definition.

The relative importance of stakeholders encompasses a more generic limitation of the use of BSC in strategy formation within the context of the management of social end environmental issues by firms. According to Reinhardt (1999), the definition of corporate environmental strategy should primarily consider the structure of the industry in which a firm operates. In this respect, does the

BSC help managers to grasp environment-related opportunities that are specific to the industrial sector? To what extent could the BSC help managers to analyse such structural conditions? Internally to the firm, competition for resources among the various departments can also represent a limitation of the BSC. The effectiveness of an environment-related scorecard ultimately depends on the balance of power among the various organizational actors during the strategy formation stage (Orssatto & Clegg 1999). For instance, if the countervailing power of the environmental department of a firm is relatively low, the implementation of the BSC does not represent any guarantee that environmental issues will be taken seriously by the organisational leaders. In this respect, one could even say that the BSC depends primarily on the balance of power in and around the organization (See: Mintzberg 1984).

Since an Environmental & Social department constitutes a specific structural arrangement within a firm, the next section presents its main characteristics. This structural arrangement is expected to influence the creation and implementation of the environment and socio-related Scorecards.

2.5. Discussion over the meaning of 'Social' and it's interaction with the Balanced Scorecard approach.

The first problem that we encounter in looking for these references is the lack of definitions on what 'social' issues really are. The environment and social spheres have much in common, due to the fact that they are often not internalised by organisations in a market driven economy. However, social aspects are often seen by practitioners as 'softer' than environmental aspects, therefore being more difficult to quantify[7] (Epstein 2001: 34). This happens, in part, because theories of 'social performance' already overlap with: (i) What a company does – provide goods and service to people; (ii) Who it does it for – customers, shareholders, staff, etc. and; (iii) How it does it – by producing resources and management techniques though labour.

The Balanced Scorecard already displays a number of social intangible assets, which are demonstrated in numerous case studies that directly contribute to the financial bottom line. Inclusion of value-drivers, such as the *customer* perspective, *learning and growth* (of human resources), *internal business processes* (satisfaction of shareholders and customers), and even *financial* performance (satisfaction of shareholders and management) already suggest a social agenda and imply why the BSC was named 'balanced' in the first place. These socially related dimensions were already assigned an important role in the BSC, before any discussions of sustainability made it on the agenda.

However, there are some immediately visible gaps. For instance, when one tries to include other stakeholders' concerns, such as impacts on local communities, the impacts of products and services made by the company, the differences in workplace conditions found in large multi-national companies, the neatness of the four-tiered system is somewhat disrupted.

Epstein (1999; 2000) addresses this problem by suggesting the addition of more (social) indicators into the existing structure of the BSC. Such indicators include: employee turnover rates, workforce diversity, training budgets, community support and donations, sales of ethical products, and increased sales as a result of improved reputation. The additional indicators are

[7] It could be argued that it is not that financial and environmental accounting techniques are more objective than social ones. Rather, the entity that they account for (i.e. money, the environment) is just more easily 'controlled'.

spread over all four of the traditional BSC categories. However, Epstein does not articulate a framework for how and why they are allocated, nor what types of firms should account for the different social indicators.

Figge *et al.* (2001), on the other hand, propose that some social indicators should be internalised to the existing BSC and others relegated to a new fifth dimension the BSC (as described in p. 27). This is argued on the basis that such costs still remain externalised to firms in current economic models and should, therefore, be treated separately. Since no specific examples are given (i.e.: what would be considered an internal/external social aspect), it is difficult to comment on the efficacy of this approach.

A firm's impacts on local communities can serve as an example to demonstrate why the above propositions are problematic. Although companies are currently fond of reporting on their positive impacts on local communities via, for instance, their philanthropic support of various community associations, the negative impacts is more difficult to measure and report. Additionally, what it is seen as positive and negative is a subjective judgement, which necessarily complicates the 'social' (and the environmental) agenda. The BSC does not assist in clarifying the differences in perspective of corporate behaviour found in reality both internally and externally to the firm. The employment created for hundreds of people in a mining town, for instance, could be measured against the potential loss of revenues coming from decreased tourism activities in the region. Who should make such a decision, and on what grounds? Where do we draw the line on governance for external aspects, both now and in the future? Could firms benefit from tools such as the BSC to manage these boundaries?

Groups such *AccountAbility International*[8] have responded to this problem by relying on *process standards* to ensure accountability, rather than specific social performance indicators[9]. However, such standards themselves do not take into account the differences in corporate culture. Like other process standards, they tend to assume the existence of a particular type of measurement of culture and management system within firms, which simply may not exist. Future research should explore whether this limit also apply to the BSC?

2.6. References to environmental and social issues by Kaplan and Norton

Kaplan and Norton mention environmental and social issues in several instances in their later work. Firstly, when discussing the need for a fifth perspective to deal with stakeholders other than shareholders and customers or employees (i.e. government, local authorities, environmental NGO's, consumer associations). Kaplan and Norton suggest that stakeholder objectives to be included only when vital to the success of the SBU strategy (Kaplan & Norton 1996a:34). Secondly, some environmental and social indicators emerge as part of companies' corporate scorecards that relate to the *internal process* perspective (Kaplan & Norton 2001:38). Finally, the demonstration of 'good corporate citizenship' is mentioned when describing the concept of

[8] Accountability International has the AA1000, a voluntary accountability standard launched in 1999. It is a process standard which describes the way in which a company can measure, manage and communicate social performance with a particular emphasis on stakeholder engagement. See (www.accountability.org.uk)

[9] For example, processes are set up to make sure that decisions and impacts made by the company are discussed with the communities affected in a transparent fashion.

strategic themes, which serve to focus attention to specific interest areas throughout the organisation (Kaplan & Norton 2001:78). Specifically these themes allow corporations to communicate particular issues of interest to their several Business Units or controlled companies. Despite the fact that some environmental and social issues emerge in several occasions, Kaplan and Norton seem to make no specific attempt to address them.

Apart from the above mentioned instances Kaplan and Norton are implicitly giving guidance on how to manage environmental and social issues within a firm when they discuss the issues related to building a Shared Service Unit (SSU) Scorecard. In fact SSUs (e.g. IT, HR) are expected to have similar role as those performed by the environment/sustainability department in firms. Kaplan and Norton (2001:191) define SSUs as the internal units of an organisation that provide services to different Strategic Business Units (SBUs). According to Kaplan and Norton, SSUs usually are not in direct contact with external customers, unless they generate revenue by providing the same service to other companies. Examples of SSUs include departments of information technology, human resource management, and research and development. Two straightforward situations are listed by the authors, which specifically relate to the design and implementation of an SSU-Scorecard. If the organisation has already developed a BSC for all its strategic business units, then the SSU should view itself as a partner in the process, closely collaborating with the performance setting of these units. On the contrary, if the organisation has not yet developed a BSC anywhere else in the organisation, the SSU should view itself as a business-in-a-business, and the various strategic business units as its customers. In this case, an SSU-Scorecard is based on similar principles of a contractual relationship with an external client.

Kaplan and Norton describe these two scenarios apparently for categorization purposes only. The single difference between the two scenarios relates to the articulation of strategy. For a company that has already implemented the scorecard in its SBUs, the strategy implementation process should be more clearly understood by the participants of that unit. Moreover, in this scenario, the contribution of the SSU to the overall performance of the organisation may be formalized more easily. This may not be the case for a firm that has not yet implemented the scorecard. The authors do not go any further in describing the complexities involved in building an SSU-Scorecard.

2.7. Other BSC Authors mentioning issues related to Shared Service Unit Scorecards

Since, the corporate environmental/sustainability department can be broadly defined as a Support Function, we surveyed also literature that tackled the problem of SSU Scorecards. Discussing the issues, the approaches and the solutions for these types of departments can form the basis for a better pitch for a future environmental or social Balanced Scorecard. In the following sections, the work on an HR Scorecard and an IT Scorecard are described.

Human Resource (HR) Department Balanced Scorecard

It is useful to look at work undertaken by Becker *et al.* (2001) to develop a SSU-Scorecard for a specific organisational function: The HR Department. Despite using the BSC framework for the various SBUs, the authors suggest that the four traditional perspectives are not well suited to the

design of an SSU scorecard. They propose four different perspectives as better representing the 'balance' of the HR function activities: (i) The core employee capabilities that will leverage HR role in the overall strategy of the firm; (ii) The *HR system*[10]; (iii) The extent to which the HR system is aligned with firm strategy, and; (iv) The efficiency[11] with which the employee capabilities are generated (Becker *et al.* 2001:53). Similar to the SBU-Scorecards, each one of these perspectives will require the development of their own set of measures. Furthermore, the link with the SBU-Scorecards, which the authors do not analyse further, is insured by the original choice of employee capabilities that should relate to the SBU strategic objectives contained in the SBU Balanced Scorecard and its four traditional perspectives.

In sum, the authors recognize that defining the right measures is not sufficient. Rather, it is necessary to identify the *systems* that relate to these measures and how they interact. The new outlook proposed for the HR Scorecard and its focus on systems represent an important step towards grasping the complexities inherent to the successful management of a SSU. Indeed, it could be said that this approach differs substantially from the one proposed by Kaplan and Norton, and represents a step forward in the design and implementation of BSCs for support functions.

Lessons drawn from the design and implementation of the BSC for SSUs such as HR are relevant for the purposes of this report because Environmental/Sustainability (E/S) departments can also be classified as SSUs. Nonetheless, two main differences between a (traditional) SSU, in the moulds proposed by Kaplan and Norton, and an E/S department should be outlined. The first relates to type of customers attended by E/S department: while SSU units attend mostly internal clients, the E/S department has customers both inside (various SBUs) and outside the company (various stakeholders). This role is indeed unique when compared with a traditional SSU, such as a Research and Development (R&D). The second difference relates to the strategic position the E/S might have within the firm. Seeking long-term business sustainability might entail a radical shift in the corporate strategy towards more environmentally and socially friendly practices. In this respect, if the E/S department is expected to have an input into the *strategy formation* process, its position is expected to be significantly different from the one assumed by a traditional SSU. Nevertheless, the guidance provided by Kaplan and Norton, as well as the exemplification of an HR-Scorecard by Becker and associates can be used to build the environment-and social related Scorecard in service-areas that the E/S is expected to deliver.

Information Technology (IT) Department Balanced Scorecard

The interest for this case study (Dutta, Van Wassenhove & Manzoni, 1994) is the extremely precise articulation of how and why a Balanced Scorecard for a support function was prepared. Although we know that some differences do exist between the SSU as defined by Kaplan and

[10] The *HR System* is defined as the package of policies and practices built by the HR department that supports and reinforces capabilities of the workforce to generate strategic HR deliverables. It is by all means an HR management system. As in any management system, a set of measures – checklist of leading indicators – must be established to assess its effectiveness over time (Becker *et al.* 2001:13)

[11] Efficiency measures are related to the 'cost' of implementing certain HR strategies. These measures are important to balance the other three 'strategic' perspectives by allowing the HR manager not to loose sight of the costs.

Norton (e.g. IT, HR) and Environmental/Sustainability departments. Nevertheless a few lessons can be drawn from this experience.

In short the IT department of the sixth largest insurance company in the UK (Friends Provident) decided to become more 'customer focused'. It's customers were the different SBUs of the company ifself. Retrospectively the change of attitudes, from process to customer focus, went through three steps. The first was the establishment and the tuning (i.e. monthly or quarterly, through people or through questionnaires etc.) of the communication channels between the IT department and the different SBU. This was assisted by the development of the customer feedback measures and a more condensed format for internal communication. They chose a star symbol to represent the BSC measures, each branch being a customer and the colour indicating level of satisfaction (green = very satisfied, yellow = partially satisfied, red = non satisfied). The second step was to link internal processes, employee performance and satisfaction to these measures. They realized that knowing about the outcome (lagging indicators in the customer perspectives) did not help them to understand where to act to improve their performance. Focusing on the enabling core processes and employee motivations and suggestions produced a set of 'leading' indicators that were added to the Balanced Scorecard. The third and final step was to add a graph on the Balanced Scorecard showing trends. Trends were important for appreciating whether overall performance was improving. They had decided in fact to report on the Balanced Scorecard the worst performance (i.e. if one customer would report 8 greens and 1 yellow they would display a yellow), but in the long run that was demotivating for the employees. Trends that showed that a 'green' was about to show up increased interest and excitement around the Balanced Scorecard.

Interestingly the IT department of Friends provident decided not to link performance reviews to these measures. They thought that employees might be tempted to change the numbers instead of reporting them as they were. This effect would've defeated the aim of the BSC to find out areas of improvement. Also they did not link their performance to the division performance directly because they thought that would depend on too many variables and not necessarily IT performance being the predominant one.

Like the IT department, the Environment/Sustainability department might have, apart from its other responsibilities, to issue services to the various SBUs. For example LCA expertise might sit at corporate level and be sold to the different SBUs. Similarly EMS and Health and Safety experts at corporate level might be the gathering point of experiences coming from the different SBUs, thus constituting an important knowledge centre within the firm. For these applications it might be useful to approach the problem from the customer satisfaction of the SBUs. Nevertheless we must remember that in the case of Environmental/Sustainability managers they also fulfil the need of collecting feed back from the 'external' customers and that traditionally this has been the driver for environmental improvements in firms. Complaints from stakeholders (government, local authorities or communities etc.) has originally forced corporate offices to deal with their environmental and social performance which only later proved to be more and more profitable (e.g. a way of individuating inefficiencies in the system). Still today, the value of environmental improvements, unless stemming as a side effect operational improvements, is of main concern for corporate offices that need to communicate and at times literally enforce good practices in the various SBUs. We can already now start to appreciate the difficulty of the issues that must be discussed. For instance: should a firm monitor all its stakeholders? If not, how to choose the strategic 'core' ones? What type of relationship will insure a relevant feedback? How

will the BSC framework help the corporate offices promote and control environmental and social improvements in the SBUs?

Further more, the decision of the IT department to dislink their performance from the SBU performance looks reasonable and it simplifies matters significantly. Nevertheless, building the case for environmental and social investments means understanding their effect on the SBU performance. Rather than asking whether or not these two things should be linked, we prefer to pose the questions 'to what extent' and 'to what level of detail' is it necessary or possible to do so.

2.8. Other BSC authors mentioning environmental and social issues

In his 1996 book on the Balanced Scorecard, Brown (1996) suggests the use of an aggregated indicator at the corporate level scorecard. This index would be a weighted average of several environmental indicators chosen. Although Brown does not enter into the detail of what the indicators weightings should be based on (political, social, environmental or business impact) in his view this aggregated indicator allows top management to monitor the quality of the company relationship with its stakeholders without being too burdensome (Brown 1996:107-108). This approach would somehow be similar to the 'additional perspective' option proposed by Kaplan Norton with the only difference that instead of an entire perspective we would have a single aggregated environmental indicator in the process perspective of the corporate BSC.

In their book 'Performance Drivers: a practical guide to using the Balanced Scorecard' Olve, Roy and Wetter (1999) discuss the need for additional perspectives to be added to the four traditional ones. As examples of additional perspectives they mention companies such as Skandia, ABB or KappAhl that have added a human resource focus. Within this framework they discuss the idea of adding other relevant stakeholders and/or a specific environmental perspective. In general they argue that it is more useful to give a broader interpretation of the original four perspectives rather than to create new ones. They believe the latter to be a better option because it would retain one of the major advantages of the Balanced Scorecard: its compactness (Olve et al. 1999:120). By approaching this issue in such a way it is also unlikely to have two perspectives that could hold a similar content. In fact a company with a human resource focus might find out that there is not much left to fill the learning and growth perspective, since both these focuses would contain issues related to training and capacity building (ibid:121-122). For reasons exactly analogous they recommend environmental measures to be fitted within the four perspectives just as IT measures do, even though, based on their observation, more often the environmental measures such as emissions from production or effects of product use would be part of the internal business perspective (ibid:206-207).

2.9. Corporate environmental management and social responsibility literature mentioning the BSC

Up to June 2001 seven articles coming from the domains of *corporate environmental management and social responsibility* were found to mention the BSC[12] to different levels of detail.

Author	Year
Bennet & James	1998
Johnson S.	1998
Rikhardsson Pall M.	1999
Radcliffe M.	1999
Figge et al.	2001
Epstein & Wisner	2001
Nilsson	2001

For instance the papers by Rikhardsson P. M. and the one by Bennet & James are not at all focused on the Balanced Scorecard. Rikharsdsson discusses information systems for environmental accounting while the second Bennet & James evaluate the usefulness of the new standard on environmental performance measurement of the International Standard Organization (i.e. ISO 14031). Both authors however believe that the ISO 14031 is the environmental version of the Balanced Scorecard. Although this seems to be related to the idea that ISO 14031 would include financial indicators (as well as environmental and social) there is no clarification over what these authors mean by this statement.

We have decided to discuss the remaining papers one by one mainly because the words and the concepts used in each paper differ. We have found that a great deal of interpretation was necessary in order to try to understand what the authors were driving at. The thread of this interpretation work is kept as such in this study as a way to surface issues 'along the way'. We have also kept a very clear distinction between what the author states and the way that we understand it. A clustering of common issues will be done in the conclusions of this literature review part of the study.

Paper N. 1: Application of the Balanced Scorecard Approach: Identification and Selection of Environmetnal Performance Indicators (S. Johnson, 1998)

Johnsons' (1998) contribution is substantial as he takes the perspective of a corporate environmental manager that needs to justify investments in environmental strategies to top management. He argues that ISO standards (and particularly the ISO 14031) are of little help in this task because these systems were only designed for the development, measurement and monitoring of Environmental Performance Indicators (EPIs). On the contrary Johnson finds the Balanced Scorecard a useful framework to more simply explain the need of these investments to top management. To this end the author suggests enlarging the customer perspective to include also 'other stakeholders' such as Government or Environmental NGO's as well as explicitly include 'employees' in the Learning and Growth perspective. This approach is similar to what Olve et al. have suggested in their book (i..e to broaden the meaning of the existing four

[12] Details about Authors' name, affiliation and contact details can be found in Annex 2

perspectives but not to create new ones). He develops a 'Generic Balanced Scorecard Model of Environmental Performance' that is reported in Table 2-1.

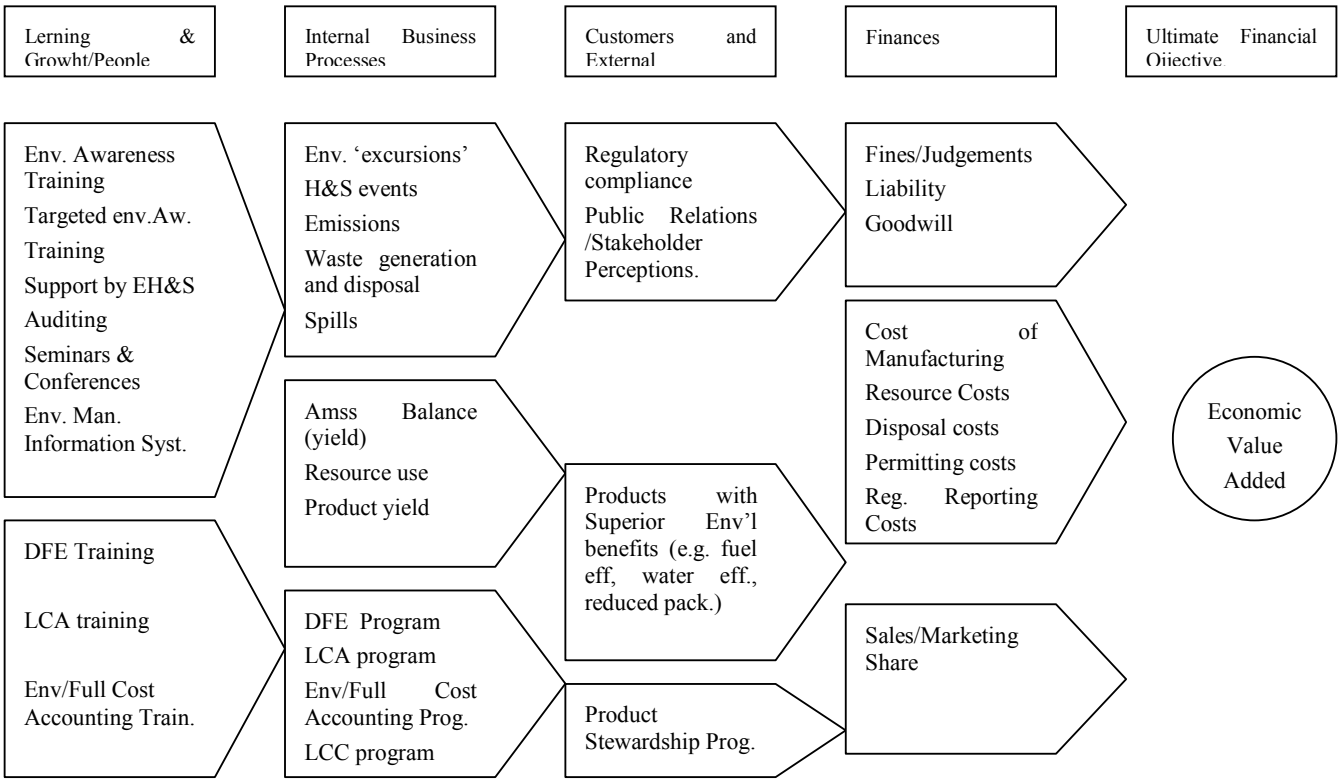


Table 2-1 Generic Balanced Scorecard Model of Environmental Performance (Johnson, 1998)

Johnson also provides with a tentative list of environmental and social indicators for each perspective that we reproduce in Annex 2. We find Johnson contribution useful for the discussion because he bases it on practical examples and personal experience. Nevertheless we also find ample scope for improvement of his proposal. Firstly the model that Johnson proposes does not spur environmental managers to interact with other people in other departments such as the human resources, the R&D, the operations or the marketing. This approach seems to be explained by the following statement

Whatever the strategic and financial objectives of the company and whatever the culture affecting the programs implemented to achieve these objectives, the environmental BSC model illustrating a link between certain types of environmental performance and those objectives can be of use for the environmental professional (p.36)

This approach totally defies the philosophy of the Balanced Scorecard where both the business units and the support functions should direct their efforts in fulfilling the 'strategic objectives' (i.e. those objectives that were found by top management as being of key importance for the a successful implementation of the strategy). The environmental department being a support

function (regardless if at corporate or business unit level) should also be involved in reaching these objectives.

This effort has, in our view, two different parts. The first part is to understand which ones of the many possible initiatives that could be undertaken (e.g. LCA training, Design for Environment programs, Environmental Management Information System, Operational improvements and investments) can best serve the strategy. For instance, if the strategy is to reduce costs then the effort would be on waste and energy reducing initiatives. If the strategy is more heavily focused on finding new markets then the effort would be in achieving an ecolabel or a certified EMS (ISO 14001) if that could prove as a solid differentiating factor.

The second is to serve as the eyes and years of the company towards the external stakeholders that are normally not considered by the 'strategists' but that may very well bring enormous damage to the company. It may also be that these issues are not 'strategic' because they do not especially 'drive' performance but can become so if they are going under certain 'security' levels. Kaplan and Norton refer to these issues as 'hygienic factors' (i.e. factors that need to be in place for the normal development of the business). For example, plant authorisation may not be a 'strategic' factor and thus not appear in the Balanced Scorecard, but, if the trends in the environmental legislation show that this authorisation may be subject to stricter environmental standards currently unfulfilled it is clear that it is indeed 'strategic' to implement the operational changes needed at the facility within the annual maintenance program or at the same time as a major upgrade of the plant for operational reasons. This would allow the firm to avoid a plant shut down due to missing authorisation (lost of production, lost of sales) and to implement the change using only one contractor (reduction of costs). In other words the environmental manager should be both active in responding to the alignment of its initiatives to the strategies but at the same time be aware that the 'hygienic factors' should not be damaged by these initiatives. We thus disagree on this point with Johnson. The company's strategy *is important* and should be the starting point of any environmental manager if he wants to be heard by top management.

A second area of improvement in the model proposed by Johnson must address the implicit lack of drive for interaction between the environmental department and the various functions of a Business Unit (e.g. Marketing, Operations, Research and Development). Each of these functions will be mainly responsible for a part of the Business unit scorecard. For example the Marketing will be responsible for customer satisfaction appraisal and fulfilment while the operations function will be responsible of transforming the customer requests into specific qualities of the products. Each of the perspectives will have, as described by Kaplan and Norton both outcome measures (the measures against which the firm will assess its success) and the performance drivers (the measures that tell us whether in the future we will reach the outcome measures desired). To illustrate this point let us take an example. We are a firm selling washing machines and we believe that customer satisfaction is an important driver for future sales increase. If we did know that one particular segment of our customers that is strategically relevant for us is concerned with the *energy consumption during use* this would definitely drive programs to design washing machines that are more environmentally friendly. However the company will never find that out if in the customer satisfaction survey the question *on energy efficiency in user phase* does not appear. This means that interaction of the environmental department and the marketing is necessary to 'individuate' opportunities and not only to fulfil existing demands.

The environmental manager should not only have a close interaction with the different functions but also consider that its contribution might be visible at different levels. He might contribute

directly to an outcome measure (e.g. customers buying exclusively environmentally friendly products are satisfied quasi-exclusively by environmental quality), to a performance driver (i.e. customer satisfaction has, among its many drivers also energy use during user phase) or as an hygienic factor (e.g. product containing particular chemicals banned in the EU). The consideration of the difference between outcome measures, performance drivers and hygienic factors for each of the functions is an imperative for the environmental manager. It is easy to see how the model proposed by Johnson does not provide any incentive or guidance for the environmental manager to go through these types of processes[13].

Johnson gives also a few suggestions on how to choose relevant EPI's. Firstly they should be 'strategically relevant'. He does not explain what he means by that but exemplifies with indicators like '% of target individuals trained'. What we think Johnson means is that since the firm is training only individuals that have been identified as important then the indicator is more strategically relevant. Although this is certainly a step forward, the missing link with the business strategy makes the example somewhat weak. How will the target individuals be chosen? In our view, in most cases, it will not be possible to choose the right individuals if we are not linking closely (and thus understanding) to the strategy of the business. The second suggestion is to normalize measures through relating them to the output (C02 emissions/number of products). We agree with Johnson that this gives a better perspective on the efficiency of the process. However, in some instances, it is the 'total' quantity of pollutant emitted that might create us problems with stakeholders, so absolute measures should also be considered. Thirdly he suggests that some outcome measures do not need to be measured if the link to the leading indicator is widely recognised. For example it may not be necessary to actually measure the 'potential liability' caused by a spill if the linkage can be accepted and the leading indicator (in this case the entity of the spill) can be measured and monitored. Also here we find ourselves only partially agreeing with Johnson. Potential liabilities are very potent numbers to stir firms action toward a better environmental performance before the spill will happen. Even more so, if the spill has happened, it would be a very good case for the environmental management team if they could 'measure' the total liabilities that the firm is incurring. Tracking down those numbers and using them as a real life example could be of help when investments on Safety and Environment will be evaluated in the future. Fourth suggestion by Johnson is to start with measures that are accessible at a reasonable cost, that are simple and understandable and that encourage correct behaviour. We agree that new measures should be developed with time and that burdening the system with many measures will not help. All in all, this is the philosophy of the Balanced Scorecard (i.e. to choose few but 'relevant' measures). We also agree that measures should be simple to understand. If a measure is weakly defined, the reporting on that measure will be meaningless (e.g. what is a 'reportable' spill?). Finally we agree that the responsible person for measuring the indicator should not be the one who's performance is assessed through it. If the person responsible for oil spills is also responsible for reporting them it will not be easy to get a real value out of him. Nevertheless it is important not to stop to those measures if these are not good enough. The availability of measurements cannot totally overshadow the importance of their 'relevance'. A

[13] The suggestion to structurally go through the process of identifying whether the environmental aspect is a outcome measure a performance driver or an hygienic factor is proposed by Figge et al. (2001). The Sustainability Balanced Scorecard – Translating Strategy into value based sustainability management. Presented at the 11th Business and the Environment conference in Leeds. September 2001.

firm might otherwise feel content with tracking a series of indicators that are easy to retrieve but on which it will be hard to take any meaningful decisions.

Johnson also gives some suggestions on the process of implementing his 'environmental Balanced Scorecard model'. Firstly mobilizing environmental and operational representatives to explore linkages to the bottom line. We agree with this point and think that, even further, the interaction should be expanded to the marketing and HR departments in order to get the whole cause-effect relationship chain covered. Secondly he suggests to integrate metrics into the performance evaluation structure and bonuses. We are convinced that this is clearly the final aim of any metric that really counts. The best way of making employees move in a certain direction is to show them how will this directly affect them (i.e. influence on bonus). Nevertheless we also are convinced that in order for this to really happen there needs to be a very strong understanding of the value creation potential of that indicator and that the environmental professionals in general are currently far from being able to communicate this potential in an effective way to top management. Thirdly Johnson suggests to link the Environmental Balanced Scorecard to existing successful tools used in the organisation (e.g. Total Quality Management, Balanced Scorecard). We totally agree that linking to tools that have a successful image makes it a lot easier to heighten the positioning of the environmental management in the firm.

In conclusion many other areas need to be addressed before this becomes a truly complete tool for corporations. Environmental managers needs guidance on how to define the good measures, guidance on how to monitor the cause effect relationships and build a strong case for environmental and social strategies, how to link to business processes and discussion about issues that deal with the relationship between corporate offices and business units.

Paper N. 2: Using the Balanced Scorecard to Develop Metrics for Sustainable Development (M. Radcliffe, 1999)

Radcliffe states the importance of the BSC for the environmental field as a way to reduce the distance between the financial and the environmental functions. The BSC is a development of the financial controlling and integration in this tool automatically puts environmental and finance professionals in touch. However he also underlines that some modifications are necessary for the BSC to be really useful to integrate sustainable development concepts and practices into business systems.

The first step should be to create a shared vision for integrating sustainability into the firm. This vision will not happen by itself. It will be the result of a consensus building exercise among senior business managers.

*A careful review of an organizations current mission statement and value chain can illustrate how and where sustainability is relevant and supports current value propositions. For example, in organizations that are trying to build market share, sustainable development concepts can avoid current market restrictions due to product content or build brand recognition. In more mature markets an organization may be focused on being the low cost producer…[this review] also allows to identify those areas where the organization must make fundamental change to achieve the sustainability vision…(*p.4)

The Second step would be to develop strategic objectives that would bring the relationships individuated to life. For example within the financial component opportunities to reduce risk, improve competitive position, lower costs or create productivity improvements through environmental strategies should be made explicit. In the customer perspective, besides considering the interaction between the three classes of product characteristics proposed by Kaplan and Norton (i.e. product and service attributes, customer relationship and image & reputation) the environmental manager should expand this perspective to include 'other relevant stakeholders'. Radcliffe includes in this category government agencies, NGO's, financial analysts (external stakeholders) and employees or colleagues in other functions (internal stakeholders). In the financial analyst case a non-financial indicator like '*increased satisfaction among analysts that results in 'buy' recommendation*' might be a good substitute for the difficulty of linking environmental management directly to stock price. The analysis of the internal process perspective assists the review of the existing environmental management programs and their interaction with the value chain. Specific objectives are identified by Radcliffe for this review:

1 Identification of existing business processes where sustainability can add value and improve performance,
2 Determine how existing environmental programs support or undermine sustainability objectives in the customer and financial perspective
3 Learn how sustainability should alter processes and products to meet current customer needs
4 Understand how to anticipate and influence future customer needs regarding sustainable practices.

Radcliffe does not exemplify these points any further. To better explore his proposals let us try to build a few examples of each of these points. The first point, for instance, seems to relate to LCA and DFE type of tools that would allow both to better assess how to significantly reduce costs of products (for example LCA can be used to individuate bottle necks of the production processes that result in higher costs in waste disposal and resources) and to explore design solutions that would make it easier to recycle part of the product or re-manufacture the entire product (especially important for industries for which take back systems are in place). The second point is less clear, but it could be related to the fact that the environmental programs may be badly designed. We can take one example from the previous article that we discussed. If, for instance, the responsible for an oil spill is also the one reporting on the number of incidents, it will be unlikely that the firm will get a true value of the oil spills. Revising with a critical eye the current systems should unveil these inconsistencies. The third point seems to be related to the competitive advantage that can be created through environmental and social actions at both process and product levels. If we suppose that the customer need has been identified it could be that the customer survey has not specifically 'looked' for environmental preferences. This point is not mentioned by Radcliffe and we think it is fundamental to individuate issues to work with in the Internal Business perspective. Furthermore even if customers were explicitly addressed with the questions related to the environmental quality of the products and did not particularly react, actions that have as a consequence a low environmental performance (but raise operational costs) can still be relevant for customer satisfaction in the 'price' category. Radcliffe is here missing, as Johnson did as well, the importance of leading and lagging indicators. In our example operational costs might very well be one lagging indicator of the internal process perspective while environmental performance on specific targets (e.g. waste disposal or resource use) can be the leading indicator that tells us that operational costs will not be higher. The last point is also

interesting and it relates much more to the customer rather than the internal process perspective. Radcliffe seems to suggest that a firm can 'create' the demand for more environmental products. This is not unusual in the branding world where 'creating' demand is the recurrent and final aim. This point seems to ask: if companies are to create needs, why wouldn't they create needs that are also environmentally friendly? The success of Body Shop, for example, shows that firms might find this an extremely appropriate question to ask. However, in our view, Radcliffe is making some confusion here between customer and internal process perspectives. If an approach is to be useful to managers it should, in our view, give a structured guidance on how these tasks should be performed.

Finally the Learning and Growth perspective, according to Radcliffe, includes the ability to both integrate sustainability and meet the objectives in the other three BSC perspectives. Enhancing the organizations understanding of sustainability is seen as an important priority. For example, marketing professionals cannot assess potential customer needs without an understanding of how issues that relate to sustainability may affect the relationship. Radcliffe seems to be thinking of the environmental element in the training of the work force and of the objectives that this element should be fulfilling. Other examples are the capabilities of designers to integrate environmental considerations which would be enhanced by course on Design For Environment or Design for Disassembling.

Paper N. 3: The Sustainability Balanced Scorecard – A tool for Value-Oriented Sustainability Management in Strategy-Focused Organisations. (Figge et al., 2001a)

This paper is, in our view, the first attempt to actually formalize the discussion in a more precise format. The effort of the authors is to define the framework within which the issue of the Balanced Scorecard & Sustainability acquires importance (e.g. failure of EMS to integrate in business processes, necessity of link to value creation) and to give some structure and guidelines to the different approaches that could be explored in future research. The authors propose three ways in which the BSC concept can be used by an environmental department. The first is to integrate environmental and social aspects in the four Balanced Scorecard Perspectives. This option is useful when environmental and social aspects are either strategic core issues or performance drivers in one or more perspectives. The second is to add a non-market perspective for the environmental and social aspects are indeed strategically relevant by do not act through market mechanisms. They exemplify this point in a later paper (Figge et al, 2001b) when the issues of 'child labour' is put in the non-market perspective. The third possibility is the 'deduction of a derived environmental and social balanced scorecard'. The authors claim that such a scorecard – that we understand as being the BSC of the environmental/sustainability department – cannot be a separate scorecard but it must act *in conjunction with one or both* the previous options in order for integration to be achieved. What they seem to suggest is that the environmental/sustainability Scorecard will be totally useless if not preceded by the work of individuating the exact collocation of environmental and social aspects in each of the four perspectives in one or more SBUs of a firm.

The authors also give some indications on how the three above mentioned options interact. First of all they differentiate between industries/firms where environmental and social aspects are internalised in the market system (i.e. a market price is assigned to the underlying scarcities) and

industries/firms where these aspects are not internalised (i.e. where as yet no market costs are felt by the firm as a result of their activities)[14]. They argue that a specific condition within an industry/firm can influence the choice of the approach for integrating the environmental and social aspects into the BSC. If these aspects are to be internalised by the industry/firms, they argue, then the integration of environmental and social indicators in each one of the four perspectives would be the best approach. In the authors' opinion, a niche for *green* products indicates that 'the market' already recognises a premium for environmentally friendly behaviour. In this case, it will be easier for firms to cascade down the strategic goals of the corporate scorecard in order to individuate the contribution of the eco-labelled products − for example the contribution of sales of eco-labelled products to the net profit of the firm being expressed as an indicator. On the contrary, if environmental aspects that are expected to be essential to the success of strategy are not yet internalised by the market, they suggest that the addition of a fifth (non-market) perspective to the four traditional perspectives would be more appropriate. They argue that, while these aspects may not fit within the four traditional perspectives of the BSC, the creation of a fifth *ad hoc* perspective would guarantee their adequate visibility. Finally, it is argued that firms may adopt both solutions simultaneously, in which some of the environmental aspects are internalised and others are not.

This attempt to establish criteria for the choice, according to the specific conditions of and industry/firm, is certainly useful. Nevertheless, the authors proposition of a non-market perspective brings us to two reflections. Firstly, the criteria for choice does not seem to be on the *level of internalisation* of the specific environmental/social aspect by the 'market' but rather *how well* this aspect can fit into the four traditional perspectives. In other words, if an environmental/social aspect does not fit into the traditional BSC, a fifth perspective may be needed, making the discussion about the *level of market internalisation* unnecessary. Although, it could be argued, that non-internalised aspects would be harder to fit into the traditional BSC, this discussion adds complexity (and therefore could act as a distraction) to an issue that should be, in fact, simplified. On the other hand we agree that having on the 'radar' a clear picture of some *unusual* risks that do not fit into the traditional BSC is a good proposal that should be the source of reflection for future research. After all, they are arguing indirectly that the four perspectives may not be sufficient in today's broadened business environment. Stakeholders such as governments, NGO's and public opinion at large may prove to be very important for a firm in today's broadened business environment. A word of caution on this point is necessary. When building this additional perspective, still the link between this perspective and one or more of the traditional ones must be outlined, otherwise this new perspective will fail in providing the desired integration. In other words regardless of whether environmental and social aspects are displayed in the BSC, they would 'counter-balance' other indicators only when 'linked' to the firm's core strategic objectives.

Paper N. 4: Good Neighbours: Implementing Social and Environmental Strategies with the Balanced Scorecard. (Epstein & Wisner, 2001)

[14] The authors do not establish a difference between industries and firms. Although we see some problems with the appropriateness of this approach, this discussion is beyond the scope of this paper and, therefore, will not be object of specific analysis.

Epstein & Wisner claim, as the other authors, that the Balanced Scorecard approach can be useful to firms that want to proactively manage their environmental and social aspects. According to the authors the main advantages of using this approach are (i) to help identification of key environmental and social (E&S) performance measures that link to strategic objectives (ii) to communicate the importance of these initiatives (iii) measure the impact of these programs on corporate profitability. They also claim that the BSC can help in understanding trade-offs between social, economic and environmental effects of specific investments. Environmental and social indicators can be found in corporate scorecards in one or more perspectives depending on the industry. Also some companies create a fifth perspective that is exclusively for S&E issues. Firms would take this last solution when (i) S&E responsibility is seen as a strategic imperative that creates competitive advantage and not merely as a way of improving operational efficiency (ii) to focus managerial and employee attention on the topic (iii) it helps the justification of large investments. The authors give some examples of corporate E&S BSCs that we reproduce in Annex 3.

> *A complete Balanced Scorecard for the EH&S department would likely contain performance measures in each of the four scorecard perspectives, reflecting the role of EH&S in supporting the corporate S&E strategies. Balanced Scorecard for support functions, including EH&S, should align with the strategies and objectives of the corporation and the SBUs thereby reinforcing performance alignment. P.11*

This article is a very good summary of the potential benefits of an E&S scorecard. By mentioning research in the area and proof of advantages that companies are experiencing when proactively managing E&S issues Epstein & Wisner literally build the case for more investments in these issues. It would be interesting to go deeper in their propositions and understand the pros and cons of a fifth perspective, where exactly the EH&S measures fit in the SBU scorecards and the difficulty of building meaningful EH&S scorecards especially when these scorecards have to be built in companies that have no BSC. Also it would be interesting to know whether the companies that have an environmental indicator in the corporate scorecard (Unilever has 'minimize environmental imprint') to what extent they have linked it to compensation. Concerning their propositions on the design of EH&S Scorecards we totally agree, generally in line with the previous authors, that indicators of E&S would permeate different parts of the SBU BSC of a company depending what business they are in. A distinction between leading, lagging indicators and hygienic factors is again important to understand 'at what level' of the SBU scorecards we might find these indicators (see discussion in Paper 2, Radcliffe 1999).

Paper N. 5: The Balanced Scorecard – a Vehicle for the Greening of Business Meetings?. A Case Study of Telia Nära AB and Skanska Facilities Management AB, Sweden. (Nilsson E., 2001)

The approach of this paper is somewhat different from the previous ones. The purpose of this paper is two fold. Firstly to understand whether measures relating to virtual meetings[15] effectiveness should be integrated in the firm's Balanced Scorecards. The second is to explore if

[15] The author defines virtual meetings as including Video conferencing, audio conferencing and wed casting.

the Balanced Scorecard concept is a suitable tool for companies to drive and follow up environmental projects and efforts or not.

The work was carried out in four steps. Firstly a tentative list of key success factors and relative measures was drawn from previous research on drivers and barriers to using virtual meetings. Secondly the list was discussed with a core group in each firm during a 3 hour brainstorming session. During this session the proposed key success factors (e.g. training of staff) and measures (e.g. % staff that completed training) were revised and prioritised and a number of new key success factors and measures were added. Thirdly with the assistance of a criteria list drawn from the literature (see Annex 4) the author evaluated whether some of these measure could be integrated in the existing Balanced Scorecards of Telia and SFM.

We will spend some time describing this point since - as the author points out - most Balanced Scorecard literature only explains how to develop and implement a Balanced Scorecard from the start and not so much how to update it with new measures. As shown in Annex 5 (Tables A5-1 & 2) the key success factors of the virtual meeting projects are put in relation through cause-effect linkages with the key success factors of the two firms BSCs. The reasons for using key success factors instead of the measures were primarily that the complexity of the measures – often expressed as indexes – were not suited for explicating linkages secondly because the firms considered some of these measures sensitive and did not want them to be publicly available.

The firms had not done any work on the cause-effect linkages so the measures in their Scorecards are not linked. Establishing linkages was not an easy process and requires the presence of many actors (e.g. top managers, controller, environmental manager) in a group discussion. This exercise resulted valuable not so much because they discovered anything new. Everybody already knew that virtual meetings can cut costs and that other virtual meeting related key success factors influence the success of this substitution. Nevertheless the visualisation of the links in a one page document made these relationships very clear and proved to be a good pedagogical exercise. One difficulty that they encountered was how to handle the measures that were found not suitable to be part of the Scorecard but that are still interesting to keep. They have not solved this issue during the project because the people participating to the workshop – environmental and HR managers – lacked the necessary insight in the control system of the company.

Several interesting suggestions come from this practical exercise. The first is the difficulty of updating existing Scorecards with new measures. Once the Scorecards have been designed it seems hard to get people to change them, add new indicators or substitute existing ones. In theory this should be done through the ‘double loop learning’ process suggested by Kaplan and Norton in their first book (see section 2.3), but the extent to which this process does actually happens is currently not supported by any literature, we thus think that this finding points to a potential important barrier in implementing the Balanced Scorecard ‘by the book’ and thus in reaping fully the ‘potential’ benefits. Secondly we liked the idea of evaluating the relevance of project within the BSC framework. This is a bottom up approach that well suits environmental departments in companies. Very seldom these departments have a direct link to top management. Similarly to the HR department, they need to ‘build the case’ for environmental and social investments. This methodology could be a very good way of building the first case and gain momentum within the organisation for further investments in environmental and social related areas. Thirdly we have noticed that this work was possible only because (i) the firms already had a BSC (ii) previous research had already evaluated drivers and barriers for that project to actually be successful. The question then is: is it possible to use the BSC framework in firms that do not have a BSC?

The fourth point relates to the fact that the firm did not have cause effect linkages in their BSC did not seem to be an obstacle for the project. If, on one hand having a new measure explicitly linked with cause –effect relationships might be easier to accept, on the other hand the absence of cause effect relationships makes it very hard to discuss whether the original BSC is actually working the way it should. The measures in the different perspectives act as if they were 'set in stone'. Except for top management hardly anybody in the firm knows if and if these links exist (even if at informal level) or how they work. Thus it will be very difficult to critically discuss them and eventually change them. This effect might also explain the difficulty that these companies are apparently experiencing in substituting old measures or introducing new ones.

Finally the way the virtual meeting project defined as 'environmental project' is an issues worth a brief discussion. In reading the paper we understood that in Telia the virtual meeting project had three aims. The final aim was to enhance the use of Telia's virtual meetings service (on of their products) to their customers. In order to raise their sales (main lagging indicator) they would need first to test exactly what were the barriers and drivers for a firm to use virtual meetings. They decided that the main driver were costs reductions. Telia served as the case study to see how much the costs are really cut back. Finally there is also an image advantage in showing environmentally sound behaviour. This advantage is not only for Telia but also for its customers and can be one of the additional features that motivates the customer to buy their product. In the environmental literature we often find the word 'environmental project', but really what does 'environemtnal project' mean? In this case, the *environmental side* of the project is certainly not the starting point of the discussion, but rather one of the features of a new product. Taking this perspective will certainly help environmental professionals understand how to leverage on environmental performance and make it become a business issue.

2.10. Preliminary Conclusions theory

This literature review allows us to come to several interesting conclusions that we decided to divide in two main groups. The first group of issues is related to the architecture of a Scorecard that deals with Sustainability. In this sub section we discuss the commonalities and the areas of improvement of existing approaches. The second group of issues is somewhat more fundamental. It highlights the general criteria that a framework would need to consider. This is achieved through the discussion of the short-comings of the state of the art of environmental and social management as well as some key perceived limitations of the traditional BSC tool. Interestingly the issues raised by the literature have to be complemented with the provisional findings coming from the interviews. These additional issues are described in Section 3.4 (p.79) and should be seen as an add-on to this section. We have preferred to leave the two parts separate to highlight the differences between what companies are actually dealing with and what the literature is focused on.

What is the best architecture for a Sustainability Scorecard?

In our view the different possible approaches mentioned by the other authors are all contained in a structured way in the paper by Figge et al. (2001). Firstly single environmental and social issues would appear in the Corporate and SBU BSCs under different perspectives in the form of strategic outcome measures and performance drivers. Secondly they would appear in an additional 'non-market perspective' where issues that are not easy to include in the traditional perspectives are included. We see this proposal as another way of adding ' other stakeholders' as other authors suggested as well (see Epstein, Radcliffe & Johnson). Thirdly there is an

Environmental/Social Balanced Scorecard that would manage the coordination of all these issues throughout the company. This is in our view the Scorecard of the environmental/sustainability department. This approach opens very interesting research directions.

Firstly we might ask ourselves what happens with the measures that are found to be neither strategic core measures nor performance drivers. What systems should manage hygienic factors[16] and how? Is this something that can be demanded to the Environmental Management System? How exactly the interaction between the EMS and the BSC should work? Secondly we have discussed the appropriateness of having a non-market perspective in the first place. How exactly should the issues that fit in that perspective be chosen? Thirdly there is the question of whether the Scorecard of the Environmental Sustainability department should at all be organised with the traditional perspectives used for SBU Scorecards. As the literature on HR Scorecards suggests this might not be the best architecture for an SSU Scorecard.

All in all the papers analysed provide with an excellent starting point for discussion. Nevertheless environmental/social managers will need much more precise guidelines on how to 'actually do the job' if this discussion is to be of any use. In this respect certainly research can help a great deal to establish frameworks, criteria's and definitions, which should ideally then be tested in real world applications and then modified accordingly.

What are the fundamental issues that must be solved in order for any future framework to be effective?

We have individuated 5 main issues that need to be discussed for any 'architecture' or methodology integrating environmental and social issues in business process to be successful.

Firstly we have found very little literature discussing the weaknesses of the Balanced Scorecard. One grey area that would need further discussion is for instance whether the Balanced Scorecard is a exclusively a Strategy Implementation tool or also a strategy formation one. This grey zone exists because of what Kaplan and Norton call 'the double loop learning'. The way a firm will solicit the customer to tell us about his needs will directly feed into the revision of the strategy, thus being included in the strategy formation process. This is extremely important for environmental/sustainability departments because supposedly they are the championing the idea that medium long-term trends should be considered in the vision of what that firm actually represents. For instance the raising responsibility by end producers for the waste disposal of their end of life products influences significantly the types of strategies that a firm might decide to pursue. This is the reason why, if these departments are the depositaries of such information, they should be included in the strategy formation process from the earliest stages rather than simply being involved in implementing a given strategy. Scorecards for managing environmental issues will need to consider its interaction with an adequate *methodology* or *framework* for scanning the context in which the organisation operates. Such analytical tool should identify the strategic relevance of stakeholders that will influence the definition of indicators for the management of environmental and social issues.

Secondly, the design and implementation of an environmental and social BSC requires us to consider the most suitable approach for the *integration of existing tools into the BSC*. The work

[16] *Hygienic factors* are referred to by Kaplan and Norton as those factors that must be controlled because they are a precondition for doing the business, but not necessarily they are strategic. These factors generally should show up in the BSC only when reaching some pre-defined 'alarm' level. For examples see the discussion at page 24.

of Becker *et al.* (2001) suggests that the usefulness of a *systems approach* should be further evaluated. Similarly to the 'HR System', the use of the e-BSC would expand the scope of an *environmental management system* (EMS), which already encompasses policies and practices that enable the workforce to achieve the environmental targets. The use of a BSC is expected to better align the targets created in the EMS process with the firm's corporate strategy. Other tools and techniques, such as environmental reporting, environmental performance measurement, life-cycle assessment (LCA), social auditing, and stakeholder dialogue, may also benefit from the BSC approach: the use of the BSC has the potential to reveal the strategic importance of these tools and techniques for the financial performance of the organisation. Nonetheless, some questions about the integration of existing tools into the BSC still remain. How could a functioning environmental management system (EMS), for instance, be integrated into the e-BSC? What difficulties arise from such attempts? Could this integration eventually damage the overall environmental performance of the company? In our opinion, analogous questions could, and indeed should, be raised by those trying to integrate other environment and socio-related tools into the BSC.

The distinction between environmental and social responsibilities of a company raises the third issue that should be addressed when designing a framework: the necessary *capabilities* for managing environmental and social Scorecards. As Becker *et al.* (2001) pointed out, the implementation of BSCs requires us to identify the types of capabilities that a particular Shared Service Unit (SSU) needs in order to achieve its strategic goals. In this respect, this paper questioned the appropriateness of treating the environmental and social issues collectively: are capabilities for their management similar? Who, within the firm, should develop environment and socio-related BSCs? Is there a need for a specialised department or business area to manage these issues? In the light of these questions, it seems that, at this stage, an all-encompassing sustainability-BSC, as the one proposed by Figge *et al.* (2001), may better serve theoretical rather than pragmatic purposes. Until more empirical research identify the capabilities required for the management of environmental and social issues, it seems recommendable that a framework considers them as distinct areas of development.

The questions associated with capabilities also trigger the fourth problem-area that an environmental and social BSC framework needs to address. We need to question *to what extent* specialised organisational areas, such as the one encompassed by an environmental/sustainability SSU (or department), should manage the environmental and social areas of concern. Should this be entirely 'internalised' by each one of the management functions (marketing, logistics, human resources management, operations, etc.)? What would the trade-offs orientating the choice between the two options? Although Kaplan and Norton claimed that the BSC approach is applicable to any type and size of organisation, it is evident that the tool is especially suited for a *preferential* type of organisational structure. Indeed, most examples used by the authors are drawn from large-scale American firms and, not surprisingly, the discussion of strategic coordination normally relates to organisational divisions, departments, and SBUs and SSUs alike, which are typical of large-scale enterprises. Such preferential view of the organisational structure may also privilege a specific type of solution, and indeed structural arrangement, for the management of environmental issues. For enterprises with an established environmental/sustainability department (or SSU), for instance, it would be natural to include the design and management an e-BSC to its scope of action. Nonetheless, based on the lessons learned from the Total Quality Management (TQM) movement, one could question whether this is an appropriate approach to addressing the environmental issues faced by firms. Environmental

concerns may have similar attributes to those of quality, and addressing them efficiently may require the internalisation of these principles by each person who collaborates for the overall performance (quality or environmental) of the company. In other words, instead of establishing a specialised area (department) for management of environmental or social issues, the focus would shift to the type of corporate culture that would inspire environmental and social responsibility at all levels of the organisation.

The final problem-area relates to the organisational issues involved in the application of both the 'traditional' and the environmental and socio-related BSCs. Curiously, the complexities of the 'organisational life' associated the implementation of this management tool, have been treated with some degree of superficiality by the specialised literature. Regarding the *cause-effect* relationships, which are landmarks in the use of the BSC approach, there are many grounds to argue that this mechanistic image of organisation is indeed a limited one. As Bolman and Deal (1991) have stressed, privileging a specific organisational frame, as the BSC does, may limit the capacity of managers to understand why things do not work, as they *should*. Organisational theorists certainly have a great deal to contribute in this area, since the pitfalls of implementing Balanced Scorecards – environmental, social, or otherwise – could be grasped by using analytical tools that have been developed in the past fifty years (see: Clegg *et al.* 1996). In particular, the total absence of a discussion on the 'balance of power' among the various players participating in the design an implementation of the BSC is somehow alarming. How for instance, does the BSC empower the role of environmental management within a firm? Although this would certainly depend on the specific organisational context, it seems that a framework orientating the development of environmental and socio-related BSC would need to be more sensitive to the complexities involved in the reality of organisations.

3. Practical Experiences

This Chapter will be divided in four sections. Section 3.1 will contain information about the selection process of the firms and some information gathered during the process for the firms for which no interview was possible. Section 3.2 will detail the results of interviews in the remaining 7 firms for which it was possible to interview environmental/sustainability managers and/or members of the BSC implementation team. Section 3.3 gives some reflections and preliminary conclusions on these results; Section 3.4 relates these findings back to some of the core issues defined in the theory conclusions of Section 2.10.

3.2. BSC companies with little information

This Section describes selected companies using the BSC and the level of involvement of the environmental department in the process of building the BSC. The starting point for finding the most interesting companies have been the 4 books that focus on the Balanced Scorecard. Annex 2 contains a table where the companies using the Balanced Scorecard are connected to the literature source. The next step was to focus the attention on the companies that would most likely be working with environmental and social issues. These firms were in fact the ones that most likely had to face the issue of integrating environmental and social issues in their Balanced Scorecard. Additionally organizations that were non-profit or government agencies were also excluded from the starting list. Preference was also given to well known, large multinationals. Table 1 below is the result of this first screening step:

Source	Companies mentioned
Kaplan And Norton (a) Book: The Balanced Scorecard (1996)	Dupont, General Electric, Hewlett-Packard, Shell Canada.
Olve et al. Book : Performance Drivers (1998)	ABB, British Airways, British Telecom, Coca-Cola Beverages - Sweden, Electrolux, Skandia, Volvo, Xerox
Epstein 2000 Book: Counting What Counts (2000)	Whirlpool, Cigna Property & Casualty, Bank of Montreal, Skandia.
Kaplan and Norton (b) Book: The Strategy Focused Organization (2001)	Nova Scotia Power, AT&T Canada (now Equifax), Wintherthur International.
Other Sources (mainly attempts from tips)	Statoil, Telia, Skanska, Unilever, BP Chemicals

Table 3-1. List of companies attempted contact

The next step was for the team was to contact the relevant people within these companies. This research resulted to be much harder than expected. The various firms switchboards could almost always direct us to the environmental department but only very rarely to the department responsible for the BSC implementation. In some cases this responsible was found only after asking explicitly to be directed to the financial control or strategy department. The company would be dropped out of this initial list if within two weeks time it was not possible:

1. To find the Business Unit that used the Balanced Scorecard
2. To get a contact name in that Business Unit

3. To get in contact with the environmental department

Information on companies for which contact was made but for which it was not possible to get specific information is reported in Table 3-2 here-below. The companies are listed in order of quality of the information obtained.

Company	Contact	Current BSC use Y/N/NA, 1-2[17]	Existance of Integration activities of env/Soc in BSC Y/N/NA, 1-2
Statoil	Brage Johansen Corporate Environmental manager bwj@statoil.com	Y1	Y1
Telia	Britt Hernell Corporate Environmental Manager britt.b.hernell@telia.se	Y1	Y1
Unilever	Christine Drury Corporate Sustainability Manager Christine.drury@unilever.com	Y2	Y2
Skanska	Johan Gerklev Swedish Environmental Manager tel. 0046-8-504 350 00	Y1	Y1
Electrolux Sweden	Henrik Sundstrom Swedish Environmental Manager henrik.sundstrom@electrolux.se	NA1	Y1
IBM Europe	Victor Duart Director of Environment Europe Duart@es.ibm.com	NA1	N1
Volvo Cars Sweden	Anders Karrberg Swedish Environmental Manager akarrber@volvocars.com	NA	NA
Dupont	Paul Tebo Corporate Sustainability Manager Jacqueline.S.Garcia@USA.dupont.com	NA	NA
AT&T	Brad Allenby Corporate Environmental Manager Balenby@att.com	NA	NA
British Airways	NA	NA2	NA
BP Chemicals	NA	Y2	NA
Mobil NAM&R	NA	Y2	NA
GE, HP, Coca-Cola Sweden, Bank of Montreal	NA	Y2	NA

Table 3-2. Firms contacted but not interviewed

[17] Yes/No/Not Available. The number "1" stands for primary data (interview with company employees). The number "2" stands for secondary data (literature, interviews with people external to the company).

3.3. Results from interviews to BSC Companies

This Chapter contains some specific information taken from more in depth interviews of company representatives. Although an effort was made by the team to interview both the people responsible for the BSC implementation in the firm and the environmental and social managers this objective was achieved only for Skandia, Novartis, SwissRe and ABB Sweden. The other six companies fact sheets contain only information coming from environmental/sustainability managers. For each company we have dedicated a few lines to describe the industry that they are in and other general issues. In table 1 we can see the list of questions that we used as a template in our interviews. During the first round of interviews we realized that some of these questions needed explanation. The Table 3-3 explains what type of information we solicited from the interviewee in each question.

1. Why was the BSC implemented and when?	The purpose of this question is exclusively to know what type of problem was the BSC set to solve and to give a timeline perspective to the discussion
2. What were the main barriers to implementation?	Here the idea is to see what are the 'hard' parts of the implementation of a BSC. Where does it present problems? What issues impede its effectiveness? It is an open question because at this stage the purpose is to collect a wide variety of answers. In the future we might want to select some of these to investigate them singularly.
3. How were the barriers overcome?	If some issues were particularly difficult to solve it was interesting to know how did the company go about solving them and if it succeeded.
4. What were the perceived benefits for the firm?	With this question we were trying to understand whether the objectives outlined in question 1 were matched by the results. In other words if the implementation of the tool had provided the benefits that the company was expecting from it.
5. What were the implementation costs?	We wanted to know here how much time did the company employees had to dedicate to the development and implementation of the Balanced Scorecard. Also an insight to the process steps followed by the company in developing the BSC was part of the question.
6. What parts of the company use the BSC? What does it look like?	This question is more about the structure of the BSC. We found the answers to these questions very hard to answer on the phone. The BSC contents are highly specific to each sector. Also only reaching the BSC responsible would allow a satisfactory answer to this question.
7. How does the environmental/social work in your company link to the BSC?	This question was asked both to the environmental manager and to the financial controller. The objective was to understand at what level, if at all, integration of environmental and social actions in business strategy implementation had been achieved or considered. As we will see for most companies this was the last question they answered

Table 3-3 List of questions for telephone interviews

In reporting the answers given to these questions we have preferred to leave as much information as possible in this study. The idea behind this choice is that given the explorative nature of this study the relevance of the answers for future research still needs to be determined. The answers as reported should be taken as the starting point for a more in depth survey or analysis. The questions we had no answer from the interviewees were left blank.

Company: **Nova Scotia Power**

Contact: Dennis Barnhart[18]

Position: Responsible for BSC implementation

Email: dennis.barnhart@nspower.ca

Tel.: 001-902-4286185

1. Why was the BSC implemented and when?

The work on the BSC was started by CFO Jay Forbes in January 1996. The main reason for implementing the BSC was that they needed a way to communicate the new strategy. They also found, as described by Kaplan and Norton, that financial measures were too historical, they lacked of predictive power and performance based solely financial indicators may reward the wrong behavior. Their specific experience on the matter was that capital dislocation and discretionary program funding were based, as a consequence to their un-balanced bonus system , on short-term budgets and financial criterion instead of long-term strategy.

2. What were the main barriers to implementation?

According to the BSC implementation responsible[19] the hardest part is the cultural change process. It took them 5 years to implement the scorecard throughout the organization all the way to the team level. Currently there are more than 90 Scorecards used in NSP.

3. How were the barriers overcome?

Nova Scotia Power has learned a lot during these 5 years of implementation of the Balanced Scorecard. Firstly that whatever program has to be driven through senior management support. Secondly that it is important to be patient giving time to the results to show up, if the work is done by incremental steps it will not be so heavy. Thirdly that hurdles should be expected and as they come should be accordingly managed. Finally, whatever action must be taken to fix things it should not be postponed to a later date but be dealt with right away.

4. What were the perceived benefits for the firm?

According to Mr. Barnhart the added focus on employees and customers has added balance to their system. There is a much stronger shared understanding of what matters. It allows everybody to be kept focused through time and it links business success to performance management.

They also base bonuses on the BSC and his perception is that the tool is working well in this as well.

5. What were the implementation costs?

He says the main cost was the champion of the project (himself). Fro the past 5 years he has been, and still is personally involved 100% of his time.

6. What parts of the company use the BSC? What does it look like?

The BSC is used from Corporate level down to Business Units and further to functions and teams within the functions. It is also used to assess some of the top managers.

7. How does the environmental/social work in your company link to the BSC?

Being NSP an Energy production company the environment is somehow integral part of their efficiency measures. Thus all of the environmentally related indicators are in the Internal Business Process perspectives

[18] Unfortunately it was not possible to read him during the second round of interviews because ha had changed company in the meantime.

[19] Dennis Barnhart. Responsible for BSC implementation.

Company: **British Telecom**

Interviewee: Chris Tuppen
Position: Corporate Sustainability manager
Email: Chris.tuppen@bt.com
Tel.: 0044-207-3565729

1. Why was the BSC implemented and when?

British Telecom (BT) is the National Telecommunication company in UK. BT is reported to be using the Balanced Scorecard by Olve et al. (1999), but the publication does not mention whether the environment is included in it. According to the sustainability manager in BT they are in the process of integrating the sustainability work into the the company's business performance measures. The process should be concluded by the end of March 2002. He does not know why the BSC was implemented in the first place.

2. What were the main barriers to implementation?

-

3. How were the barriers overcome?

-

4. What were the perceived benefits for the firm?

-

5. What were the implementation costs?

-

6. Where in the company is the BSC used? What does it look like?

BT has a Corporate BSC which is cascaded in all their Strategic Business Units. There are 10 measures in each scorecard.

7. How does the environmental/social work in your company link to the BSC?

Some of the individual departments have had an environmental element that was particularly relevant (e.g. the purchasing department). At the corporate level one of the measures is reputation which is measured through a series of questionnaires in which a company role in society is an indicator.

Mr. Tuppen personal effort is now devoted to influence the various SBUs to address the issues with sustainability. They are now moving towards the idea that lines of business are more independent and they will have a performance contract. At the BT board level they have just decided that SBU performance measures should include one indicator that relates to their Sustainability performance. It could be some kind of aggregated indicator. Before succeeding in linking the environmental indicators to bonuses the managers will need to see how do these contribute to the business. Establishing causal linkages could be of use in that respect. He sees the cause effect mapping as an equivalent of building the business case (i.e. showing that some actions in the environmental and social arena are profitable). BT has been doing a lot of work on building the business case for Sustainability.

The difficulty with the Sustainability area is that the Balanced Scorecard measures tend to be single measures that are tracked over a long period of time. One single number is to give a complete picture of what the sustainability performance of the firm is. The BSC responsibles asked him for one single measure. In his view this was too much of an oversimplification and decided to manage sustainability issues through other tools. According to him environmental management systems are far better in the detail you can reach and give you more control.

However BT is establishing a single measure for corporate social responsibility (ie sustainable development) that will be used for quarterly performance monitoring.

Company: Skandia

Interviewee1: Karin Thomas Corporate Sustainability Manager
Interviewee2: Henrik Danckwardt BSC responsible
Email: Karin.Thomas@skandia.se; Henrik.Danckwardt@skandia.se
Tel.: 0046-8-7884907

1. Why was the BSC implemented and when?

According to Kaplan & Norton (1996, pp.121)[20] the reason why Skandia had implemented such a tool stemmed from the growing realization that most of the company value derived from intellectual capital and that this value was not adequately reflected in the annual report. The expected advantages of doing this work were (1) Desire to change the way analysts evaluate the company using non-financial measures to assess its ability to create future value. (2) Steeper learning curve because going public provokes feedback (3) Allow a more precise evaluation of value of client firms (Epstein 2000, pp. 94)[21]. According to Henrik Danckwardt who championed the Balanced Scorecard development and implementation in the first pilot Unit of Skandia the historical process developed as follows:

...Skandia had been in the reinsurance and the traditional life insurance business for many years when in 1985Skandia started a new business unit, Assurance and Financial Services (AFS). I was, at the time, responsible for planning and follow up of the whole ASF start-up. Given the long start-up phase inherent to the business still in 1991 we could only provide the corporate offices with negative financial results. That is when my CEO Mr. Carendi proposed us to use Balanced Scorecard approach. He thought that showing an increasing effectiveness in satisfying customers, making processes more efficient and develop good employees capabilities would allow them to communicate that they were doing a good job. Together with Mr Edvinsson and others we started to build the model and then to implement it.. We were y successful in this respect and the outcome of that work is today known as the 'Business Navigator'. In 1998 the corporate offices decided to apply the same approach to the Skandia Group and assigned him responsibility of developing a much more technologically sophisticated information technology platform that could be used by the entire group. That tool is today known as 'Dolphin'...

2. What were the main barriers to implementation?

According to Mr. Danckwardt there were 4 main barriers to be overcome. Firstly top management should understand the value of the concept. Secondly you need a good IT tool to make the concept 'usable'. When they introduced the IT tool they misjudged how the difference in infrastructure between Sweden and USA would influence the relative performance of the tool. This infrastructure problem turned into a change management issue because the slowness of the tool turned to hurt the confidence on the tool. It is not just a matter of having a fast tool *in the end*, but in getting employees to perceive it as a fast tool *at the beginning*. Thirdly they had to overcome the barrier related to the idea that any tool that is internally developed is not as good as something developed externally. Fourthly it was hard to raise awareness about the existence and

[20] Kaplan and Norton (1996). The Balanced Scorecard: Translating Strategy into action.. Boston: (MA): Harvard Business School Press

[21] Epstein M. (1999). *Counting What Counts: Turning Corporate Accountability to Competitive Advantage.* Reading (Ma): Perseus Books.

the potential of the tool. In some subsidiaries still the tool is not used. Despite the fact that decentralization is one of Skandia's principles he thinks that everybody should use it because, on top of being a good performance measurement system the current version of the Dolphin acts also as a knowledge management platform were the companies employees can share knowledge. This is due also to internal miscommunication where consultants from the outside push top managers to implement tools that are already present in-house.

Part of the barriers were also due to the different cultures in Skandia. This is why he thinks that for multinational firms the implementation of this tool might be more difficult.

His experience is that more you reach in the lowest layers of the work force the more this tool becomes powerful. However the effort that the firm has to do to make it a widely used tool is also much higher.

3. How were the barriers overcome?

Top management commitment came from the success story in AFS. Nevertheless not all top management in all Skandia group understands the concept well.

Concerning the infrastructure problem they simply had to fix the technical issue, but he feels they have lost a lot of credibility for this accident. This credibility will be hard to regain.

To penetrate in each company in the Skandia Group they tried to find ambassadors. They also designed some special training for Dolphin responsible that would allow these ambassadors to learn to deliver the product to their colleagues.

4. What were the perceived benefits for the firm?

They have observed that it's a lot easier to communicate vision and objectives. People understand where their responsibilities fit in the bigger picture. Also he reckons that they are saving a lot of money because the planning is a lot smoother. In other words he feels that while before many employees spent time to write planning documents and budget numbers that nobody would use today the whole planning process is on line, it is visible, accessible and useful. The Dolphin has become for many an online planning tool. Individuals make their own Scorecards on the computer and share them with their team members.

5. What were the implementation costs?

To build the initial methodology and IT application in AFS they spent 10 million SEK (approx. 1 million Euros). Developing the system further required 5 more people full time. and 2 working as a support. All the work with the ambassadors.

6. Where in the company is the BSC used? What does it look like?

The online version of the Dolphin can be accessed through the internet web site http://www.Icvisions.com.

All product lines use the Dolphin. Last time he checked there were 1600 scorecards in the system. He reckons this is a good success given that Skandia has 5500 employees in total

7. How does the environmental/social work in your company link to the BSC?

The Corporate Sustainability Department has not worked directly with the BSC people so far.

Company: **Xerox Sweden**
Interviewee: Lars Sevenbay
Position: Quality and Customer Manager
Email: lars.sevenbay@xerox.se
Tel.: 004687951319

1. Why was the BSC implemented and when?

The BSC was taken into consideration as a natural outcome of some lessons learnt from the early 80's. Xerox had been a monopoly in the 'xerographie' because they had the patent. In late 70's the patent expired and Xerox was exposed to a totally new and aggressive business environment. As a reaction to this change Xerox started to work with the TQM concept. In 1983 TQM was implemented worldwide. The experience with this tool went on for more then 8 years. In the early nineties however they started feeling that cross functionality was a big problem for them. TQM was found to be too much 'internal process oriented' with little consideration of marketing and human resource issues. They needed a tool that could go across functions. So they turned their attention to the market to see what new tools could be used for this purpose. In the early nineties the first prototype of a Balanced Scorecard was already available. They took it, changed it into something that fitted their culture and renamed it Xerox Management Model (aka XMM). They expected this tool to help them find improvement areas stemming from cross functional miscommunication. It gave them a structured way of reviewing the business in its total and allowed them to do it rapidly.

The way Mr. Sevenbay sees it is that the TQM model was the start of their quality journey and that the XMM is the development of it. The main differences were that TQM could not give neither vertical or horizontal cross functionality, it did not cross borders like the BSC does. The main danger of the focus on continuous improvement programs was that you might be concentrated in improving a strategically insignificant process while an important one that you cannot detect but that is much more important is performing every day worse.

2. What were the main barriers to implementation?

The hardest thing in these cases is to market and sell the product internally when it is internally developed. Also the widespread perception that the mandate to implement the tool was coming from the top together with the perceived high potential for change made it even less attractive. People don't like change. Top management commitment is also fundamental. He has had 4 different General Managers (members of the board) in the last 10 years and he could see that the efficacy of the tool depended on how much each of these managers would support it. If top management is not supporting it then the tool will not be used by anybody.

3. How were the barriers overcome?

The only way of solving these types of problems is to train and communicate with the employees in a clear way. They had literally invent various ways to communicate. They started from top management and wend all the way down to the shop floor. Today everyone in the company has one to one reviews with their managers in a structured way.

4. What were the perceived benefits for the firm?

People are more motivated because they understand the business a lot better. They communicate results in a more balanced way (i.e. not only financial results). Employee performance is also assessed through these financial and non-financial criteria. Of course the weight that each measue would have in the performance assessment would vary across functions. For example the sales people would have a lot of weight on the sales numbers while the marketing people more on the customer satisfaction. Another important advantage is that the BSC model makes the employees be proactive, it eliminates errors *before* they occur. In Xerox case it tought them to give a voice to the customer. Xerox has decided for instance that to be successful they will need to build *customer loyalty* for their old customers and to have *new customers*. The overall approach today is to ask the customer first in order to avoid mistakes.

...we survey them constantly with questions like: did we live up to the commitments we made? Did the equipment come in the agreed time? If it didn't why? What affects the customer is not only the sales person, it is also the truck driver, the way he behaves when he delivers the machine. The process of servicing the equipment by the service engineer is also important, do we just go there or call them first? How does the invoice look like? Is it clear or not? These types of processes have great impact on customer satisfaction…the BSC gives an opportunity to understand what is happening in a structured way, it allows you to put people in contact and clarify the problems of the processes in place.. [Lars Sevenbay, 10 Dec. 2001, telephone interview]

5. What were the implementation costs?

The administrative part is heavy expecially at the beginning. There is probably some optimal financial level on this. From 1992 to 1994 he had 20 people/year of resources involved in this project, provably 15 would not be enough. The good part is that when the system was up and running it wasn't heavy any more. Their review process is done in steps today. They would review one part of the function at a time. They usually finish with that function within the year by doing three separate reviews. Of course for some functions like the sales force that have to report on internal quality while they think the important thing is revenues this tool might be perceived as very heavy. However he is very satisfied with the tool.

Today the next step for BSC seems to be knowledge management. He sees this as an add-on that can be easily integrated in the Balanced Scorecard. He reckons nobody has come up with anything particularly new up to now. There's new buzz words like Performance Excellence Process but he reckons this is quite the same thing. The BSC process cannot be simplified more than what it is already.

6. Where in the company is the BSC used? What does it look like?

The BSC as such stops on a national level. But everyone that works in Sweden works with it. Within the XMM they have categories and items. There would be a person is responsible for each BSC measure while a lot of people would be contributing to the improving the performance on that measure over time. They managed the tool without an IT application. They managed it through word documents on common servers that would be updated by the responsible people.

7. How does the environmental/social work in your company link to the BSC?

-

Company: Novartis

Interviewee : Ulrich Widmer Sustainability Scorecard Responsible
Email: Ulrich.widmer@novartis.com

1. Why was the BSC implemented and when?

We are working in the health Safety and Environment department of Novartis. This department is a support function that sits at corporate level and coordinates/supports the efforts of the different Business Units on these topics. This support function is part of the legal and corporate affairs function of Novartis. The initiative of developing a BSC for our department was taken directly from us and not coming from the controlling department. In 1999 we had a project that was investigating through questionnaires and interviews about the levels of line management involvement. The outcome of that project showed clearly that the awareness level on Health Safety and Environment issues had ample scope fro improvements. It was during this project that a colleague from consumer health told them about the Balanced Scorecard. He had been trained to coach the BSC implementation in the consumer health Business Unit. In the year 2000 we thus started to work on.

2. What were the main barriers to implementation?

It is really too early to say that. We just finished developing indicators for their department. We prepared some questionnaires to fill some of the measures in the scorecard. For instance we had to interview line managers to have the numbers to aggregate in the '*line management satisfaction score*'. This indicator should tell us something about how well line managers feel assisted in HSE issues by the corporate HSE function. However many more indicators that we have on the Scorecard still need to be measured. The main issues for us was to 'raise awareness about HSE in the Business Units'. We wanted them all to be there to discuss. I feel the initiative has had a good success since an average of 20 people coming from nearly all the Business Units was participating to the process. The process has proven the most important part of the exercise. The final BSC and the level of precision of the data play a secondary role currently. Having a 1 page document that all managers from different Business Units have agreed to has been the major outcome of the exercise. The whole process of discussion lasted a full year. They met with line managers for 5 times. The discussions have been animate and participation active. Managers were quite impressed by the methodology.

3. How were the barriers overcome?

Our main objective was to raise awareness with line managers. We achieved this by involving them from the very start.

4. What were the perceived benefits for the firm?

Having a 1 page document that all managers from different Business Units have agreed to was a major outcome of the exercise. We now can base the performance assessment of HSE towards Business units and of Business Units on HSE issues on the general objectives described in the Sustainability Balanced Scorecard.

5. What were the implementation costs?

The process has been intensive only at the beginning. Three people from the HSE department and the moderator have been involved in this process about 10% of their time in the past year. Then you have to account for the line managers time. In the last year they had 4-5 half a day workshops with 10-15 participants each time. From now on we have less work to do. It will also depend on how far we will want to reach with the data acquisition for the KPIs. The precise

definition of these indicators will also need rework. Resources in the business units to work on these issues are not so easy to get. We have to consider that they already have a number of systems in place and we don't want to overburden them.

6. Where in the company is the BSC used? What does it look like?

The technical operations- production and logistics of the two SBU Consumer health[22], Pharma and the HR department have implemented the BSC in Novartis. However these departments have developed the scorecards totally independently from each other. We happened to know about it because of the interviews we made in the various business units. The full version of the Novartis Sustainability Balanced Scorecard is reported in Table 3-4. Following the table there is a brief description of each of the indicators

7. How does the environmental/social work in your company link to the BSC?

Novartis HSE department Balanced Scorecard. The Scorecard is divided in the traditional 4 perspectives: High performance organization (learning and growth), Systematic Execution & implementation of HSE requirements (internal processes), Stakeholder Service Excellence (customer), Excellence in Financial Performance (financial). Each of these perspectives has 4 objectives and for each objective a key performance indicator is developed. The indicators are either a *Score* (i.e. coming out of a periodical questionnaire or checklist such as external stakeholder relationship score or line management satisfaction) or a *Rate* (i.e. coming out of data collected over a period of time such as employee retention and successful job rotation). There is no distinction in the HSE Scorecard between leading and lagging indicators. No strategic mapping exists either. For Novartis this is just the first approach to this tool and they are looking to making it more meaningful to their organization.

[22] Consumer health includes food and non restricted pharmaceuticals.

Novartis Health, Safety and Environment Balanced Scorecard

Novartis HSE Vision

To implement Health, Safety and Environment into our businesses and be recognized by internal and external stakeholders and interested parties as a leader committed to achieving a superior level of HSE for our employees, consumers and customers

Strategies

- Maintain and further develop a high performance worldwide HSE organization, which acquires and leverages global know-how to identify, support and address the needs of our business
- Integrate HSE into our businesses using consistent standards, appropriate technology, best in class practices, and knowledge access and sharing
- Create an HSE network using internal and external resources effectively, providing flexible, competent and responsive services to our businesses at a competitive cost
- Build and maintain relationships with various governmental, regulatory and interested party groups protecting our stakeholder interest

Objectives/Critical Success Factors

High Performance

- Ensure appropriate structures and resources exist within the corporate, sector and site organizations
- Provide a working environment which fosters cooperation, teamwork communication and innovation
- Establish and enhance employee motivation and commitment while continuously develop knowledge and leverage employee strengths
- Attract and retain key employees for Novartis

Systematic Execution & Implementation of HSE Requirements

- Ensure communication channels and lines of responsibility are efficient, clear and used properly
- Ensure relevant guidelines, policies and tools exist, are updated timely and consistently followed
- Allow for easy storage, access, compilation and dissemination of data, know-how and experience

Stakeholder Service Excellence

- Continuously interact with internal and external stakeholders to understand and meet their needs while enhancing the reputation of Novartis
- Ensure guidelines are understood throughout the organization and enhance processes through spreading of best practices and know-how sharing
- Ensure internal and external inquiries and issues are addressed timely, accurately and thoroughly
- Provide feedback and recommendations to internal stakeholders regarding performance and compliance with guidelines and standards to improve our businesses

Excellence in Financial

- Integration of HSE into line organizations
- Support setting of appropriate targets to address business needs
- Proper risk management
- Avoidance of claims
- Improvements in operational performance; safety, resources and assets

Key Performance Indicators

- HSE Employee Satisfaction Score
- Training Compliance Rate
- HSE Employee Retention Rate
- Successful Job Rotation Rate

- Audit Recommendation Implementation Score
- HSE Implementation Score
- Information Sharing Score

- External Rating Score
- Line Management Satisfaction Score
- Question Response/Advise Rate
- Business Improvement Rate
- Key External Stakeholder Relationship Score

- Target Achievement Rate
- Risk Management Score
- External/Internal Resource Rate
- HSE Expense Spending
- HSE Performance Score

Table 2. Commenting the Novartis BSC

High Performance Organization	This is the Development and Growth perspective. The objectives in this perspective are related to the capacity and the satisfaction of the employees of the HSE department. HR was involved in the discussion of the choice of indicators. Although, according to Mr. Widmer the objectives are not explicitly linked to the indicators there seems to be a close correlation between the two.
Systematic Execution & implementation of HSE requirements objectives	This is the Internal Process perspective. The objectives relate to the idea that knowledge lying within HSE department should be readily available to the Business Units. Communication channels should be established and easy to access.
Stakeholder Service Excellence	This is the equivalent of the Customer Perspective. They measure how Novartis scores with their external stakeholders (e.g. rating agencies assessments of Novartis HSE quality). Most of the Indicators in this perspective are not yet measured. The only indicator already implemented is the 'line management satisfaction rate'. A questionnaire was sent to 50 top Novartis managers. The results are not yet available.
Excellence in financial performance	This perspective seems to be a mixture of internal efficiency measures, efficacy towards the 'customers' (i.e. the different Novartis SBU and overall efficiency in avoiding claims and keeping the risk low for Novartis as a group.

Table 3-5 Description of the Perspectives of the Novartis HSE BSC

Novartis is the only example we have found of a full HS&E Scorecard. Their experience is to us very interesting because they took the challenge up and went far beyond what has been tried – to our knowledge - by any other company today. This first step suggests us also some areas in which next steps could be taken:

Define the objectives more narrowly. To understand this point let us exemplify with one of the objectives in their Scorecard:

> *Establish and enhance employee motivation and commitment while continuously develop knowledge and leverage on employee strengths*

This objective is in reality composed of three very different parts. The first part is related to 'employee motivation'. Literature on the Scorecard tells us that the 'employee motivation' argument should start from individuating where the core capabilities lie. In other words the firm should not loose those employees who's capabilities are crucial the business and that are very difficult to replicate. A distinction between key employees and 'others' is paramount for a measure of 'motivation' to be strategic. The second part reads 'continuously develop knowledge'. This requires the firm to have understood not only what type of knowledge is strategic and exactly how but also a decision of how to measure the 'development' of this knowledge. The

third part reads ‘leverage employee strengths’. If really this is an important issue, then the question would be : how to measure the leverage level of employees skills? In whatever way Novartis has decided to solve this problem this objective would require ‘at least’ three separate measures. While ‘employee satisfaction score’ can give evidence to the level of motivation of employees ‘training compliance’ is hardly a good measure to know whether knowledge has been developed or it is actually leveraged y employees in their everyday activity. This same problem can be found in other parts of the HSE BSC. Defining objectives precisely is not easy and often a result of several iterations, but an absolutely fundamental ingredient to make the scorecard measures useful for strategic management.

Define more explicitly the link between objectives and measures. Objectives that are not clearly coupled with measures cannot be monitored. This point will be easier to implement if the objectives – as suggested previously – will become more focused.

Make a distinction between leading and lagging indicators. In the development and growth perspective for instance the employee retention would be a leading indicator of employee satisfaction. These types of relationships are very important to explain the value creation process and the basis for the cause-effect relationship mapping.

Draw the cause-effect relationships. The mapping of the cause effect relationships will further enhance the predictive and communicational power of the Scorecard. These maps will constitute the basis for discussion to where the HSE department is creating value and how

Link explicitly to SBU goals or objectives. The use of indexes naturally aggregates information coming from different Business Units into one number. For instance the ‘Line management satisfaction score’ will tell the HSE corporate manager that they have please their internal customers but not exactly how. Furthermore, there might be issues that are overlooked by SBU managers. It could even be that they are satisfied because they did not need the HSE at all. Additionally it is the link to SBU performance that gives to the HSE corporate the strength to argue for investments in HSE. If the exercise will end up only with a one-year questionnaire to be filled by the heads of SBUs this will hardly have any effect on the business.

Despite all these areas of improvement with their scorecard, Novartis HSE department feels they achieved the objective of building consensus around the need of an HSE common effort and goal with the line managers. This is certainly a point that must be considered in the future development of any scorecard that will want to deal with environmental and social issues. Could this perhaps be the first of the many steps that are needed in an organization so that the environmental and social management become aligned to the business strategy? If so, how could this first step be improved? What would the following steps be about? Or else, is this starting point the wrong one? Does it irremediably lead to failure in the medium long-term? These are the issues that Novartis and any expert interested in this topic will need to concentrate in the future.

Company: **SwissRe**

Interviewee1: Peter Meyer Financial controller
Interviewee2: Thomas Streiff Corporate Sustainability manager 0041-71-2242744
Email: peter.meyer@swissre.com; thomas_streiff@swissre.com

1. Why was the BSC implemented and when?

The CEO in 1998 thought that the Balanced Scorecard could better direct the company. SwissRe was not a very communicative company with rating agencies, it was very inward focused, the BSC was supposed to help in the communication with its customers. The BSC was also supposed to focus strategy, to achieve a more reliable and effective performance assessment process, to link corporate to business units objectives and to create new products through the integration of the services provided by different SBUs.

2. What were the main barriers to implementation?

Peter Meyer was incharged by the CEO to draft a Balanced Scorecard that could be the basis of discussion at the board level. I approached the problem starting from the SBUs top managers. He thought that the collection of indicators coming from the different SBUs could be a good base for a corporate level Balanced Scorecard.

Round 1: *Develop the Corporate Scorecard and links to the SBU Scorecards*

He approached the problem in three steps. First, in April 1998, he presented the approach to all the SBU heads at the executive board level and asked them to mention some issues that they thought were important and explained them how these would fit in a Balanced Scorecard framework. This exercise proved to be very useful. Board members were quite happy with the result and decided to pursue the exercise further. The second step was then to ask them to produce 5-8 major objectives and add specific targets to each of those objectives. The SBU heads were also asked to present this at the executive board meeting in September 1998.

The result of this second step was quite diverse. Some SBU heads thought it was a really good method while others totally disliked it. One major shortcoming of this exercise was the weak top down direction. They were not allowed to define the process strictly. Thus in some divisions they did not work at all. In order to have concrete results *the process should be quite rigid with definition of responsibilities, deadlines and sanctions*. Without this framework it just doesn't work.

The September 1998 Executive board meeting was quite an important one. They had reserved the whole day to give to the SBU heads to present their proposed objectives and targets and to ask them how they would act for their next year plans if they were to score well on those objectives and targets they had set. Here they encountered the second main problem. We realized how hard it was to make people think long term.

This meeting was judged as a success. It was an occasion of discussion. The gap between corporate goals and SBU goals was now evident. They had now some material to start thinking about how to solve it.

The next step was thus to get all the SBU objectives and targets cluster them in some way and produce a 1 page document that would contain the main elements of each of the SBU scorecards. Mr. Meyer presented the result of this consolidation work to the Executive Board in February

1999. The Balanced Scorecard measures were clustered in 6 perspectives namely outside perception, people and skills, financial, processes and innovation, competition and clients. There were objectives, measures and targets in each perspective. They used this document as the basis to assign responsibility for these targets at the SBU heads. It was left to the SBU heads to decide how their action plans would be fit to reach those targets.

Round 2: *Implementation and feed back of draft SBU Scorecards*

The SBU heads went away from this meeting with this task in mind. The process was now 1 year old. During the following 5 months the SBU heads developed their action plans. These action plans were discussed in October 1999. They noticed that the base of discussion was far better because there was a shared view of what were the targets that the action plans were supposed to achieve.

The Action plans were then implemented and by January 2000 they were able to assess the progress towards the targets. This assessment was done on a one-to-one basis with the SBU head. This resulted in some small changes in the Corporate Scorecard that was communicated to the SBUs in February 2000.

Among the problem areas individuated Mr. Meyer didn't know whether he should link these measures directly to the bonuses or not. There is a risk in putting everything in a model and getting a number out. You might loose the complexities that are inherent to the business. He thinks that there are several gray areas that could not be covered well by the measures they had designed. We found out that these gray areas were indications of organizational problems. Focusing on them would not only improve the Balanced Scorecard but really tell them something more about the business.

At that point organizational changes occurred in SwissRe. Mr. Meyer was moved to another corporate office. The BSC corporate team was closed. Nobody took over and the BSC process missed one round. There was no work on this during part of 2000 and the whole of 2001. Only some SBUs that were particularly motivated in the use of the tool continued to use it by themselves for their planning. Only recently there has been a revitalization process of the tool at corporate level with new people responsible for it.

3. How were the barriers overcome?

In order to revitalize the BSC process there needs to be a big top management commitment at corporate level and a clear communication of it towards the SBUs. Also there needs to be assistance from a BSC expert that has experience with the financial industry and a software that supports the tool and makes it easy to use.

4. What were the perceived benefits for the firm?

-

5. What were the implementation costs?

-

6. Where in the company is the BSC used? What does it look like?

-

7. How does the environmental/social work in your company link to the BSC?

For them it is one of the balanced scorecard items. Corporate Citizenship is in fact part of the perspective named 'outside perception'. They have added this perspective because the industry was very introvert and that hurt their image in the long run.

Thomas Streiff, the corporate sustainability manager was introduced to the BSC in 1999. His department is part of the Strategic Planning Unit at the corporate level. The aim was to surface through the BSC the strategic relevance of sustainability in the BSC. SwissRe Sustainability report is not linked to the financial report. However the process helped him to go in each SBU and talk about the relevance of Sustainability issues. For some SBU these issues are much more important that for others. For instance in the reinsurance and risk division the relevance of Sustainability is quite strong. He feels that trying to work on non-financial indicators in general has helped him to assess the significance of Sustainability for SwissRe.

Company: **ABB Sweden**
Contact: Lennhard Lundall
Position: Responsible for BSC implementation
Email: lennart.lundahl@se.abb.com

Lennart Lundhall was appointed the task to develop a BSC in 1994 from CFO of ABB Sweden. ABB Sweden is composed of 60 independent companies. Ten of these companies decided, on a voluntary basis, to test the BSC in their organization. Two companies served as a pilot project to test the approach. *ABB Control* was one of the two.

This report is based on one interview with the chief controller Lennard Lundhal and a report on a Balanced Scorecard related project carried out by ABB Sweden in 1996. In order to facilitate the reading a clear distinction between what Mr. Lundhall says in the interviews, what is found in the report and our own elaboration or understanding of the issues will be kept throughout the description of this Case

1. Why was the BSC implemented and when?

In 1995 the chief control philosophy as communicated by ABB's President Percy Barnevik could be summarized in four basic concepts: decentralization, customer focus, productivity improvement and competence development. In order to report on these four pillars the financial reporting and communication in ABB Sweden had to be changed. The overarching idea was to *push responsibility down in organizations* and by doing that become more productive and more focused on the customer. They thought that the BSC tool could help employees to plan and measure their work by themselves. According to Ewing and Lundhall the so-called EVITA project (i.e. the name of the BSC inspired project in ABB Sweden) differed from the original BSC concept developed by Kaplan and Norton.

> *Where Kaplan and Norton describe a tool to be used by top management to 'look down' to their organization the EVITA project had the objective to create a tool for units on all levels to look on their own activities (Ewing & Lundhall 1996, p.2).*

The EVITA project was part of a larger project called T50. The overall philosophy of the T50 program was to cut times by 50% while delivering a better product to the customer. ABB Sweden had at the time 60 companies. Ten of these companies volunteered to participate to the EVITA project. In a study of the achievements of the EVITA project Ewing and Lundhall describe some of the issues faced by two of the ten companies (defined in the study as Company A and Company B) while developing and implementing their Scorecards. In each company different Units were chosen as pilot (e.g. corporate, shared service units, business units).

In answering the following questions we will refer as ***development phase*** as the phase where the Balanced Scorecard for the unit is discussed. The final result of this phase is the Balanced Scorecard for the Unit (i.e. a paper document describing what the Top management of the SBU would like to monitor and why). The ***implementation phase*** follows the development phase and is more concerned with the data and process management that allows the tool to be useful to the organization.

2. What were the main barriers to implementation?

The chief controller outlines three general problems that he felt were the most important through both phases.

Non-financial indicators were not comparable between different SBUs.. For the controllers that was a problem for assessing relative performance of the different SBU to one another.

Finding time to do it. The program had to originally compete with other programs that were already up and running in the organization.

Lack of patience. When you're half through the implementation of a program already other tools are fashionable and the organization becomes eager to implement them. The problem lies in the fact that the organization has had no time to profit, or sometimes even to fully implement, the previous program. Thus, he reckons, hardly ever the firm actually profits from these efforts to the full extent and it is also very hard to judge whether the program was effective or not.

3. How were the barriers overcome?

Given the freedom that each ABB firm had in the use of the tool the benefits from the project varied across the organization. Some factors were found to be critical for the an effective development and implementation of the tool:

1 The higher the involvement of the people in the Unit, the higher the use and effectiveness of the tool

2 The use of an external resource acting as a 'coaching' entity in the project team has proved extremely important. The 'coach' is a person outside the organization developing the structure of the tools. He should be a process consultant with high competence in business development in general and in the BSC concept.

3 A person within the unit should be used as an internal champion. His role is of support to the Unit. He/she has to know how the system works, provide on-going support of the system (e.g. data input, changes in definitions, data-output). This part-time job could be rotated within the Unit.

4 Top management should support the implementation process. Not necessarily through 'pushing measures down' in the organization but expressing positive attitude to the project, giving freedom to managers to choose what they thought best and holding them responsible against targets

4. What were the perceived benefits for the firm?

Ewing and Lundhall explain the main benefits resulting from the EVITA project in the two companies A and B in a separate report available in Swedish (Alväster Bo, *Företagsstyrning med "the Balanced Scorecard" enl T-50 andanen studie av två enheter vid ett ABB-bolag*, a student paper at Stockholm Univerity, 1995). The general results are summarized as follows:

> '..the general results of the study are mainly based on interviews with the participants. In summary it was reported that already the *development phase* as such had positive effects regarding the participants motivation, creativity and effectiveness. The participants express a deeper understanding of the long term orientation of the business and the key issues for achieving this. They also experienced greater solidarity with the colleagues, less conflicts and more creativity in the group.' (Ewing & Lundhall, 1996, p.21)

Some of the findings are also described in more detail.

The BSC reveals inconsistencies and holes in strategies and plans. In all the pilots the work started from the existing strategic plans for each unit. It soon became evident that the plans did not cover all perspectives in the BSC and that the plans on different levels in a company were not always consistent.

The BSC facilitates internal dialogue. When a particular SBU was defining its key success factors (i.e. lagging indicators) and performance drivers (i.e. leading indicators)– especially in the customer and internal process perspectives – they found out that power and means to achieve better results were not within the Unit. They were thus forced to go out to other units to discuss the problem. The problems individuated in this process were sent upwards in the organization. We understand this point as follows. If a particular production Unit has in its strategy that they should be for example '*more customer oriented'* they will need an inflow of meaningful information coming from the customer service department. That is in fact where the feed back of the customer comes into the organization. The customer's feed back will need to be translated to a technical specification. This will require specific resources to be devoted to the task. The message going upwards in the organization will then be: if you want us to be more customer oriented we will need to plan a budget to create a task force that allows customer feed back to be solicited and 'translated' in an actionable format (i.e. technical specifications).

Discovering the SBU customers. The various pilot groups had intensive discussions about this point. They did not have a clear mapping of internal and external, direct and indirect customers. This was seen as an important outcome of the process.

Difficulty in controlling performance of administrative Units. Bo Alväster (cited in Ewing and Lundhal, 1996, p.21) suggests that people with different background react differently to the tool. A production unit employees are used to idea of measuring and control while administrative staff in general isn't. Alväster suggests that adjustments of the process (and we might add of the tool as well) should be taken according to these findings. No further suggestions are made on what these adjustments should look like.

BSC as a planning/decision/feed-back/learning model. By facilitating internal dialogue between Units and vertically in the organization the EVITA model proved to be more than just a monitoring tool, but a real platform for discussion. Discussion means that managers in the corporate offices should look at these numbers and be ready to talk them through with the business units managers.

BSC not only a system for top down evaluation. Pilot Units have not used the BSC only as an information tool for the hierarchy (e.g. Corporate offices for business units). Measures were not consolidated throughout the organization. Measurement structure was unit specific (and developed starting from vision and mission. Even though sometimes the indicators might be the same, the actual value on one level is not made up by consolidating the values of the same indicators (provided they exist) of the units below. Consolidating is thought to be complicated and lessen the degree of freedom of the individual units. The need for consolidated (mainly financial) information in the ABB group world wide is satisfied through a different system called ABACUS. Corporate offices used the Balanced Scorecard only to communicate the strategy of the organisation. Each Business Unit would then have to understand how can they contribute to this strategies best and, according to that, how can they make it actionable. What is not clear is whether the measures were linked to bonuses.

Choose less than 25, focus on less than 5. The pilot companies never used more than 12-20 measures in their Scorecards. Nevertheless not all the issues were the same priority all the time.

Managers would focus on 3-5 measures at a time. Once they solve one indicator they would put emphasis on another one. We understand this point as suggesting a step by step process in which, following the development phase (i.e. the one that is set to define the BSC measures) the manager would pursue issues based on current priorities.

5. What were the implementation costs?

-

6. Where in the company is the BSC used? What does it look like?

Now the EVITA program has stopped also because there has been reorganization in ABB Sweden and some companies have been sold. He thinks that this program might start again in some of the companies that are part o ABB Sweden, but not in the short term.

7. How does the environmental/social work in your company link to the BSC?

Lennard Lundhall sat through a session with the environmental department colleagues asking if they thought there should be one more perspective (the sixth) on environment. They came to the conclusion that environment should be part of the other SBUs scorecard and not a stand-alone perspective. On the other hand by being within other SBU Scorecards these indicators would be less visible, which was judged to be a potential problem. The result was that the environmental department did not participate to the building of the Balanced Scorecard and hardly any environmental measure was recognized as a success factor. The Sustainability manager has confirmed that they have not participated to the implementation of the BSC.

Company: Shell

Contact: Thomas Geoff
Position: Responsible for BSC implementation
Email: Thomas.Geoff@SI.shell.com

1. Why was the BSC implemented and when?

The Balanced Scorecard process started in 1996. Previously we had they were a classic matrix structure based on McKinsey's concept. Until that time our system was perceived as one of the best ones in the world. The problem with the previous system was that there was no direct assignment of responsibilities to specific individuals. When they reorganized their business in Strategic Business Units that had the whole value chain (from the design of the product to the manufacturing and selling of it) we called Prof. Kaplan to help us design our Balanced Scorecard.

2. What were the main barriers to implementation?

Given that the Balanced Scorecard was a part of the reorganization there were not so many problems. They linked it to remuneration immediately. Each year we changed it and improved it.

One of the problems we have been faced with is known as the 'silos effect'. This expression describes the isolation of Business Units between each other and with the corporate offices. Business Units tend to concentrate on their own performance if assessed only on that. They solved the problem by inserting some of the performance assessment measures that related to the level of interaction between businesses and to the overall corporate performance in the top 200 managers of Shell. This action totally solved the problem. I believe that Scorecards work very well but you have to set them up right.

The Balanced Scorecard should never be used in a mechanistic way. The numbers on the Balanced Scorecard should only serve as a basis for discussion. The numbers are never perfect and can never cover all the complexities that organizational life includes.

In 1998 we had a big crisis. At that time we put a lot of weight on the financial indicators to get performance back up. Now the emphasis on financial is reduced again

3. How were the barriers overcome?

NA

4. What were the perceived benefits for the firm?

Today a group appraisal that took several weeks can be done within 2 weeks. This is an immense advantage because we are much more in touch with what is going on in the group.

5. What were the implementation costs?

NA

6. Where in the company is the BSC used? What does it look like?

NA

7. How does the environmental/social work in your company link to the BSC?

At the corporate level one of our indicators is 'right to operate'. This indicator clearly includes all the corporate social responsibility principles including a leading performance on environmental issues. As all the other indicators on the BSC this one is also linked to the bonuses of the top managers. It is a measure that carries weight and provides people with focus on this issue constantly

Company: Lunds Energi

Contact: Thomas Parker
Position: Responsible for Support Service Units (IT, Environment, Strategic planning)
Email: Thomas.parker@lundsenergi.se

1. Why was the BSC implemented and when?

The implementation of the BSC in this company was not done to solve any specific problem. They were simply looking for better ways to assess performance.

2. What were the main barriers to implementation?

All in all the process of implementing the BSC was rather smooth. They benefited from the help of external consultants. He feels they have prevented problems as well as keeping the ball rolling throughout the whole process of implementing the BSC. Nevertheless the first barrier was convincing the management committee (i.e. CEO and the heads of the business units) was not an easy task. Some managers thought that the old goal setting system was good enough. The second barrier was the amount of work that involved building the BSC. Not so much the goal setting part, but following on these goals on a monthly basis. But both these initial problem were soon solved.

The third main barrier was the multiple goal settings that overlapped once the BSC was implemented. Specifically now they have Environmental management system, Quality and Health and Safety goals that run in parallel with the BSC process. They possibly cannot handle this many goals at the same time, and find it hard to integrate them. The final problem was that the way bonuses were assigned before, which will need to be changed to suit the new performance assessment framework However they yet don't know how to do this.

3. How were the barriers overcome?

The intervention of consultants helped them through the process. They apparently solved the issues of management commitment and workload because they were well directed. The second and third problem still exist.

4. What were the perceived benefits for the firm?

The web tool succeeded in being a good communication medium. The strategy is much better communicated now than before throughout the organization. Goals, measurements, distance to target are available for everybody online and are updated monthly. For example they had the target of implementing the EMS, so online they could follow the EMS implementation development month by month and not wait the end of the year to know if they would be able to nail the deadline.They also felt they became much more customer focused. Out of the BSC work they found out the customers were not well serviced at all. The advantages are that even in the portions of the business where Lunds energi is a monopoly there is a cost advantage in giving a better service. Unsatisfied customers tend to be very costly. Furthermore as Lunds Energi is publicly owned, customers (i.e. citizens) are also owners. It is a goal of the company in itself to perform a good public service.

5. What were the implementation costs?

N.A.

6. Where in the company is the BSC used? What does it look like?

It is used down to the Business Units levels. At that level programs are put in place to satisfy those targets. Nevertheless since the Business units are composed of 40-50 people it turns out that each employee has at direct influence on at least one of the measures on the business unit scorecard

7. How does the environmental/social work in your company link to the BSC?

As described earlier, one of the current problems they are experiencing is the lack of such a link. Merging the Environmental Management System with the Balanced Scorecard is a problem they need to solve. They had an EMS for a long time and this is still up and running with its own objectives and programs. Some of the business units have integrated environmental measures in their BSC. For example production has '*% reduction of NOx'* as a goal in its internal process perspective. But rationalisation and alignment has not happened. They see as this alignment vital to be able to fulfil the goals. If they have too many goals they will end up reaching none of them satisfactorily. In the Corporate Scorecard Lunds energi has as a top priority goal ' to be perceived as an environmentally friendly company'. This is, according to Mr. Parker also why environmental measures show up at the SBU level.

3.4. Preliminary Conclusions practice

Although the experiences of the different companies can be thought as quite diverse we have found several interesting common issues.

The Balanced Scorecard is introduced in firms to satisfy different needs but usually broadened into further uses later. Kaplan and Norton identified 8 main reasons for companies to start with the use of the BSC: Clarity and consensus about strategy, achieve focus, leadership development, strategic intervention, educate the organization, set strategic targets, align programs and investments, build a feed back system. We find our surveyed companies to fall in these categories. For instance Nova Scotia Power was dissatisfied with its traditional financial control system because it failed to communicate strategy throughout the organization and lacked of predictive power (1st through 6th reason). Skandia used the BSC as a way of creating a performance assessment framework for a start-up (All of them). More specifically start-ups have negative financial numbers for the first years and have a problem to show progress if the performance measurement is based only on financials. On the contrary showing that the pactions are aligned with a defined strategy and that measure in the realm of capabilities, internal processes and customers are improving can be a good way of filling the gap. Xerox Sweden, leader in the use of TQM, needed a tool that could 'cut through functions' and individuate 'new' strategically relevant processes instead of continually improving non-strategic ones (i.e. set strategic targets). Novartis HSE department used it to raise SBUs top management awareness of Health and Safety issues (i.e. educate the organization). SwissRe used it, among other reasons, to be more transparent towards rating agencies (i.e. Clarity about strategy towards external stakeholders). In ABB the idea was to '*push responsibility down in the organizations'* (i.e. leadership development) while in Shell the reorganization in SBUs (instead of functions) forced them to look for a tool that could effectively manage across functions. What was interesting to find out was that most of these companies seem to have found more advantages than expected. For instance in Skandia they found out about the internal communication potential of the tool, while in Xerox the predictive characteristics of the BSC were found to be incredibly effective. In other words, while companies started for different reasons, the structured approach embedded in the tool allowed them to reap additional unexpected benefits.

Main barriers to implementation relate to change management issues. Kaplan and Norton do warn that implementing effectively a BSC is '*not as simple as it seems'*:

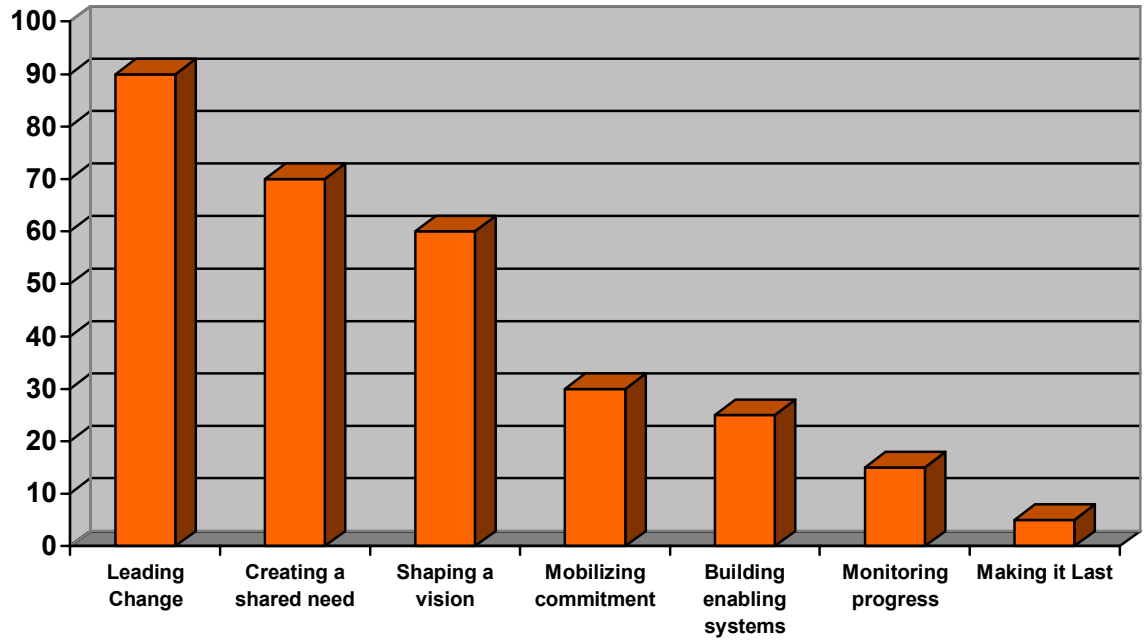
> *When people tell us, 'it's not as simple as it seems', they are referring to the hard intensive work required to formulate a scorecard appropriate for their organization and to make that scorecard an integral part of their management processes. There are few shortcuts in developing a viable scorecard. (Kaplan and Norton 1996, p.286)*

In other words the Balanced Scorecard is a structured approach that should be followed step by step. Top management commitment, the existence of certain type of change agents, the support of IT tools and the very 'process' of developing the BSC seem not to be opened for discussion. References to change management are quite evident both in Kaplan and Norton (1996) and in Becker et al. (2001)[23]. Table 3-4-1 shows the relative success of the different phases of a change

[23] See Appendix of Becker et al. (2001). HR Scorecard. Harvard Business Press. Boston.

process. The table makes it easier to grasp what the phrase 'not as simple as it seems' actually means in the practice. For instance in Nova Scotia Power the two main barriers were cultural change process and communicating the need for patience in assessing the results of the program. Similarly in Skandia the difficulty of convincing top management and the firm employees at large about the potential of the tool was a daunting experience while Xerox Sweden chief controller bluntly states 'Change is not attractive to organisations members'. For Xerox Sweden, Skandia and ABB Sweden that developed a customized 'internal' version of the Balanced Scorecard there was apparently an additional problem. Whereas the chief controllers claimed that their organization always liked to 'digest' the tools and change them in a way that they became part of the organization, a tool developed in-house seemed to have a much lower positioning towards the organization members than a tool coming from the outside. Benefits coming from the so-called 'customization' seemed to be counterbalanced by the higher difficulty of making the tool accepted in the firm. These issues relate to the first 4 points of table 3.4.1.

Table 3-4.1 Relative success of the 7 phases of a change program (Becker & Huselid.(2001). HR Scorecard, p. 187).



Skandia has experienced problems in building awareness for the potential of the tool due to a misjudgment in the enabling IT system. There was a negative feedback on commitment when the tool was perceived as 'slow'. Most of the interviewees have problems related to the last point in table 3-4-1. This point is basically linked to the fact that the previous six points are scoring high through time. For instance in Xerox the variation of top management commitment had a perceivable effect on the use of the BSC. In SwissRe the reorganization and the consequent loss of the 'championing' element that lead the change resulted in an abrupt halt in the use of the BSC. In ABB Sweden as well as in Nova Scotia Power the lack of patience was an important barrier to overcome through time.

> *the relevance of the BSC will depend on what management systems were there before and on the rhythm of uptake of new tools that come to the market before a company can reap the benefits of the previous change program [ABB Sweden Chief controller, telephone interview, June 2001]*

Apparently managers are attracted by new tools and their consultants push for new tools to be implemented. But this takes place often 'before' the new tools have had time to have a positive effect on performance.

Solutions are also related to change management. Several interviewees have mentioned that involving everybody from the very start, having appropriate change agents, IT tools as enablers (i.e. that make the tool usable). The theme on whether to use external consultants is also somewhat recurring both in the theory and in the practice. Some of the interviewees that benefited from external consultant help (Shell) and some that didn't (SwissRe) recognize that having the support of experts is of outmost importance for the success of this change program. To us, this is a confirmation that the difficulty of effectively implementing this tool is only marginally linked to technical issues. As Becker et al. state

> *Effective Change = Quality * Acceptance….In most cases the Quality aspect is manageable (i.e. executives can identify the right measures and create indices to assess them)…but without Acceptance the change effort might begin with enthusiasm ands excitement but will quickly fizzle out…high quality thinking about the BSC as a change program hardly ever occurs* [Becket et al., HR Scorecard, p.183]

Change efforts need experts of change to promote them. Even in ABB Sweden where the program lasted 4 years with the production of a case study and even investment in IT tools, the interest 'fizzled out'. Currently within the ABB Sweden Group only a couple of the 10 companies that took part to the BSC exercise are still using it. Does this mean that the BSC is not effective in delivering value as a tool? Perhaps. Or maybe it simply means that change management issues have been underestimated and the firm did not have the opportunity to reap or perceive the benefits of it before the interest on the tool fell.

Scarce use of cause-effect relationship maps. None of the companies we talked to uses strategy (or cause-effect relationship) maps. In SwissRe the manager reported them as being '*too complex and burdensome to design and manage*'. This was to us somewhat surprising considering the emphasis that is given to this concept by Kaplan and Norton. According to Kaplan and Norton the strategy maps are the strongest communicational tool. Furthermore the explicit linking between measures in different perspectives will foster the revision of the hypothetical links during the 'double loop learning process'. As we commented in Section 2.9 in the case of the practical experience run by Nilsson E. in Telia, this seems to turn out to be a big problem when the strategy is to be revised through the 'double loop learning' mechanism. Measures that are not displayed with a clear cause-effect linkage cannot be criticized, they become as given. The feed back then becomes simply part of a control system of a given strategy rather than the cornerstone for revising the strategy itself. This would have also important consequences on the environmental/sustainability departments. If they are proposing new issues that become important and the system is not receptive to change, these issues will be brushed to the side without much discussion. The number of interviewees is definitely too small to come to the conclusions that this is a broad trend, nevertheless the fact that *out of 10 firms none of them has used the concept of cause-effect relationships* is something that is worth exploring in the future.

Environmental and Social departments are scarcely involved in the design of the Balanced Scorecard. According to our limited survey few environmental and sustainability departments have seen in the Balanced Scorecard a tool that could help them 'build their case'. This could be for three main reasons. First consideration is the genesis of the BSC. Financial and strategy departments speak traditionally a very different language from the often rather 'operational' environmental managers. This might be the case of ABB Sweden where interest by the environmental department dropped rapidly after the first meeting. The link between tools used for measuring performance and the environmental management can only be seen through a discussion at the SBU level and the impacts that the BSC approach will have on the management of the Unit. This type of discussion was in fact carried out in SwissRe where the firm has an entire SBU who's business is strongly linked to sustainability issues. Secondly, the tradition of financial/Strategy departments to be focused on control - rather than being a support function that spurs 'learning' - seems not to create special confidence in the new tools that they might be proposing. This seems to be the case of British Telecom who's Sustainability manager refused to follow the BSC as the cornerstone for the Sustainability management because the BSC champions (i..e financial controllers) asked him to condense everything in one single indicator. Thirdly the lack in the literature of guidelines on how to build Scorecards for support functions certainly did not help. The lack of guidelines could be in our view the main culprit for this phenomenon.

Environmental and Social measures are nevertheless present in some BSC's. Despite the above described findings there is also sufficient evidence both from the literature and from the practice that some companies are integrating environmental issues in their Balanced Scorecards. There are three main ways that firms have been integrating these issues in their BSCs.

Firstly some firms, such as Lunds Energi, Shell and Unilever, are doing it from the corporate level as *corporate themes* (or single indicators in their corporate BSCs) such as 'be perceived as an environmentally friendly company'. These themes are then cascaded through the organisation and, at least in theory, should permeate the BSC system of the whole company. The level of 'permeation' will vary depending on the 'weight' that is put on those measures. For instance in Shell this measure is linked to the bonus system for top managers, it would be interesting to follow up whether this actually results in a more environmentally aware behavior. We were, in the discussions on the literature, a little suspicious about having single 'environmental' indicators in the scorecards at the top level. We felt that this could be just a different way of marginalize these issues like the British Telecom example seems to suggest. We argued that the 'links' between this indicator and the others in the BSC must be drawn in order for this indicator to be useful, and that the level of aggregation that one indicator forcefully needs to reach may make it impossible to draw appropriate and precise links. We still think that the scarce use of cause-effect relationships results in a mechanisms that *imposes* measures on the BSC without *explaining* them. In other words if a firm at corporate level imposes an environmental/social measure in the BSC without clarifying how acting on it will create value this will still be seen throughout the lower management levels as pure a public relation exercise lead by corporate offices rather than a real business issue. This strategy will thus hardly result in a long lasting cultural change. Maybe the corporate offices will not withdraw their commitment to being 'environmentally and socially friendly' but certainly the degree of intensity of this effort will be much lower and peripheral to the core business.

Secondly firms like Bristol Myers Squibb and Novartis used the concept as a guideline for the environmental department. Specifically in Novartis the concept was used to build awareness of the implications of the HSE to the SBUs. The link to the SBU was done by simply inviting them to build the HSE scorecard. Although they will not benefit from very precise information from the SBUs they seem to have achieved a superior level of integration compared to the time before the exercise. This approach is somewhat new to us. Publications in this field were not mentioning this as a possible use of the concept. We think that this could be seen as the building block for a deeper integration. Whether this 'first step' should be modified for it to be more effective and what are the next steps are matters to be evaluated in future work.

3.5. What does the practice bring to the theory?

We still think that the issues raised in the conclusions of the literature review are still valid (see Section 2.10, pp. 31-34). For instance the lack of guidelines (first issue) and the integration of the EMS with the BSC (third issue) have proven to be a problem for the firms that we have surveyed. However we also have found new 'food for thought'. Specifically three issues seem to have risen from researching into the practice.

The first issue relates to the finding that companies begin to use the BSC tool to fulfill different needs. The development and implementation of the BSC is incremental, it is done in steps. We think that the methodology that should help environmental/sustainability departments to integrate in the business processes should also be incremental. As the exercise in Novartis suggested one of the first steps could be to have a first round of discussion with the different SBUs, but it could also be that one particular SBU should be chosen first to be used as an in-depth case study. Perhaps both things should be done in parallel? What would then be the next steps?

Secondly, the continuous references to *change management* types of issues allow us to draw a parallel between the BSC process and the structured integration of environmental/sustainability management in business processes. This is also a change issue and a quite fundamental one too. Lessons from change management should be applied. As we described in this previous paragraph, change management is not sufficiently dealt with in the BSC literature. We found that it is not dealt with sufficiently in the environmental/sustainability management literature either. When the frameworks, criteria and definitions will be ready to use, what will be the process that will insure long-term success to sustainability management?

Thirdly, the issue of whether it will be possible to build a tool for environmental/sustainability management that will benefit both firms that have the BSC and firms that do not is complex. Environmental and social professionals have been often frustrated with the shortsightedness of the firm's strategy. Now the management literature tells us that their frustration was indeed based on a true organisational problem. As the BSC literature details and condemns, the vast majority of companies are managed mainly (if not exclusively) with short-term goals. Also environmental professionals have found difficulty in performing cross-functional work, such as integrating environmental issues in product design and in marketing surveys. The BSC literature tells us that they were simply experiencing another common 'organisational problem': the isolation of organisational functions between each other. The organisation of firms by Strategic Business Unit (i.e. encompassing all the value chain from finding the customer need to fulfilling it) could be seen as a strong facilitating factor for the environmental/sustainability department to streamline these issues throughout the value chain. Furthermore the BSC fosters the formalisation of the

relationship between the corporate offices and the SBUs and it fulfils the need of Shared Services at the Corporate level to get more involved with the business. The environmental department, like all the shared services has also had this problem. Finally the lack of communication *between* SBUs turns out to be a common problem for the management of environmental/sustainability issues. This aspect is also taken into account and, at least theoretically, solved by a BSC approach. These and other issues seem to suggest that the BSC process creates a very good framework for environmental/sustainability department to integrate their activities in business processes. The question is: how should companies that do not have a BSC deal with the problem? Is it at all possible to do this without these organisational 'faults' being solved?

On the other hand, by the way the BSC is used today, it seems that in the practice the 'double loop learning' process is not running as smooth as Kaplan and Norton have thought it. Companies seem to use it more for control than for learning (see discussion in Paper 5, p. 27). Since the integration of the environmental/sustainability issues is largely also a different way of reading the business environment this 'misinterpretation' of the BSC concept by firms may very well damage the environmental and social work in companies[24]. Furthermore, the championing of the tool by the financial control department (traditionally the origin and the driver of short-term orientation of firms) and its difficulty in talking about environmental and social issues might very well exclude them from the original design of the BSC. In other words what potentially could be a good tool at theoretical level might turn out to be counterproductive in the practice. How can an approach to environment and sustainability consider and counteract these distorting effects?

Nevertheless, all in all, this branch of innovation in performance measurement seems to be quite promising for the increased transparency in the value-creation process that it fosters. There are good indications that the interest towards BSC type of tools will increase in the future. The fact that environmental and sustainability professionals should be dealing with its pros and cons, seems to us, rather than an option a definite necessity.

[24] We are here referring to the discussion on the strategy formation-strategy implementation potential of the BSC. See page 31.

Bibliography of the Literature Review (Chapter 2)

Amit R., & Shoemaker P.J. (1993). Strategic Assets and Organisational Rents. *Strategic Management Journal*, 14, 33-46.

Atkinson A., & Waterhouse J. (1997). A Stakeholder approach to strategic performance measurement. *Sloan Management review,* 38:3.

Bauer, R.A & Fenn, D.H. (1972) *The Corporate Social Audit.* New York: Russel Sage Foundation.

Becker B., Huselid M. and Ulrich D. (2001). *The HR Scorecard*. Boston (Massachussets): Harvard Business School Press.

Bolmand, L. & Deal, T (1991) *Reframing organisations: Artistry, choice and leadership.* San Francisco (USA): Jossey-Bass Publishers.

Brown M.G. (1996). *Keeping Score*. New York: Quality Resources.

Christopher D. Ittner, David F. Lacker (1998). Innovations in Performance Measurement: Trends and Research implications. University of Pennsylvania

Clegg, S. R., Hardy, C., & Nord, W. R. (eds.). (1996). *Handbook of Organisation Studies*, London: Sage Publications.

Corson J.J. & Steiner G.A (1974) *Measuring Business's Social Performance: The corporate social audit*. The committee for Economic Development.

Cox,E. (1995) *A Truly Civil Society.* Sydney: NSW ABC Books.

Dutta, S., Van Wassenhove, L. & Manzoni J.F. (1994). Friends provident: A balanced Scorecard for IT Performance Management. INSEAD Case Study. Fontainebleau (F): INSEAD Publishing.

Elktington, J. (1998*) Cannibals With Forks: The Triple Bottom Line of 21st Century Business*. British Columbia: New Society Publishers.

Epstein,M. J. Flamholtz, E. & MscDonough, J.J. (1977) *Corporate Social Performance: The Measurement of Product and Service Contributions.* New York: Natinal Assocn. of Accountants.

Epstein, M.J. & Manzoni J.F. (1998). Implementing Corporate Strategy: From Tableau de Bord to Balanced Scorecard. *European Management Journal,* 16:2, 190-203.

Epstein, M.J (1999) *Counting What Counts: Turning Corporate Accountability to Competitive Advantage.* Reading (Ma): Perseus Books.

Epstein, M. & Wisner P. (2001). Good neighbours: Implementing Social and Environmental strategies with the BSC. *Balanced Scorecard Report*. May-June 2001, 3:3. Massachusetts: Harvard Business School Publishing.

Epstein, M. & Young D. (1999). Greening with the EVA. Management Accounting. January 1999, 45-49.

Estes, R.W. (1976) *Corporate Social Accounting.* New York: Wiley-Interscience.

Estes, R.W. (1973) *Accounting and Society.* New York: John Wiley and Sons.

Figge F. & Schaltegger S. (2000). What is "Stakeholder Value"? Developing a catchphrase into a benchmarking tool. University of Lunenburg (Germany).

Figge F., Hahn T., Shaltegger S. & Wagner M. (2001). The Sustainability Balanced Scorecard – A tool for value-Oriented Sustainability Management in Strategy-Focused Organisations. *7th Eco-Management and Auditing Conference,* June 2001. Nijmegen (Netherlands).

Johnson, S. (1998). Application of the Balanced Scorecard approach. *Corporate Environmental Strategy*, Summer 98, 5:4.

Kaplan R. & Norton D. (1992). The Balanced Scorecard – Measures that drive performance. *Harvard Business Review*, January-February 1992, 71-79.

Kaplan, R. & Norton D. (1993). Putting the Balanced Scorecard to work. *Harvard Business Review,* September-October 1993, 134-142.

Kaplan, R., & Norton D. (1996a). *The Balanced Scorecard*. Boston (Massachussets): Harvard Business School Press.

Kaplan, R., Norton D. (1996b). Linking the Balanced Scorecard to Strategy. *California Management Review*, Fall 1996, 39:1, 53-79.

Kaplan R., & Norton D. (2001). *The Strategy-Focused Organisation.* Boston (Massachussets): Harvard Business School Press.

Lipe, M., & Salterio, S. (2000). The Balanced Scorecard: Judgemental Effects of Common and unique performance measures. *The Accounting Review*, July 2000, 75:3, 283-298.

Low J. & Siesfield T. (1998). *Measures That Matter*. Boston: Ernst&Young Publishing.

Mooraj, S., Oyon D., & Hostettler D. (1999). The Balanced Scorecard: a necessary good or an unnecessary evil? *European Management Journal,* October 1999, 17:5. Great Britain: Elsevier Science Ltd.

Nilsson E. (2001). Balanced Scorecard – A Vehicle for the Greening of Business Meetings?: A Case study of Telia Nära AB and Skanska Facilities Management AB, Sweden. Master Thesis 2000-2001. International Institute for Industrial Environmental Economics (IIIEE), Lund University (Sweden).

Olve N., Roy J. and Wetter M. (1999). Performance Drivers. New York (USA). John Wiley & Sons.

Orssatto, R. & Clegg, S. (1999). The Political Ecology of Organisations: Toward a framework for analyzing business-environment relationships. *Organisation & Environment*. 12:3, 263-279.

Porter, M. (2001). Strategy and the Internet. *Harvard Business Review*, March 2001, 63-78.

Schaltegger S. & Figge F. (1999). Environmental Shareholder Value. WWZ/University of Basel (Switzerland).

Silk, S. (1998). Automating the Balanced Scorecard. *Management Accounting*, May 1998, pp. 38-44.

Internet Sources

Business Intelligence Survey (1998). Strategic Performance Measurement and Management Survey. http://www.bscol.com/. Available: 10 June 2001.

Annex 1 References by category

Books

Kaplan R., & Norton D. (2001). *The Strategy-Focused Organisation.* Boston (Massachussets): Harvard Business School Press.

Kaplan, R., & Norton D. (1996a). *The Balanced Scorecard*. Boston (Massachussets): Harvard Business School Press.

Epstein, M.J (1999) *Counting What Counts: Turning Corporate Accountability to Competitive Advantage.* Reading (Ma): Perseus Books

Brown M.G. (1996). *Keeping Score*. New York: Quality Resources.

Becker B., Huselid M. and Ulrich D. (2001). *The HR Scorecard*. Boston (Massachussets): Harvard Business School Press.

Olve N., Roy J. and Wetter M. (1999). Performance Drivers. New York (USA). John Wiley & Sons.

General discussion about usefulness of the Balanced Scorecard

Atkinson A. (2000). Measure for Measure. CMA management Sept. 2000, Vol.74, Issue 7, pp. 22-29.

Graham A. (2001). Challenge your Balanced Scorecard (2001). Credit Union Executive Journal, May/Jun 2001, Vol.41, Issue 3, pp 22-27.

Kaplan, R., Norton D. (1996b). Linking the Balanced Scorecard to Strategy. *California Management Review*, Fall 1996, 39:1, 53-79.

Kaplan R. & Norton D. (2001). Transforming the Balanced Scorecard from Performance measurement to Strategic Management: Part I. Accounting Horizons, Vol.15, No.1, pp 87-104.

Kaplan R. & Norton D. (1992). The Balanced Scorecard – Measures that drive Performance. Harvard Business Review, January-February 1992, pp. 71-79.

Kaplan R. & Norton D. (1993). Putting the Balanced Scorecard to Work. Harvard Business Review. September-October 1993, pp. 134-142.

Kaplan R. & Norton D. (1996). Using the Balanced Scorecard as a Strategic Management System. Harvard Business Review. January-February 1996, pp. 75-85.

Silk, S. (1998). Automating the Balanced Scorecard. *Management Accounting*, May 1998, pp. 38-44.

Containing <u>critical</u> analysis of some possible limits of the Balanced Scorecard

Lipe, M., & Salterio, S. (2000). The Balanced Scorecard: Judgemental Effects of Common and unique performance measures. *The Accounting Review*, July 2000, 75:3, 283-298.

Epstein, M.J. & Manzoni J.F. (1998). Implementing Corporate Strategy: From Tableau de Bord to Balanced Scorecard. *European Management Journal,* 16:2, 190-203

Containing Case Studies

Butler A., Letza S. Neale B. (1997). Linking the Balanced Scorecard to Strategy. Long Range Planning, Vol.30, No.2, pp.242-253.

Chia A. & Sin Hoon H. (1998). Adopting and creating Balanced Scorecards in Singapore Based companies. Singapore Management Review, pp.1-15.

Chow C., Haddad K., Williamson J. (1997). Applying the Balanced Scorecard to small companies. Management Accounting, August 1997, pp.22-27.

Davis T. (1996). Developing an employee balanced scorecard: linking frontline performance to corporate objectives. Management Decision, Vol.34, Issue 4, pp.14-18.

Ewing P. & Lundahl L. (1996). The Balanced Scorecard at ABB Sweden – the EVITA project. Paper presented at the International Workshop on Cost Management, Venice, Italy, June 27-29, 1996.

Frigo M. (2000). The Balanced Scorecard for Community Banks: translating strategy into action. Bank Accounting & Finance, Spring 2000, Vol.13, Issue 3, pp. 17-24.

Meliones J. (2001). Get Connected, Get Results, Get smarter. The physician executive, January-february 2001, pp. 20-25.

Littler K. et al. (2000). A new approach to linking strategy formulation and strategy implementation: an example from the UK banking sector. International Journal of Information Management, vol. 20, pp.411-428.

Business Intelligence Survey (1998). Strategic Performance Measurement and Management Survey. http://www.bscol.com/. Available: 10 June 2001.

Alternative-Specific uses of the Balanced Scorecard approach

Stewart W. (2000). Balanced Scorecard for projects. Project Management Journal, March 2001, pp. 38-53.

Clinton D.& HSU K. (1997). Just in time and the Balanced Scorecard: Linking Manufacturing Control to Management Control. Management Accounting, Sept. 1997, pp.18-24.

Brewer C. & Speh T. (2000). Using the Balanced Scorecard to Measure Supply Chain Performance. Journal of Business Logistics, Vol.21, No.1, pp.75-93

Non-core papers where Environment/Social mentioned with Balanced Scorecard

Bach N., Calais P., Calais, M. (2001). Marketing Residential grid-connected PV systems using a Balanced Scorecard as a marketing tool. Renewable Energy, Volume 22, pp.211-216.

Sheridan T. (1998). The changing shape of the finance function. Management Accounting: Magazine for Chartered Management Accountants, Feb. 98, Vol.76, Issue 2, pp.18-21.

Grinnell J. & Hunt H. III (2000). Development of an Integrated Course in Accounting: A focus on Environmental Issues. Issues in Accounting education, February 2001, Vol.15, No.1, pp. 19-42.

Plake M., Somers K. (1998). Strategic Alliances in the knowledge workplace. Journal of Quality & Participation, Vol. 21, Issue 4, pp.39-47.

Atkinson A., & Waterhouse J. (1997). A Stakeholder approach to strategic performance measurement. *Sloan Management review,* 38:3.

Brewer P. (2000). An Approach to Organizing a Management Accounting Curriculum. Issues in Accounting Education, Vol.15, No.2, pp.211-235.

Ittner C. & Larcker D. (1998). Innovations in Performance Measurement: Trend and Research Implications. Journal of Management Accounting Research, pp.205-237.

Bennett, .; James, P.(1998) ISO 14031 and the future of environmental performance evaluation. Greener Management International, Spring98 Issue 21, pp.71-86

Rikhardsson Pall M. (1998). Information systems for corporate environmental management accounting and performance measurement. Greener Management International, Spring98 Issue 21, p51-70

<u>Core</u> environmental/social BSC articles <u>prior to</u> September 2001

Epstein, M. & Wisner P. (2001). Good neighbours: implementing Social and environmental strategies with the BSC. *Balanced Scorecard Report*. May-June 2001, 3:3. Massachusetts: Harvard Business School Publishing.

Figge F., Hahn T., Shaltegger S. & Wagner M. (2001). The Sustainability Balanced Scorecard – A tool for value-Oriented Sustainability Management in Strategy-Focused Organisations. *7th Eco-Management and Auditing Conference,* June 2001. Nijmegen (Netherlands).

Nilsson E. (2001). Balanced Scorecard – A Vehicle for the Greening of Business Meetings?: A Case study of Telia Nära AB and Skanska Facilities Management AB, Sweden. Master Thesis 2000-2001. International Institute for Industrial Environmental Economics (IIIEE), Lund University (Sweden).

Johnson, S. (1998). Application of the Balanced Scorecard approach. *Corporate Environmental Strategy*, Summer 98, 5:4.

Radcliffe, M. (1999). Using the Balanced Scorecard to develop metrics for Sustainable Development. Greening of Industry Network 1999, Chapel Hill.

<u>Core</u> environmental/social BSC articles <u>after</u> September 2001 (not surveyed)

Bieker T., Dyllick T., Gminder C., Hockerts K. (2001). Towards a Sustainaibility Balanced Scorecard: Linking Environmental and Social Sustainability to Business strategy. *10th Business Strategy and the Environment Conference,* September 2001. Leeds (UK).

Figge F., Hahn T., Schaltegger S., Wagner M. (2001). The Sustainability Balanced Scorecard-Translatin Strategy into value –based sustainability management. *10th Business Strategy and the Environment Conference,* September 2001. Leeds (UK).

Orssatto R., Zingales F., O'Rourke A. (2001). Environment and Socio-Related Balanced Scorecard: Towards a Conceptual Framework.*10th Business Strategy and the Environment Conference,* September 2001. Leeds (UK).

Literature in German Language (not surveyed)

Deegen T. (2001) Ansatzpunkte zut integration cvon Umweltaspekten in die “Balanced Scorecard”. Lunenburg, Center for Sustainability Management.

Fahrbach, M. Heinrich V. & Pfitzner R. (2000). Strategische Umweltcontrolooing mit Hilfe del “Balanced Scorecard”, UmweltWirtschaftsForum 8, 2, 41-44.

Figge F., Hahn T., Schaltegger S., Wagner M. (2001). Sustainability Balanced Scorecard. Wert-orientiertes Nachhaltigkeitsmanagement mit der Balanced Scorecard. Luneberg: Center for Sustainability Management.

Czymmeck F. & Fassbender-Wynands E. (2001): Die Bedeutung der Balanced Scorecard im Rahmen eines auf Kennzahlen basierenden Umwelt-Controlling. Koln:Universitat Koln. Arbeitsbericht Nr. 6.

Annex 2 Today's perceived quality of performance measures

TABLE 1
Uses, Quality, and Perceived Importance of Financial and Nonfinancial Performance Measures
1996 Survey of 203 firms by Wm. Schiemann and Associates Inc.

	Type of Performance Measure					
	Financial Performance	**Customer Satisfaction**	**Operating Efficiency**	**Employee Performance**	**Community/ Environment**	**Innovation/ Change**
Information is highly valued[a]	82%	85%	79%	67%	53%	52%
Willing to bet job on the quality of the information[a]	61	29	41	16	25	16
Measures are clearly defined in each performance area[a]	92	48	68	17	25	13
Measures are included in regular management reviews[b]	98	76	82	57	44	33
Measures are used to drive organizational change[b]	80	48	62	29	9	23
Measures are linked to compensation[b]	94	37	54	20	6	12

Source: Adapted from Lingle and Schiemann (1996).
[a]Percent of executives responding to the survey who agreed with this statement.
[b]Percent of respondents using these measures who agreed with this statement.

Table A2-1 Uses, Quality and Perceived importance of Financial and Non-Financial Performance Measures

TABLE 3
Uses of Economic Value Measures in Business Planning and Incentive Plans: 1995 Survey of 114 Firms by Sibson & Co.

Economic value used in business planning/financial management[a]	41.2%
Economic value used as a performance measure in incentive plans	16.7
If economic value is used in incentive plans:	
Used in annual incentive plans only	42.1
Used in long-term incentive plans only	10.5
Used in annual and long-term incentive plans	47.4
Used in corporate and business unit management plans only	52.6
Used in corporate management plans only	5.3
Used in business unit management plans only	31.6
Used in corporate, business unit, and small group plans	10.5
Economic value is the sole performance measure in incentive plans	26.3
Effectiveness of economic value as a measure in the incentive plan:	
Very successful	26.3
Moderately successful	36.8
Not successful	0.0
Not sure	31.5
No response	5.3

[a]The survey defined economic value as cash flow or earnings above the cost of capital or discounted cash flow, including measures such as economic value added, cash flow return-on-investment, economic profit, or residual profit.

Table A2-2 Uses of Economic Value Measuresin Business Plannign and Incentive plans

TABLE 2
Changes in Performance Measures Used for Evaluating Process Improvements, Strategic Planning, and Compensation
1991 Ernst & Young Survey of Manufacturing and Service Firms in Four Countries[a]

	1988	1991	1994 (Expected)	ANOVA F-statistic
Importance of the following measures for evaluating process improvements:[b]				
Reduced costs	3.01	3.31	3.52	61.07***
Reduced errors	2.77	3.22	3.55	144.35***
Reduced cycle time	2.49	2.91	3.32	126.74***
Less process variation	2.18	2.74	3.31	208.03***
Fewer customer complaints	2.92	3.32	3.64	112.11***
Importance of the following measures in the strategic-planning process:[b]				
Customer satisfaction	2.59	3.13	3.67	233.21***
Importance of the following assessment criteria for compensation:[b]				
Senior management				
Quality	2.22	2.62	3.14	137.99***
Stock appreciation	1.86	2.00	2.15	5.91***
Profit or cash flow	2.91	3.15	3.27	19.29***
Market share or other positional measure	2.31	2.53	2.81	33.64***
Middle management				
Quality	2.19	2.55	3.13	133.16***
Stock appreciation	1.45	1.49	1.69	7.63***
Profit or cash flow	2.48	2.68	2.93	26.73***
Market share or other positional measure	1.97	2.14	2.49	37.71***
Nonmanagement				
Quality	2.03	2.29	2.85	86.69***
Stock appreciation	1.18	1.20	1.35	6.84***
Profit or cash flow	1.84	1.96	2.27	23.78***
Market share or other positional measure	1.54	1.64	1.96	27.82***

*** Responses across years are statistically different at the 1 percent level.
[a]The International Quality Study (IQS) was a joint survey of 584 organizations by Ernst & Young and the American Quality Foundation. The survey was conducted in the automobile, computer, banking and health care industries in Canada, Germany, Japan and the United States.
[b]Definition of scales: 1 = slight or not at all (trivial or no concern at all), 2 = secondary (less important, but not trivial), 3 = major (important, together with others), 4 = primary (dominant).

Table A2-3 Changes in performance measure used for evaluating process improvements and compensation

Annex 3 List of Indicators from Johnson (1998)

Broad EPI Category	Learning, Innovation, Growth, and People		Internal Business Processes	
	EPI Type	Example EPI	EPI Type	Example EPI
Energy consumption	Energy program implementation	Number of energy initiatives Hours training	Energy efficiency	Btus
Water (materials use)	Water conservation initiatives or training	Number of initiatives	Water use Wastewater generation	Gallons
Materials use			Mass balance	Input lbs./ product lbs. Product yield Ratio/percent of scrap recycled
Pollutant emissions/ nonproduct output (waste)	Pollution prevention programs Design for environment	Number of initiatives Number of MSDSs Hours of training Hours of support provided by tech. Number of initiatives Hours training in DfE	TRI emission performance Pollution prevention performance Manufacturing efficiency performance Waste generation and disposal performance	Lbs. (stack air, fugitive air, underground injection, POTW, land, surface water, off-site transfer, total) Number of pollution prevention projects Number of products designed using DfE Tons of hazardous waste generated Tons of solid waste generated Tons of waste recycled or sold Percent of waste sites audited
Spills/emergency response	ER programs	ER training hours ER drills	Spill frequency	Number of spills Volume of spills
Health and safety	Health and safety programs	OSHA training hours Safety reviews	Health and safety performance	Number of OSHA reportables Days lost Health and safety index score
Products	Environmental product benefit programs	Training in DfE	Environmental product benefits	Number or percent of new products with environmental "claims" made Packaging volume or mass
Environmental regulatory compliance	Environmental compliance programs	Env. awareness training hours Competency training hours Audit training Number of audits Corrective actions implemented	Environmental compliance performance	Audit scores
Purchasing	Purchasing programs	Env. awareness training hours Percent of purchasing staff trained in environmental considerations	Purchasing performance	Number of purchases where env. considered Reduction in key chemicals in purchased materials (e.g., cadmium, lead, CFCs, etc.) Number of env. performance issues "pushed" down to suppliers

Note: Most metrics will be reported as a per-year value; many should be normalized or standardized by production (e.g., per $1,000 sales).

Figure 3

Broad EPI Category	Customers and External Stakeholders		Finances	
	EPI Type	Example EPI	EPI Type	Example EPI
Energy consumption			Energy costs	Energy $
Water (materials use)			Water costs	Water $ Treatment $ Sewer $
Materials use				
Pollutant emissions/ nonproduct output (waste)	Community perceptions	Number of complaints	Emission costs Pollution prevention cost savings Waste generation and disposal costs	Air treatment $ POTW $ Land disposal $ Water permit $ Off-site transfer $ Pollution prevention expenditures Pollution prevention savings Hazardous waste disposal costs Solid waste disposal costs Total waste disposal costs Contingent liability $ from waste or scrap sold
Spills/emergency response	Community perceptions	Number of complaints	Costs of spills	Cost of spills
Health and safety	Health and safety external issues	OSHA violations	Health and safety costs	OSHA fines Worker's comp costs

Products	Environmental product benefits customer perception	Customer satisfaction rating
		Number or percent of customers whose environmental requirements have been met
			Environmental product benefits cost savings	Percent or $ market share for env. improved products
				$ saved on packaging reduced
				$ saved by product customers
				Product emission levels

Environmental regulatory compliance	Environmental compliance external issues	Number of EPA or state violations Number of times company staff involved in development of env. laws and regulations	Environmental compliance costs	$ of EPA or state fines
Purchasing	Stakeholder	Number of product liability lawsuits	Liability	$ spent on legal defense or settlements

Figure 3

Table A3-1 List of indicators for Environmental BSC proposed by Johnson (1998).

Annex 4 Some examples of general and specific EH&S Scorecards from Epstein & Wisner (2001)

Environmental	*Social*	*Environmental*	*Social*
Financial		**Internal Process**	
% Proactive vs. Reactive expenditures $ Capital investments $ Operating expenditures Discposal Costs Recycling revenues Revenues from 'green' products $ fines and penalties Cost avoidance from environmental actions	Philantropic contributions $ Wrokers compensation costs Value of goods donated $ Employee benefits Legal actions/costs Training budgets Reduction in hiring costs Increased sales from improved reputation	% Production and office material recycled # of certified suppliers # of accidents and spills Internal audit scores Energy consumption %facilities certified % product remanufactured Energy use Greenhouse gas emissions Hazardous material output	# Employee accidents # Lost workdays # days work stoppages $ Minority purchases Average workweek hours $ warranty claims # plant tours and visitors # non-employee accidents Ethical sourcing #supplier violations # safety improvement projects
Customer		**Learning and Growth**	
# Green Products Product safety # recalls Customer returns Unfavorable press coverage % products reclaimed after use Functional product eco-efficiency (e.g. energy costs of a washing machine)	Customer perceptions # Cause-related events supported (e.g. breast cancer, AIDS) $ Community support (safety, recreation, health) #community meetings Customer satisfaction Social report requests # Product recalls # Advertising complaints	% Employees trained # community complaints % renewable resource use # violations reported by employees # employees with incentives linked to environmental goals # functions with environmental responsibilities Emergency response programs	Workforce diversity (age, gender, race) Workforce equity # employee volunteer hours # plant closings # Ethics violations # Lawsuits Stakeholder perceptions # Voluntary disclosures #Employee grievances Community education programs

Table A4-1 Suggested Balanced Scorecard Measures for Social and Environmental Impacts

Financial Perspective	Customer Perspective	Internal Process Perspective	Learning & Growth perspective
Cost Savings - $ Saved from accident reduction - $ saved from PLC reviews Investments - $ Spent on EH&S capital projects - Remediation costs - Prevenative costs - Community improvements Revenues Sales of S&E friendly products	External customer Support - Product safety - Post-consumer waste recycled - Consumer education - # Product safety brochures distributed Goop Citizenship - # Awards - Philantropic contributions Product donations	Environmental Performance - Water use - Packaging reduction - % Solvents recycled - Energy use - hazardous waste generated - # supplier reviews - # fines - Worker exposure Employee performance - # Lost workdays - Work-related injuries-illnesses	Employee practices - Trainign hours - Ergonomic reviews - Diversity Transfer of Best Practices - # ISO 14001 certifications - # Product life cycle reviews

Table A4-2 Example of Bristol Myers Squibb S&E Performance objectives and measures

Financial Perspective	Customer Perspective	Internal Process Perspective	Learning & Growth perspective
- Reduced operating costs - Lower litigation costs - Lower administrative costs - Stock market premiums	- Product innovation - Market share increases - Improved reputation - New market opportunities	- Process innovations - Productivity gains - Reduced cycle times - Improved resource yields - Waste minimization	- Employee satisfaction - Improved stakeholder relationships - Reduced risk - Increased learning

Table A4-3 Documented payoffs of improved S&E performance

Annex 5 Criteria for Balanced Scorecard measures (Nilsson E., 2001)

Criteria for Balanced Scorecard measures
- Be strategically relevant to the business - Encourage correct behavior[25] - Link to measures to other perspectives, linking to financial success being especially important - Be clear and comprehensible for all people using the Balanced Scorecard - Be useful for setting realistic goals - Be easy to carry out - Be measurable - Be compatible with the existing data collection systems[26] - Link to the most important key success factors - Be assessed before incorporated in to the Balanced Scorecard[27] - Contribute to a balance between outcome and performance measures[28]

Table A5-1 Criteria for Balanced Scorecard measures.

Criteria for choosing measures for Environmental Performance Evaluation (ISO14031)
- Be representative to the organization - Point to the root cause - Be warning sign, help prevent problems - Help predictions concerning performance - Not be too many, not too few - Promote benchmarking - Be controllable, valid and verifiable

Table A5-2 Criteria for measures for Environmental Performance Evaluation[29]

[25] Johnson S. (1998). Identification and Selection of Environmental Performance Indicators – Application of the Balanced Scorecard. Corporate Environmetnal Strategy, Vol.5, No.4, p..40-41

[26] Olve N-G, Roy J, Wetter M (1999). Balanced Scorecard I svensk praktik. Liber Economi. Malmö. Sweden. P. 174-175

[27] Hallgårde U, Johansson A. (1999). Att införa Balanced Scorecard – en praktisk vägledning. Studentlitteratur. Lun. Sweden. P.38-39

[28] Kaplan & Norton (1996. The Balanced Scorecard. Harvard Bsuiness School Press. Boston. Massachussets. USA p. 149-150

[29] Kuhre, W Lee (1998). ISO 14031 – Environmental Performance Evaluation (EPE). Prentice-Hall Inc. New Jersey. USA. P.111-115

Annex 6 Cause Effect relationships case study (Nilsson E., 2001)

Perspectives	Key success factors Telia Nära	Key success factors of the virtual meeting-projects
Economic efficiency	Cut costs	*Follow up costs and display savings* *Managerial meeting behaviour* *Reliance* *Visualisation* *Availability* *Using virtual meetings more internally*
Market Capital	Focus on the most important customers (companies and larger accounts) Loyal customers Win back important customers lost	
Human Capital	Competent and motivated staff	Follow up time and display savings Awareness building Training

Table A6-1 The Balanced Scorecard of Telia Nära Linköping and existing key success factors as well as key success factors related to the virtual meetings

Perspectives	Key success factors SFM	Key success factors of the virtual meeting-projects
Financial	**Keep profit margin** **Increase return on assets** **Continuous cutbacks**	**Follow up costs and display savings**
Customer	Expand the Ericsson account Satisfied customers New customers Sell more to current customers Appear as "one" SFM	
Internal Processes	Resource efficiency High quality Short lead time	***Managerial meeting behaviour*** ***Reliance*** ***Visualisation*** ***Availability*** *Using virtual meetings more internally*
Innovation	More IT-services New products and services Develop existing products and services 'Develop the organisation	
Human Resources	Satisfied employees Employ more employees Training and personal development Delegate responsibility and authority	Follow up time and display savings Awareness building Training

Table A6-2 The Balanced Scorecard of SFM Stockholm and existing key success factors as well as key success factors related to the virtual meetings

Annex 7 Some Authors contact details

Name of author	Profession	Email & telephone
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Annex 8 Main Organizations that deal with the BSC

Name of Organization	Activity	Website
BSC collaborative, US	Action research and consulting on the use of the BSC concept. The head of this organisation is **Robert Kaplan**.	http://www.bscol.com/ 001 781.259.3737
Foundation for performance measurement, US	It serves as a source of information, as a forum for research and debate and as a link to tools and resources for organisations interested in developing practical new ways of measuring enterprise performance. Not so good site.	http://www.fpm.com/ 001 (202) 251-7676
2GC active management, UK	Research and consultancy firm. It is not only focused on the BSC. It also considers other performance measurement models from the accounting world and discusses relationships between them (i.e. ABC, MBO, EFQM, TQM, EVA). Very good web page with interesting summaries and presentations.	http://www.2gc.co.uk/home.asp +44 (0) 1628 421506
The balanced Scorecard Institute, US	Independent, non-profit source of information about applications of the balanced scorecard approach to management in government and other non-profit organizations.	http://www.balancedscorecard.org 001 301 903 1893
Best Practices LLC	Consultants in the field of best practice performance improvement. Their services and products are designed to assist companies improve their performance by analysing the winning practices of leading corporations	http://www.best-in-class.com/research/ 001-919-4030251

Annex 9 List of Companies using the Balanced Scorecard

Source	Companies mentioned
Kaplan And Norton (a) Book: The Balanced Scorecard (1996)	Advanced Micro Devices, American Standard, Apple Computer, Bell South, Cigna, Conner Peripherals, Cray Research, Dupont, Electronic Data Systems, General Electric, Hewlett-Packard, Shell Canada.
Olve et al. Book : Performance Drivers (1998)	ABB, British Airways, British Telecom, Coca-Cola Beverages - Sweden, Electrolux, Halifax, Kappahl, Skandia, SKF, Volvo, Xerox
Epstein 2000 Book: Counting What Counts (2000)	Analog Devices, Whirlpool, Cigna Property & Casualty, Mobil, Bank of Montreal, Skandia.
Kaplan and Norton (b) Book: The Strategy Focused Organization (2001)	Cigna property and Casualty insurance, Nova Scotia Power, Store 24, Halliburton Energy Development, Chemical and Chase Banks (now AXA), AT&T Canada (now Equifax), FMC corporation (now UNOVA), City of Charlotte, State of Washington, Duke Children's Hospital, New Profit Inc., Southern Garden Citrus, May Insitute, Montefiore Hospital, United Parcel Service, Subordinate Courts Singapore, Group Bal Mexico, Sears Roebuck and Co, Fannie Mae, University of California-San Diego, U.S. Department of Energy procurement, US Department of Transportation, National Reconnaissance Office, Shell Oil Company, United Way of Southeastern New England, Nationwide Financila Services, ABB Switzerland, Texaco, Wintherthur International, General Motors, GTE Service Corporation, J.P. Morgan.

Table A9-1. Companies reported in the literature to be using the BSC

ABB	Communications, Media and Technology	MCI	Tetrapack
Air Products and Chemicals	Conoco	Merill OS&T	The Limited
Airtouch Vodafone	Consumer & Healthcare	Merrill Lynch	Thomas Cook
Alcatel UK	Delphi - Exxon Chemicals	MMI	Trane Air conditioning
American Express	Digital Equipment	Mobil north america marketing and refining division	Transasia Biomedical
Analog Services	Dow Chemicals	Mobil Oil	UMTL - Malaysia Telecom
Anglian Water	Du Pont	Monsanto	United Biscuits Limited
Arco Chemicals	Duke Power	Motorola	Univar - Van Waters & Rogers
Armstrong Industries	Dupont	Nationwide Building Society	UNUM Corporation
Arvind Telecom	Dupont	Natwest	US Navy NRCC
AT&T	Dutch PTT	Natwest Life	Volvo
Bajaj Electricals	Electrolux	NCR	Volvo
Bank of Montreal	Eli Lily CNS	Nova Corporation	Wells Fargo
Bayer	Emerson Electric	Nova Scotia Power	Whirlpool
BBC	Energy & Chemicals	Nynex	Whirlpool Corporation
BC Hydro	EPPCO	Orange	Winterthur

BC Tel	Experian	Peoplesoft	World Bank
Bell Emergis	Fannie Mae	Petroleos Venezuela	Xerox
Bell South	Fidelity Investments	Pfizer	Zeneca
Boots Properties	Financial Services	Postbanken	Coca Cola Beverages Sweden
Boots The Chemist	Fleet	Praxair	Mass Special Olympics
Borealis	Fluke corporation	Reckitt & Coleman	City of Charlotte
Bowne	FNB-South Africa	SAGCO	MashreqBank
BP Chemicals	France Telecom	Sara Lee	Tandum
BPL Mobile	GM Information Organisation	Savola	Swiss Re
Bristol Myers Squibb	Godrej-GE	SC Johnson Wax	Mars
British Airways	Goretex	Scudder Kemper	Maritz
British Gas	Halifax	Sears	Swedish Post
British Telecom	Halifax	Sebaldous	City of Charlotte
Brown and Root	IBM	Severn Trent	Citibank
Bulgari Watch and Jewelry Division	Industrial Bank of Japan	Shell Exploration and Production	
BUPA	J P Morgan	Siegfried Chemical	
CAN	John Hancock	Siemens Building Tech	
CDIC	Kappahl	Skandia	
Celestica Limited	Kawasaki	Skandia UK	
Chase Capital Partners	Koler Co.	SKF	
Chase Manhattan Bank	LA Cellular	Smith Kline Beecham	
Ciba Specialty Chemicals	Lagoven	Solvay	
Cigna	Larsen & Toubro	Sprint	
Cigna Property and Casualty insurance	M & G	Sunsoft	

Table A9-2. Table of BSC users from consultancy firm (Source: Ian Cobbold [Ian.Cobbold@2gc.co.uk], Senior consultant for GC Active Management. The list is taken from the client list of another consulting firm predominantly working with BSC. The name of this firm was kept confidential).