The key role of corporate culture in greening the innovation process in the automotive and mechanical engineering industry

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Summary

As an empirical research project has found out, a Sustainability Balanced Scorecard (SBSC) provides sufficient potential to integrate sustainability aspects into the general management of companies (see Figge et al. 2001; Bieker et al. 2001). It is a tool that has been developed to focus on more qualitative aspects (such as social and environmental ones). As the Balanced Scorecard (Kaplan & Norton 1997) is designed to “translate strategies into action”, it provides a methodology to bridge the gap between the strategic and operative levels of sustainability management. However, the SBSC-concepts have not been implemented yet by the companies involved. Coming up from St. Gallen management model, a company’s vision and mission, aspects of strategy, structure and culture as well as supporting processes seem to be of utmost importance when defining and implementing a SBSC. Corporate culture strongly influences a corporation’s strategies, structures and supporting processes. This implies that the implementation of a sustainability-oriented strategy is more likely to be internally adopted after having explored employees’ shared assumptions or beliefs. What are fostering and hindering factors for the introduction of the above-presented SBSC-concept? The fact that a BSC or SBSC might increase internal transparency, a commitment from top management when introducing such a tool becomes crucial.

It is a shared belief inside both companies, that the strategic relevance of product-related environmental goals will be of major importance in the future. Here, a commitment of top management regarding the strategic importance of such goals is most likely to be supported by the middle and lower management. Today, employees in both companies attach a rather medium level of importance regarding product-related environmental aspects. This is possibly due to the fact that the customer is currently not willing to pay more for environmentally friendly products. Nevertheless, there is the underlying assumption in both companies that a shift of paradigms towards “greener” products will take place. This will evolve rather “step by step” and strongly depend on a “greener customer” or “responsible politicians” that are willing to shift existing frameworks. This might indicate both a larger room to move for companies regarding greener products and services and employees’ willingness to improve the environmental performance of future products. A relative huge need for action is expected in the realm of training people in the field of environmental aspects. Similarly, employees’ scope regarding environmental aspects as well as a change of organisations openness or flexibility (i.e. “acting vs. bureaucracy”) is expected to improve.

1. Introduction

In recent years many corporations have implemented environmental and/or social management systems (such as ISO 14000, EMAS or SA 8000) in order to manage and control sustainability-related issues. However, these management systems often fall short in companies’ practice for several reasons. First of all, they often remain on the operating level, i.e. they are not linked to the
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Strategic planning and management of the company. As recent research has revealed, there is a lack of appropriate strategies regarding the management of environmental and/or social aspects in an effective and efficient way (e.g. Dyllick & Hamschmidt 2000; Baumast & Dyllick 2001). Secondly, these management systems are mostly executed separately from the traditional general management systems which are used by top and middle management to control and run business. Moreover, rarely do ecological products and services go beyond legal requirements which is possibly due to the lack of environmental know-how in R&D departments (e.g. see Centre for Sustainable Design, 1996; Lenox et al. 1996; McAloone 1998). These problems of sustainability management have been the motivation for a qualitative research project at the Institute for Economy and the Environment at the University of St. Gallen (IWOe-HSG). In the project, the management tool and methodology of the traditional Balanced Scorecard (Kaplan & Norton 1997) have been developed further towards the „Sustainability Balanced Scorecard“ (SBSC) integrating ecological, social as well as economical aspects. But apart from rather “technical” questions regarding instruments for the management of corporate sustainability, aspects of corporate culture seem to be of major importance, if a company wants to introduce instruments for the management of social and/or environmental aspects (e.g. SBSC).

In the following, the concept of the SBSC is generally lined out (2). Coming up from an empirical research project, section 3 presents key success factors when implementing such a tool for the purpose of sustainability management. Then, sustainability-oriented strategies are lined out representing one important core element of a SBSC (4). Within chapter 5 and 6 findings from two case studies are presented stressing the importance of corporate culture. This paper focuses on two business sectors that are highly relevant because of their environmental performance. First of all, the automotive sector seems to be of major interest (i.e. Volkswagen), because its products largely contribute to the exploitation of natural resources (e.g. crude oil) and the problem of climate change. Secondly, there is Unaxis, a Swiss supplier providing machines for the IT industry. These machines use several hazardous substances and a huge amount of energy. As in both companies the future “ecological footprint” of products and services is of major importance, the paper deals with sustainability management inside their R&D departments. Chapter 7 summarises the most important factors for companies on their way to sustainability management.

2. The concept of the Sustainability Balanced Scorecard

This chapter presents the methodology of the Sustainability Balanced Scorecard (SBSC). The SBSC-concept is based on the “traditional” Balanced Scorecard (BSC), a management tool and methodology developed by Kaplan and Norton in 1997 (c.f. Kaplan & Norton 1997). The idea to use the tool also for the purpose of environmental management is not completely new and has already been suggested by Kaplan & Norton. In recent years, the research project “A Management Cockpit for Corporate Sustainability” has developed the BSC further to a SBSC as a concept for sustainability management (e.g. Epstein & Wisner, 2001; Schaltegger & Dyllick 2002).¹

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What is a Balanced Scorecard? The BSC can be understood as a management system, which is structured according to the logic of the cybernetic management circle (“plan-do-check-act”). Kaplan & Norton position the Balanced Scorecard as a tool for organisations to manage the demands of relevant stakeholders and to translate strategies into action (“from strategy to action”). Possible stakeholders that are strategically relevant could be shareholders, customers or employees. Their demands are integrated into core management of companies within a “financial”, “customer”, “learning” and “process” perspective (see Figure 1 below). So, the frame of the Balanced Scorecard consists of four perspectives (see Figure 1). Each perspective consists of relevant strategic goals, key performance indicators (KPIs) and measures to achieve them. One should emphasise the fact that the concept remains open for integrating further relevant stakeholders or perspectives, e.g. an environmental perspective (cf. Kaplan & Norton 1997, pp. 33). When conceiving the BSC, Kaplan and Norton, maintained that companies are lacking sophisticated tools for the management of intangible or qualitative assets (e.g. customer satisfaction, processes quality, infrastructures, know-how). Intangible assets, however, seem vital in order to stay competitive in the future. So, the Balanced Scorecard provides ‘enablers’ that focus on the achievement of strategic goals in the future (leading indicators) as well as results (lagging indicators) to depict the effectiveness and efficiency of measures in the past. Strategies can be usually interpreted as a set of hypotheses of causes and effects. Thus, within a BSC, the relevant goals and corresponding indicators are linked to each other revealing this structure of causal relationships. Such relationships are both relevant within each perspective and also between them. Objectives of the “learning” perspective, for instance, serve as ‘enablers’ for the achievement of goals of the other ‘overarching’ perspectives (e.g. customers, finance).
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Figure 1: The methodology of the Balanced Scorecard (adapted from Kaplan & Norton, 1997, p. 9)

- In the predominant financial perspective objectives similar to traditional systems of management and accounting are included to depict the financial performance of the company. In contrast to traditional management instruments, the BSC concept stresses the importance of so-called value drivers for future profitability.

- The customer perspective aims at the identification of relevant customers and market segments that contribute to the financial goals. In terms of a market-based management of the company, this dimension makes it possible to get the internal processes, services and products into line with the necessities of current and future markets.

- Within the dimension of internal processes, firms should identify and structure efficiently the internal value-driving processes that are vital regarding the goals of customers and shareholders (e.g. innovation, production and after-sales; see Kaplan & Norton, 1997 p. 89).

- Human resources being an underlying strategic factor of success, Kaplan and Norton suggest a perspective for learning and development that tries to depict all staff- and organisational-related aspects that are important regarding organisational reengineering processes (cf. Weber & Schäffer 2000, pp. 201).

The BSC coming up with both financial and non-financial aspects is an openly structured and flexible management instrument that provides a high potential regarding sustainability management (cf. Schaltegger & Dyllick 2002). It is true that the BSC has been developed for the purpose of linking strategic goals in its four dimensions to the financial bottom line and to increase business profitability. Nevertheless, it is suitable for the management of sustainability or corporate social responsibility (cf. Bieker & Waxenberger 2002). It is possible that the “financial” perspective and corresponding goals serve the achievement of society-related objectives and is no longer positioned “on top” (e.g. the Volkswagen example later on). However, as the BSC is a tool to implement strategies it is necessary to define a sustainability policy and strategy beforehand. This fact is reflected by positioning the “vision” or “strategy” in the centre of Figure 1. What is a SBSC compared to the traditional Balanced Scorecard concept? The Sustainability Balanced Scorecard (SBSC) is based on the traditional BSC, but provides a broader scope by integrating all three dimensions of sustainability. Thus, it has a different content and possibly a different structure (“architecture”). In addition to the four perspectives of the traditional BSC, it is possible to include a fifth “social” perspective in order to explicitly address stakeholder issues. The SBSC may help to detect important strategic environmental and/or social objectives of the company, a single Strategic Business Unit (SBU) or department and to illustrate causal relationships between qualitative “soft facts” and the financial performance (cf. Bieker et al. 2001, pp. 29). Thus, the use of a SBSC as a planning instrument could enhance transparency of potentials for (economic, environmental or social) value-added emerging from social and/or ecological aspects and prepare the implementation process of the strategy. It offers a reference frame (“strategy map”) which makes it possible to understand how causalities between the single economical, ecological and social dimensions and goals may arise. In addition to this, the environmental or sustainability department of a company can gain experience with the instrument itself and may, by doing so, increase internal acceptance. Consequently, the setting-up of a SBSC
may be already a very valuable training process. But there are several success factors to consider when implementing a SBSC. These are discussed in the following section.

3. Implementing a Sustainability Balanced Scorecard (SBSC)

A new management instrument entails deep changes in management. A SBSC is new because of both its methodology and its “content” (sustainability) that might question established strategies, structures and processes. So the role of corporate culture may become crucial when implementing a new tool such as the SBSC. There are several instruments and methods for exploring corporate culture that aim at clarifying the underlying assumptions and values of social groups (cf. Sackmann 1991; Sackmann 2002; Pümpin 1984; Schein 1985; Kobi & Wüthrich 1986). They allow an in-depth analysis of „theories in use“ (Argyris & Schöon 1978), i.e. in how far are values such as vision/mission statements or strategies incorporated by the company’s employees or in how far are sustainability-related issues are approved of inside the organisation. Coming up from a rather deductive approach, Schein (1985) suggests a rather generic analytical framework for the research of corporate culture including the following dimensions: (reality and truth, room and time, essence, behaviour and relationship between individuals).

Schein’s methodology turns out to be very useful when analysing issues of sustainability management in corporate practice (cf. Seidl 1993), but it remains on a rather abstract level. To put Schein’s framework in more concrete terms for the assessing of sustainability management within the context of R&D departments, it has been adapted to the framework of St. Gallen management model. This model has been developed at the university of St. Gallen over the past three decades (cf. H. Ulrich/Krieg 1974; Malik 1981; Pümpin 1980, Bleicher 1992; Rüegg-Stürm 2002). This model is also suitable for the purpose of sustainability management, because it has been conceived as an open system that might be adapted for many business purposes (e.g. “traditional” management, management of authorities etc.). Moreover it comes up with a broad stakeholder-oriented approach including also non-economical ones such as government/state, public/NGOs or employees. It explicitly addresses the context of the company (society, nature, technology, economy) and corresponding subjects for interaction (resources, norms and values, stakeholder interests). Moreover, aspects of change management are included (renewal, optimisation). These turn out to be very useful in the realm of product-oriented sustainability management since a shift of paradigms inside the automotive or mechanical engineering industry may reduce the environmental impact of future products. The following Figure 2 illustrates the St. Gallen management model.

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Figure 2: The St. Gallen management model (cf. Rüegg-Stürm 2002)

What are the key elements for sustainability management within the St. Gallen management model? Coming up from this model, the vision and mission, aspects of strategy, structure and culture as well as supporting processes are of utmost importance and will be related to within the empirical analysis later on.

Key success factors within sustainability management may lie on a rather normative or strategic level and a rather operative level. On the normative and/or strategic level, a commitment from top management to proceed to the notion of corporate sustainability as well as a corporate vision and mission and business principles appear most relevant. Coming up from such normative and strategic aspects, instruments like the Sustainability Balanced Scorecard aim at implementing sustainability-related goals on the operational level. But when defining and implementing a Sustainability Balanced Scorecard, strategic, cultural, structural as well as methodological aspects seem to be most relevant. Similar to the traditional BSC concept, the definition of a sustainability strategy on the corporate level seems vital, because within each perspective of the SBSC goals, measures and performance indicators have to be defined. There is practical evidence, that in corporate practice, this step is not trivial at all and indeed may be very time-consuming, because even “sustainable leaders” may frequently lack explicit sustainability strategies (cf. Bieker et al. 2002a).

The key role of corporate culture

Corporate culture strongly influences, on the one hand, a corporation’s strategies, structures and supporting processes. This implies that the implementation of a sustainability-oriented strategy is more likely to be internally adopted after having explored employees’ shared assumptions or beliefs. On the other hand, corporate culture is strongly affected by a change of a company’s strategy, structure or processes. This aspect appears to be most relevant if a company is willing to proceed towards sustainability management. But, of course, this implies a rather cultural change that is very difficult to realise. “Adding values to an organisation implies a culture change. Mere policies and procedures alone will not bring about change.” (Driscoll/Hoffman, 2000, p. 7) In the
following some rather general aspects (i.e. hindering and fostering aspects) of corporate culture within sustainability management are presented before describing the importance of management’s commitment, strategy, structure and processes hereafter.

What are hindering factors in the sphere of corporate culture when proceeding towards sustainability management? There is no denying the fact that in any process of change management, aspects of hierarchical power or prestige as well as career-related interests might have a negative effect on the introduction of a SBSC (cf. Schaltegger & Dyllick 2002). A new management instrument entails deep changes in management. A SBSC is new because of both its methodology and its content that might question established strategies structures and processes. Thus, it is certainly true that, on the one hand, a SBSC bears risks. But, on the other hand, a SBSC provides the company as well as selected departments and employees with chances. There seems to be a trade-off between chances and risks that determines the internal acceptance of the instrument. Here cultural factors might play an important role, because the underlying assumptions, thoughts and beliefs of employees regarding strategic and goal-oriented thinking and acting, quantitative controlling tools or the concept of sustainability itself are of utmost importance. It is certainly true that the use of key performance indicators (KPIs) inside the company, on a department and/or employee level may increase transparency and is consequently often rejected by employees.

What are fostering aspects inside corporate culture regarding the implementation of a SBSC? An important precondition for the internal acceptance of the instrument is a commitment from top management to introduce a SBSC. Such a top-down oriented proceeding implies both a methodological backing of the instrument itself as well as the importance of sustainability-related issues. Moreover there is a body of evidence that top management should consider possible mental reservations of employees and tackle them in a proactive way (“bottom up”). Here a discourse-oriented infrastructure may put the new tool to an internal discussion before implementing it. A development of the instrument together with departments and employees involved can be reasonable so that they adhere to the principles and goals of the company or the SBU’s (see Bieker & Waxenberger 2002). As a SBSC stresses the relevance of ecological and social aspects, a cultural analysis regarding corporate sustainability may provide top management with valuable data. The more aspects of sustainability are internally accepted by employees, the more open-minded will they react towards new concepts of sustainability management. In addition to this, further cultural aspects such as influence and hierarchical power may also turn out to be relevant within a SBSC process. Here the executive personnel as well as environmental and social managers should be willing to promote “their” issue inside the company and also accept that environmental or social aspects are no more “owned” and managed exclusively by themselves. As a SBSC might substitute existing management systems, environmental or social managers might be afraid of a loss of power or independence and feel an increased pressure to succeed. This might entail a disapproval of the instrument inside the organisation.

Commitment from top management

Top management should voice the importance of the “good will” to engage with sustainability aspects with all its consequences. The very first and important decision to subordinate every action under the premise of legitimacy is necessary to make the crucial difference between social/environmental and mere strategic action. This decision must be communicated throughout the whole company in order to avoid non-integrated actions. As Kaptein (1998, p. 147) puts it:
“The result would be only a personal achievement of one or a few employees (e.g. in the environmental department). Even if such a solo action were to result in exactly the same measures as a process in which all employees were involved, it still involves a different outcome ... It is short-sighted to assume that simply implementing a number of measures will result in an increase of the sustainability content of the organisation.” Such a commitment from top management seems to be invaluable within sustainability management since this frequently entails a change of systems or instruments as well as corporate strategies.

**Vision and mission**

The *teleological* dimension of ethics requires the alignment of a company’s actions to a goal (according to Greek telós = target, goal). Therefore goal setting is an important step within sustainability management. The goals of a company find their expression in two factors: the definition of success and the company’s vision or mission. Success is usually defined in terms of money, i.e. profit. If a company establishes a more elaborated form of the measurement of success it has resources to reach other goals. The satisfaction of employees for instance could be one element of an overall corporate success – but as an end in itself, not as a means of more profit (as happy employees are supposed to be more efficient). A good relationship to the neighbours of a firm could be included in an integrated success model as well as a non-polluted environment.

Within a vision or mission statement, business principles represent the normative guidelines of a company. They are not norms themselves but standards for the creation of norms in concrete situations. The obligation to principles corresponds to the *deontological* dimension of ethics. Legal requirements can also be seen as principles to comply with, but a legal compliance programme would not be enough to be considered as “sustainable”. The difference between legal compliance and business principles is the degree of the obligation. Whilst legal compliance is compulsory, principles of sustainability are voluntary and thus meet the requirements of autonomy, which is the basis of every acting that wants to be called “sustainable”.

**Strategic aspects**

A BSC as well as a SBSC implies strategies. But rarely do such explicit strategies exist in the area of sustainability management. Thus, it is important to define suitable strategies within a strategic planning process. From there, strategic goals, key performance indicators as well as appropriate measures can be deduced. Moreover it seems to be important that the corporate policy and the strategy match well with each other (“strategic fit”). If not, employees may feel disoriented and insecure what the company stands for. Let me illustrate this idea with a quotation from an employee: “Internally, neither do we know what is our vision or are our strategies nor where to go from here.” But also stimuli from outside may force a company to lay down explicit strategies. As an example, the Swiss mechanical engineering company Unaxis has been confronted with increasing customers’ requirements regarding the environmental aspects of its products. So, the SBSC project at Unaxis’ triggered a process of formulating an “Environmental, Health and Safety” policy that stresses the importance of environmental and social goals. In addition to the existence of explicit strategies, the management tools that are used by the

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3 See for instance the research from L. Kohlberg who defines the post-conventional level as highest level of moral development – and post-conventional is nothing else than autonomy. Kohlberg, 1981; Colby/Kohlberg (et al.), 1987.
company are highly relevant. Project findings support the idea that those companies which have already introduced a “traditional” Balanced Scorecard were acquainted with routines of planning and implementing corporate strategies. This turned out as a success factor since such companies already had well-defined and consistent strategic goals.

Generally speaking, if there is a lack of suitable strategies, one frequently observes problems when defining appropriate strategic goals for the company. Moreover, well-established routines of planning and budgeting are a fostering factor when setting-up a SBSC. Apart from strategic or cultural issues, structural aspects and supporting processes seem to be most relevant when setting up and introducing a BSC or a SBSC.

Factors of corporate structure

If a new instrument is to be “alive” inside the management process it has to be internally accepted. Additionally it should be integrated into the general management of the company and revised regularly according to changes in corporate strategy. To achieve this, the SBSC can be used inside core management processes, i.e. as a management instrument in the business and review processes as well as a supporting tool in strategic planning and budgeting. Moreover, a SBSC may better integrate environmental and/or social management systems into the “core” management within only one instrument. This may help to avoid the above-mentioned redundancies or internal frictions of “separate” management systems. A SBSC may include the environmental and social goals and relieve existing sustainability-oriented management systems. But this implies fundamental structural changes inside the organisation and because of internal cultural resistances, a sensitive way of action. Therefore, before setting-up a SBSC, one should carefully analyse which management systems could eventually be removed and assess the room to move within corporate culture. It is obvious that, here again, commitment from top management to remove existing systems by a SBSC becomes crucial. If this is not done beforehand it might entail another system that is not integrated into core management and is internally rejected as another “additional” tool that only entails extra work. This again might lower the internal acceptance.

Supporting Processes

Such processes comprise a) training and qualification, b) incentives and reward schemes as well as c) communication processes. Training again has three aspects within a sustainability management system and can be applied in different phases of the implementation process. a) The first task of training is to build support for sustainability-related awareness not only of the management but also of the employees. b) The second aspect is to help all members of an organisation to be able to master difficult conflicts between sustainable and mere strategic aspects. With special dilemma training (see Karssing, 2000, pp. 85 and 97) employees should learn how to deal with dilemmas and how to decide in an legitimate way. c) A more technical aspect is the training of how to handle a sustainability management system and all the connected systems like an environmental or quality management system, or how to conduct an audit or to write a report.

To improve employee’s motivation regarding corporate sustainability, it is highly recommendable to link financial incentives according to their contribution to the achievement of corporate sustainability. There is nothing about motivating employees by granting bonus schemes
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cf. Herzberg, 1973). By doing so, employees could be sensitised for their responsibility regarding sustainability and consider the corporate principles in their operational actions. Here, in addition to financial incentives, symbolic rewards are also of major importance (“prices for the environment”, “employee of the month” etc.). This could have a signalling effect to the other staff to also commit themselves to sustainability. Internal training could provide the development of abilities, skills and know-how concerning aspects of sustainability. At this stage, these aspects especially aim at the continuous improvement of the corporate culture regarding sustainability.

Communicational processes may be the most important elements of a consistent sustainability programme that is based on discursive ethics. Sustainability-oriented communication can be both internal and external. External communication provides interaction with persons or groups outside of the company as sender or as receiver. In the field of sustainability, internal communication processes are more difficult to implement than one would expect. Internal newspapers, letters, e-mails or company meetings for the sake of sustainability frequently do not create an open dialogue.

4. Sustainability-oriented competitive strategies

The BSC or a SBSC is a tool to transfer strategies to the operational level of corporations (‘from strategy to action’). The tool requires that normative and strategic elements be defined in advance. In contrast to this, we frequently observe a lack of sustainability policies (“normative gap”) and/or strategies (“strategic gap”). This entails that the definition of strategic goals, measures may appear difficult. The following aspects try to explain why visions, strategies and concrete objectives are difficult to link to each other:

- As has been stated above, strategies do not exist at all or are at least not explicit. This is of course frequently the case as far as environmental or social aspects are concerned.

- The strategies are very similar to visions which are rather broad and not understood by employees.

- Lack of support from the strategic development department when setting-up SBSC. So, the gap between strategy and action is not entirely bridged. But it might, at least, become closer, since strategies are taken into account when defining objectives.

In this chapter, sustainability-oriented competitive strategies are discussed as possible strategic input for a SBSC. Research in various sectors (building, food, chemical, IT, freight traffic, mechanical engineering) concerning the competitive aspects of environmental management, carried out at the Institute for Economy and the Environment at the University of St. Gallen (IWOe-HSG) over the past decade, revealed an empirical body of evidence that sustainability strategies (as presented in Table 1) can be classified according to their strategic orientation (market or society) and strategic behaviour (reactive or proactive) (Dyllick et al. 1997; Gminder et al. 2002 pp. 108-112; cf. for an English version: Bieker 2003). They offer five possible sources of benefits a company can realise when putting them into practice:

- Strategy “safe” aims at reducing and managing risks

- Strategies of the type “credible” are tackling issues of image and reputation
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- The improvement of productivity and efficiency is possible by implementing the strategy type “efficient”
- The “innovative” strategy aims at differentiating corporation’s products and services in the market
- “Transformative” strategies aim at creating new markets by shifting existing institutional frameworks

The following table summarises the five different sustainability-oriented strategic approaches concerning their strategic orientation (Public vs. market) and strategic behaviour (reactive vs. proactive). Please note that the first strategy type “safe” can be regarded as a “hygienic factor” for any other strategy type and is, consequently, not represented in Table 1.

*Table 1: The four different types of sustainability strategies*

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These strategies may apply for a whole company, selected areas of business, sites, certain products or technologies. However, this classification of strategies seems to be idealistic, since in practice these types of strategies may overlap and cannot always be clearly distinguished from each other. Of course, companies, offering only a few sustainable products do not necessarily behave in the same way concerning all their SBUs, sites or technologies employed. Nevertheless, the order (from 1 to 4) in which these strategies are presented provides companies with a possible sequence for getting acquainted with the management of sustainability. This implies, that companies of the “innovative” type, for instance, are highly recommended to have carefully institutionalised a risk management to stay credible as a provider of sustainable products or services.

Gminder et al. (2002, pp. 95) hypothesise that different strategic approaches imply different types of a SBSC (e.g. architecture, causal relationships). Thus, for two strategy types a particular “architecture” (i.e. number and name of perspectives), possible generic strategic goals and corresponding causal relationships are discussed. Here, the “efficient” (Unaxis) and “innovative” (Volkswagen) strategy types are presented for illustrative purposes. This appears suitable, since a rather proactive (innovative) approach may include far-reaching strategic goals and another structure within the SBSC than a rather reactive (efficient) impetus. Apart from the question how sustainability-oriented strategies may be transferred to the operating level of a company with a SBSC, key results of an assessment of corporate (sub-)culture (i.e. inside the R&D) are discussed.4

4 The empirical findings presented within this paper usually refer to the context of Volkswagen’s and Unaxis’ R&D department and not necessarily to the company as a whole.
5. Sustainability management at Volkswagen’s R&D

In the following the corporation’s and R&D’s vision/mission, deduced strategies, existing structures as well as supporting processes are presented.

Vision/Mission

Volkswagen’s leitmotif “Volkswagen – the most successful ones” applies not only for the “traditional” management but shows also relevance for the management of several social and environmental aspects (e.g. introduction of environmental management systems, “green” of production processes). However, on the product level, the focus on technology leadership comprising innovative and competitive products represents the company’s and R&D department’s most important goal (cf. Volkswagen’s annual report 2002, p.10). This goal is achieved by enlarging the product range by cars of the upper class. Let me illustrate this by a quotation of the former CEO: „Not regarding where I am, I like designing limousines with characteristics of sports cars, these are my roots.” (cf. Piëch, 2002, S. 266) In addition to this, Volkswagen has developed a few ecological concepts like the 3 l Lupo or the 1 l car (design study). Inside the R&D organisation, coming from up from a cultural analysis, employees strongly believe that the customer is not interested in environmentally friendly cars, but on products representing fun, dynamics at a sensible price.

Volkswagen’s strategy map

Environmental and social impacts frequently offer an opportunity of differentiating companies’ products and services in the market place. Sustainable products and services can be found in many markets and sectors (e.g. the food sector, the car industry, fair-trade, management of natural resources in the wood or fishing industry) and contribute to a unique selling proposition (USP). The following paragraph outlines selected relevant perspectives, possible strategic goals as well as selected indicators and measures of SBSC concept for Volkswagen’s R&D (for a whole case study see Bieker, Herbst & Minte 2002). Sustainability strategies at Volkswagen are not explicit. Coming up from the fact that the environmental department would like to have “their” topic implemented on the corporate level in order to manage it in a systematic way, there is a draft of such a strategy that is being discussed on the board level. To develop the Sustainability Balanced Scorecard for Volkswagen’s R&D department, possible strategic goals have been brainstormed and evaluated in accordance with their relevance.

In the customer perspective, goals may focus on developing markets for sustainable products or on changing existing markets. Inside Volkswagen’s research department, the “development of innovative solutions” both in applied and basic research is of utmost importance (see Volkswagen’s R&D strategy map Figure 3). Here, the development of innovative solutions does not necessarily include environmentally friendly ones since the customer is internally not perceived as environmentally conscious. Innovations can be generally found by carefully analysing human needs and determining corresponding functions of appropriate future products.

This is supported by “shaping of institutional frameworks”, i.e. actions developing politics and society as well as by “exploring sustainability-related chances and risks” and is addressed inside

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5 This concept was not introduced by Volkswagen’s R&D department. Possible reasons are presented hereafter.
the *society perspective*. The society perspective seems to be, generally speaking, of utmost importance if a company aims at shifting institutional frameworks. Here, in general, the development of society regarding its awareness towards sustainability appears sensible (e.g. through campaigns). This is a necessary prerequisite for the hundreds and thousands daily decisions of consumers and politicians.

Inside the *learning perspective*, goals such a “high degree of motivation and performance”, a “high level of knowledge” as well as “gaining ideas for innovations from outside”, stimulate the development of innovative solutions inside the customer perspective.\(^6\) This reveals the idea that goals inside a strategy map frequently are interdependent: The “development of innovative solutions within basic research” is, for instance, achieved by a “high degree of motivation and performance” of employees, by “exploring of chances and risks within ‘sustainable mobility’” and depends on a certain “volume of budget”. The “exploring of chances and risks” leads for example to an “improvement of internal customer satisfaction” (i.e. the engineering or marketing departments) as well as the “development of integrated mobility concepts”.

Another (methodological) lesson that can be learnt from the Volkswagen case is the possibility to depict conflicting goals. In Figure 3, such situations of conflict between goals are visualised with reinforced ends of the arrows. This is extremely helpful within the realm of sustainability management. It is certainly true that the financial goal to “ensure budget discipline” conflicts with the “development of innovative solutions within basic research”. These situations of conflict can be analysed and solved according to their relative strategic importance.

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\(^6\) The realisation of turnovers due to innovative concepts has not explicitly included inside the financial perspective of Volkswagen’s SBSC concept for two reasons. First of all, the research department is rather budget-driven and secondly turnovers from inventions and innovations are only generated in the remote future.
Figure 3: Concept for the strategy map of Volkswagen’s Research department

Here, again, the role of corporate culture appears to be most relevant, because it is the shared assumptions and beliefs of Volkswagen’s employees regarding the future that become crucial when implementing a rather proactive sustainability strategy in the future. This is to be discussed in the following section.

What do people believe – the relevance of corporate culture

In another step of research (i.e. within a cultural assessment), the current and future relevance of the above-presented goals inside the Volkswagen concept have been analysed. What are fostering aspects for the sustainability management at Volkswagen? The degree of importance have been classified from 1 to 5 (1 representing “not important” and 5 “very important”). What emerges most memorably from both the qualitative and quantitative analysis is that none of the above-presented strategic goals for the R&D department are judged as “not important” at the moment (medium 3.5). Almost all of the goals are expected to be important for the R&D department in the future (average 4.0). So most the employees inside the R&D department expect these goals to be of major importance in the future indicating a fairly huge room for action regarding especially the following goals: “Exploring chances and risks within sustainable mobility”, “the development of environmentally friendly products”, “quick transfer of research results in services and products” or “the development of integrated mobility concepts”. Apart from the need for action, this may reveal also a kind of employee’s readiness to adopt these goals in the future. The following Figure 4 summarises the relevance of the strategic goals from employees’ point of view (1 representing “not important” and 5 “very important”).

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7 These data have been gained by another series of interviews with 16 managers from the R&D department and an additional quantitative analysis (n=12 questionnaires). As product-related environmental aspects have not been explicitly addressed on the level of the SBSC-concept, the relevance goal “development of environmentally friendly products” has been analysed.
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Another fostering aspect regarding the implementation of a rather proactive sustainability management approach is the sustainability-oriented tradition of the Volkswagen corporation (e.g. innovative reward systems and working schemes, green production sites also in developing countries).

What are rather *hindering factors* when implementing a sustainability-oriented *instrument* such as the SBSC? Inside Volkswagen, there is rather a sceptical attitude of both the Balanced Scorecard and a far-reaching product-oriented approach for achieving corporate sustainability. As far as the concept of the Balanced Scorecard or SBSC is concerned, employees strongly believe that this instrument frequently increases internal transparency. As one employee has put it: “The Balanced Scorecard rather contradicts our internal culture since we are not working with quantitative oriented management systems. Besides, our corporate culture aims at preserving the status quo and is not really open for a change regarding new management tools.” This again shows the necessity of a commitment from top management to implement both the concept of sustainability and the Balanced Scorecard if the SBSC is to be introduced.

One might assume that there is a strong link between what is perceived to be “real” (e.g. what does the customer really want?) and “successful” (e.g. in how far do environmental aspects serve as a key success factor?) and what will be done inside a company’s R&D department (cf. Seidl 1993). Thus the internal perception of the usefulness of ecologically friendly products becomes crucial as this has an effect on today’s activities in R&D and, in consequence, the future

*Figure 4: Relevance of sustainability-related goals at VW’s R&D (current vs. future situation)*

- Gain ideas for innovations from outside
- High degree of motivation and performance
- Internal customer satisfaction
- Supporting the shaping of institutional frameworks
- Development of innovative solutions
- Ensure volume of budget and discipline
- Exploring chances and risks within „Sustainable Mobility“
- Quick transfer of research results to products and services
- Development of environmentally friendly vehicles
- Development of integrated mobility concepts

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ecological footprint of the company’s products. Inside Volkswagen’s R&D department one can, again, analyse the strong belief that greener products such as Volkswagen’s 3 l Lupo are not economically successful because of customer’s restrained willingness to pay a slightly higher price. As the former CEO of Volkswagen summarises the development of the 3 l Lupo: „This was tied to a relatively high use of resources especially because of the lightweight construction resulting, at the end of the day, in an additional price of almost 10%, which cannot be completely removed regarding the lower running costs. The willingness to pay for generous reasons is not overwhelming.” (Piëch, 2002, p. 209)

Nevertheless, inside Volkswagen’s R&D department, there is the underlying assumption that a shift of paradigms towards greener cars will take place in the future. On the one hand, the development of “alternative motor concepts” (e.g. fuel cell, hybrid concepts) and “alternative fuels” (i.e. on the basis of renewable resources), the improvement of “fuel efficiency” or “integrated traffic systems” is internally perceived to be most relevant in the future. On the other hand, “traditional” characteristics of automobiles such as the reaching of “huge distances” or “high speed” is expected to be of minor relevance in the future. The following Figure 5 summarises the relevance of product qualities today and in the future from employees’ point of view (1 representing “not important” and 5 “very important”.

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8 The higher price is primarily due to using lightweight construction materials (e.g. aluminium).
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Figure 5: Qualities of Volkswagen’s products (as-is vs. future)

Their is an internal strong belief, that such a shift of paradigm towards greener cars will rather evolve in a gradual than a revolutionary way and will strongly depend on a “greener customer” buying more environmentally friendly cars or “responsible politicians” that are willing to shift existing frameworks (e.g. by means of ecological taxation). Bearing in mind that cars that are put in the market in 2020 will have an expected life-time or “carbon burden” of another ten or fifteen years, the “traditional” petrol-based mobility concept is internally expected to be dominating also in the remote future. As one R&D manager summarised it: “We will have all these changes in future because competition or legislation will force us to develop greener cars ... But if we promoted today ecological product qualities in a proactive way ... and if ecological goals were in engineer’s mind, such changes would take place twice as fast. I.e. changes, that we are expecting for 2050, would be possible by 2025.”

But such a way of thinking may not, of course, be typical only for the Volkswagen case. Louis Schweitzer, the CEO of the French car maker Renault also sees little opportunities for a shift of paradigms coming up from a technological breakthrough such as the fuel cell: „We do work very hard to improve the technology but I do not believe there is in the foreseeable future, and I am speaking of 2030 here, a technology which will solve the problem. There is no technological miracle.“ (Louis Schweitzer, Renault’s CEO 09.09.2002.)

Supporting processes

Supporting processes include a) training and qualification, b) incentives and reward schemes as well as c) communication processes.

As far as training and qualification in general is concerned, employees would welcome more and better programmes in this respect. Regarding environmental aspects one R&D manager stressed the future potential of the recently founded corporate university (“AutoUni”) to better integrate environmental and social aspects into the training of Volkswagen’s engineering people. Inside Volkswagen’s R&D department there are generally speaking little incentives or reward schemes. This refers also to the development of ecologically friendly products. The main driver for personal success is technically or market (and not ecologically) driven, i.e. especially projects that are “innovative” or provide a high potential to be put on the market are internally perceived as “successful” ones. Coming up from the (internally perceived) “fact” that the customer, again, has only a restricted willingness to pay more for green products, the room to move regarding such concepts seems to be restrained.

Regarding internal communication processes employees would expect better environmental information. Despite the fact, that the environmental department is embedded into Volkswagen’s research department, it is not directly involved into the main processes such as research projects because of a lack of resources. As a consequence environmental information is internally perceived as a “debt to be collected” at the environmental department.

Some concluding remarks

How is it possible to introduce an instrument for sustainability management such as the SBSC into Volkswagen’s R&D department? First of all, we observed some fostering aspects such as the
sustainability-oriented tradition of the Volkswagen corporation that has contributed to a sustainability-oriented culture as far as social or environmental aspects (i.e. on a process level) are concerned. Moreover, it is a shared belief inside the R&D department, that the strategic goals of the SBSC concept will be of major importance in the future. This reveals both a fairly huge room for action and employees’ willingness to contribute regarding goals such as “exploring chances and risks within sustainable mobility”, “the development of environmentally friendly products” or “the development of integrated mobility concepts”. Here, a commitment of top management regarding the strategic relevance of such goals is most likely to be supported by the middle and lower management. Nevertheless, there is the underlying assumption inside Volkswagen’s R&D department that a shift of paradigms towards “greener” cars will gradually take place in the future and will strongly depend on a “greener customer” or “responsible politicians” that are willing to shift existing frameworks. The fact that employees strongly believe that the BSC or SBSC frequently increases internal transparency represents a rather hindering aspects for sustainability management at Volkswagen’s. Here, a commitment from top management to introduce such a tool become crucial.

6. SBSC “efficient” for enhancing productivity and efficiency

Regarding environmental management this strategy is well-known and broadly applied as “eco-efficiency” (Schmidheiny 1992). In industries, it seems to be the most prominent sustainability-related strategy, because it has successfully helped to reduce both costs and “the ecological footprint” (Wackernagel & Rees 1996) by achieving better energy-, water and material-efficiency. Thus, the Unaxis “Displays” division, a Swiss supplier providing coating machines for the IT sector, aims at realising potentials for increasing eco-efficiency of its products. As the running of the machines is tied to a huge consumption of cost-intensive resources such as energy, cleaning gases (e.g. SF₆ providing a huge global warming factor) and water at the customer’s sites, product-related goals aim at reducing the use of such resources and, in consequence, improving the environmental performance of the machines. In the following key aspects of sustainability management at Unaxis’ Displays division are addressed.

Vision/Mission

Unaxis’ vision and mission statement includes environmental and social aspects. But inside the organisation there is the underlying assumption that the stakeholders addressed in the strategic triangular (customers, investors and employees) are of major importance compared to “other stakeholders” such as the society or environment. This is because the main focus of corporate policy lies both in the improvement of stock performance and customer satisfaction (“creating outstanding customer value”). One R&D manager has described the reasons that prevent him from integrating more environmental issues as follows: “At first, there is the management of

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9 On the social side, strategies of this kind may try to improve “socio-efficiency” (Dyllick & Hockerts 2002) by supporting employees in a way that both their productivity of work as well as their degree of job satisfaction can be increased (e.g. through flexible conditions of work and payment).

10 When completing the present paper (August 15th 2003), the cultural analysis was not finished yet. Thus, it presents preliminary quantitative findings coming up from an employee’s survey in Unaxis’ Displays division (n=39 people). Theses statistical results are to be completed by qualitative aspects stemming from twenty explorative interviews inside Displays’ R&D department. These will be presented during the conference.
priority, i.e. the right product at the right time and the right cost. It takes a lot of time to do this and consumes 99% of our time. We do not take care so much of environmental issues because it is not high priority for competitors or customers.” The following Figure 6 visualises the corporate vision and mission of the Unaxis Balzers AG.

**Figure 6: Unaxis’ vision and mission (source: Unaxis Balzers AG)**

**Strategy (“efficient”)**

Here, rather generic possible goals as well as those coming up from the Unaxis “Displays” case are presented (see Figure 7).

The objective of such a strategy type is, generally speaking, enhancing the eco- or “socio-effiency” (Dyllick & Hockerts 2002) of business processes. Relevant success factors of this strategy are as well in the attitude (i.e. way of feeling, thinking or behaving) of employees as in technical measures. Hence the learning and development and the process perspective seem to play in general an important role within such a SBSC. In the learning and developing perspective of Unaxis’ “Displays” measures for the sensitisation of employees may ensure an efficient dealing with resources and machines.

Within the process perspective the business processes have to be checked systematically regarding environmental or social potentials for improvement. The ones enabling cost savings and providing win-win situations by reducing the use of resources (e.g. energy or waste) are to be tackled first. The innovation process can be focused as well as, in the long run, innovations are valuable enablers for the sustainable design of products and may lead to an “improvement of efficiency of machines”. In the Unaxis’ Display Division, the reduction of input of resources both in the assembling and testing phase on the Swiss Unaxis’ site and in the running of the machines at their customers’ (Asia) appear most relevant. In addition to this, the reduction of travelling activities as well as transports (shipping of assembled machines) represent goals for improving Display’s product efficiency.

Inside the customer perspective, the process goals may lead to a “reduction of the cost of ownership” that is determined by the use of cost intensive resources. Besides, an increased target utilisation (i.e. raw material in the production process) or the “prolonging of machines life” time seem to be most relevant. In the financial perspective, the reduction of costs (e.g. through saving
of resources) becomes visible. In the Unaxis case, “additional sales” coming up from a reduced cost of ownership and “cost savings” (e.g. materials, less travel and shipping costs, less use of resources in the assembling and testing phase) may increase the Division’s “profit situation”.

![Figure 7: The SBSC-concept for the division “Displays”](image)

What are fostering and hindering factors for the introduction of the above-presented SBSC-concept? First of all, a “traditional” Balanced Scorecard has already been implemented on a divisional level and is internally approved of. An integration of several sustainability-related goals into this “traditional” BSC is possible. However, it is obvious that due to the current economic situation of Displays division (i.e. decreased profitability or loss of customers), the above-presented sustainability-related goals have not been implemented yet. Further hindering and fostering factors can be found by assessing the corporate (sub-)culture inside Unaxis “Displays” division. Results of a quantitative employee survey (n=39) are presented in the following paragraph.

**Corporate Culture**

As far as the protection of the environment in general is concerned, most of Displays’ employees today assume that this is an important issue. But on the level of the company or “Displays”, environmental issues seem to be of medium relevance (average 3.3). The improvement of processes on the Displays’ site (assembling and testing of machines) is, according to Display’s employees rather of minor relevance (average 2.7) compared to the ecological qualities of the products (average 3.2). However, the importance of ecological qualities of the products can be explained by the fact, that the improvement of eco-efficiency may lead to a reduction of resources at the customers’ and, in consequence, to a reduced cost of ownership. A rather medium importance of environmental-related aspects for “Displays” is possibly due to the fact that the customer is currently not willing to pay more for environmentally friendly products.
One shared assumption of Unaxis Display’s employees is that the need for action to improve both, processes and ecological product qualities, will become higher in the future. Thus, the importance of ecologically friendly products is expected to be more relevant (average 4.3). 71% of the employees would agree that product-related aspects will be important or very important in the future. So the relevance of improving both, the processes (average 3.7) and ecological qualities of Display’s products (average 4.1) is, in the future, expected to be important. The relevance of ecological product qualities will shift from rather medium to important in the future. 85% of the polled (compared to 36% today) think that ecological product qualities are becoming an important factor for Display’s business success. This might, similarly to the Volkswagen case, indicate both a larger room to move for “Displays” and employees’ willingness regarding the environmental performance of Displays products in the future. The following Figure 8 summarises the above-mentioned aspects revealing the relevance today (on the left) and in the future (on the right) with „1“ indicating a low and „5“ a very high level of importance.

![Figure 8: Comparison of the importance of environmental aspects (as-is vs. future)](image)

The fact that a huge majority (i.e. 71%) of Display’s employees think that environmental aspects will be important or very important for customers in the future reflects an internal agreement concerning a shift towards “greener” products. How can this change be achieved?

Employees’ room to move regarding environmental goals is currently described as medium. Almost 49% of the people surveyed, think that both the rooms to move of Unaxis and its employees (regarding the improvement of the environmental performance) are currently not satisfactory (average 2.7 and 2.6).

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11 This fact has also been emphasised by the CEO of the Unaxis Group in a personal interview, stressing the growing importance of the cost of ownership for Asian customers. In Asia, the resource water, that is used for the cooling of the machines, is becoming scarcer and scarcer and, consequently, more expensive.
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Figure 9: Aspects of ecological change (as-is vs. future)

This can be explained by the fact that environmental aspects are, from the customer’s point of view, only of medium importance. This leads to the opinion, that Unaxis’ scope regarding more ecologically friendly products will reach only a rather intermediate level in the future (average 3.2). Apart from this rather medium ecological conscience of the customers, further possible reasons for a rather restricted room to move both for Unaxis and its employees can be found in the internal “openness” (acting vs. bureaucracy) or the know-how of employees regarding environmental aspects (“ability”): Only one third of the employees agree that inside the Displays Division “acting in an autonomous way” is preferred to “bureaucracy”. The level of training regarding environmental know-how is internally currently not judged to be satisfactory (average 2.4).

Generally speaking, all aspects of an ecological change presented in Figure 9 are expected to be more relevant in future. A relative huge need for action or a huge need for a future change is expected in the realm of training people in the field of environmental aspects. 74.4% of the employees would expect a rather good level of training in the future. Moreover, employees’ scope regarding environmental aspects as well as a change of organisations openness or flexibility (i.e. “acting vs. bureaucracy”) is expected to improve. So 62% of the people surveyed are expecting a higher priority of “acting in an autonomous way” and a corresponding shift of bureaucratic structures. As far as Unaxis’ room to move towards more environmentally friendly products is concerned, people are expecting only a rather slight improvement (from 2.7 to 3.2) that appears compared to the other aspects rather less proportionate and is possibly tied to an expected moderate customers’ shift towards environmentally friendly products (from 3.2 to 3.8 in Figure 8) To summarise the key results coming up from the employees’ survey, one might say that employees at Unaxis “Displays” are expecting a shift towards ecologically friendly products in the future and are expecting changes in the field of both Unaxis’ and employee’s scope and training. Training as part of supporting processes is addressed in the following paragraph.

Supporting processes

Supporting processes include a) training and qualification, b) incentives and reward schemes as well as c) communication processes.
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As far as training and qualification is concerned, there is a huge need for action inside the Displays division. As has been outlined above, people in the R&D department do not feel well-prepared regarding environmental aspects. Incentives and reward schemes are not directly linked to the achievement of environmental goals. Such incentives are granted according to the accomplishment of the company’s goals. As the customer is of utmost importance, additional payment depends on the customer satisfaction index. As Unaxis’ Business Excellence Manager has put it: “The environment is not one of the most urgent goals, but customer satisfaction. This is why incentives are not established regarding the environmental performance of our products. Even my job as a Business Excellence Manager is judged by the degree of customer satisfaction despite the fact that I have no direct influence on this.”

The exchange of information in general is perceived as “good” inside Unaxis Displays. But their is a need for action as environmental communication is concerned. As one R&D manager has put it: “We do not have the knowledge to include more environmental aspects (beyond the SF6 debate) and to know what exactly is good or bad for the environment (e.g. energy, material, transport). If we are to include more environmental aspects, we need some information concerning strong factors of ecology, i.e. to quantify the impact of designing, building and running the machine. We need some time to concentrate on this topics.”

7. Conclusion and some implications

The concept of a “Sustainability Balanced Scorecard” offers a possibility for companies to translate sustainability visions and strategies into action. This approach seems to be interesting for both researchers and practitioners because it shows how intangible assets may contribute to the sustainability of companies. Moreover the SBSC provides high potential for the integration of environmental and social goals into the core management of companies. This represents a huge step forward for the environmental and social management. However, coming up from St. Gallen management model, a company’s vision and mission, aspects of strategy, structure and culture as well as supporting processes are of utmost importance. Corporate culture strongly influences a corporation’s strategies, structures and supporting processes. This implies that the implementation of a sustainability-oriented strategy is more likely to be internally adopted after having explored employees’ shared assumptions or beliefs.

As the BSC is a tool to implement strategies, it is necessary to define a sustainability policy and strategy beforehand. But apart from the definition of policies or strategies, the development and implementation of such a SBSC does not simply represent a rather “technical” definition of perspectives, objectives, indicators and measures. It is a complex, highly micropolitical process that requires patience, power and persistence as well as an understanding of corporate culture. Thus, people pushing these processes need to be aware of cultural implications when setting up and introducing a SBSC. If it is not top management itself that encourages the setting up and introduction of such a tool, powerful “promoters” may turn out as key success factors. Moreover, the broad participation of employees in the development process combining a top-down and bottom-up approach, an attitude of being open and willing to learn, a skilful project management and a good introduction of the tool into the management of the company and processes seem to be important success factors. These factors are typical for change management processes, but what is particularly for sustainability? It is the mindset of the powerful persons who are able to
influence corporate culture. It is the way of acting of environmental and “social” managers: do they try to keep “their subject” within their power sphere or do they let other employees and departments determine goals, KPIs and measures? Do they promote the project as their personal one and are possibly afraid of other colleagues joining a promising project? Do they really support the idea of integrating sustainability into traditional management? Or do they rather prefer keeping “their own” environmental and social management systems in order to preserve their positions, departments or working spheres? If sustainability managers overcome such “conservative” attitudes, if they are aware of cultural aspects and able to discover "windows of opportunity", they may achieve a sound integration of sustainability in the traditional management. But it may represent a long, hard and winding path to follow.

What are fostering and hindering factors for the introduction of the above-presented SBSC-concept? The fact that Volkswagen’s employees strongly believe that the BSC or SBSC entails an increased internal transparency represents a rather hindering aspects for sustainability management at Volkswagen’s. Here, a commitment from top management to introduce such a tool becomes again crucial. In contrast to the Volkswagen case, a “traditional” Balanced Scorecard has already been implemented at Unaxis “Displays” and is internally approved of. An integration of several sustainability-related goals into this “traditional” BSC would be possible. However, it is obvious that due to the current economic situation of Displays division (i.e. decreased profitability or loss of customers), the above-presented sustainability-related goals have not been integrated yet. Coming up from the fact that employees in both companies (Volkswagen and Unaxis) expect a higher relevance of ecologically friendly products, a shift of paradigms is more likely to happen. As Halme (2002) puts it: “... the unfreezing of old beliefs depends on the weight of external pressure and on internal conditions, especially the organization’s tolerance to new ideas. Unfreezing means that for a period of time, organization members are no longer directed by their old beliefs and do not yet have future directions” (cf. Halme 2002, p. 1101). An improvement of the environmental performance does not necessarily imply a strong change regarding core beliefs and attitudes of a company as some authors suggest (e.g. Shrivastava 1995). A learning process may also be triggered off during the course of action of an environmental programme.

How is it possible to introduce an instrument for sustainability management such as the SBSC into on a company or department level? Here, again, cultural aspects seem to be very important. First of all, we observed some fostering aspects such as a sustainability-oriented tradition (e.g. the Volkswagen case) that has contributed to a sustainability-oriented culture as far as social or environmental aspects in general are concerned. Moreover, it is a shared belief inside both companies, that the strategic relevance of environmental goals will be of major importance in the future. Here, a commitment of top management regarding the strategic importance of such goals is most likely to be supported by the middle and lower management. Employees in both companies attach a rather medium level of importance regarding product-related environmental aspects. This is possibly due to the fact that the customer is currently not willing to pay more for environmentally friendly products. Nevertheless, there is the underlying assumption in both companies that a shift of paradigms towards “greener” products will take place “step by step” in the future and strongly depend on a “greener customer” or “responsible politicians” that are willing to shift existing frameworks. This might indicate both a larger room to move for companies regarding greener products and services and employees’ willingness to improve the environmental performance of future products.
All aspects of an ecological change (i.e. acting in an autonomous way, room to move, level of know how) are expected to be more relevant in future. A relative huge need for action or a huge need for a future change is expected in the realm of training people in the field of environmental aspects. Similarly, employees’ scope regarding environmental aspects as well as a change of organisations openness or flexibility (i.e. “acting vs. bureaucracy”) is expected to improve.
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