THE BUSINESS OF WATER AND SUSTAINABLE DEVELOPMENT

THE 2002 JOHANNESBURG DECLARATION on Sustainable Development stated that by the year 2015, the proportion of people who are unable to reach or to afford safe drinking water and the proportion of people who do not have access to basic sanitation.

Given the United Nations' predicted growth in global population from 6.1 billion in 2000 to 7.2 billion by 2015, this commitment will pose formidable challenges. To meet it, by the end of just a decade and a half, approximately 6.6 billion people will need to have access to safe drinking water supplies. This is more than the current population of the world, and involves not only maintaining existing levels of supply but also providing new or upgraded services to 1.7 billion people. The challenge for sanitation is equally daunting: 5.8 billion people will need to be serviced, including new access provision for 2.1 billion. Even if these ambitious targets are met, representing a major achievement for the global community, there will still be approximately 650 million people in the world without access to safe drinking water and 1.4 billion without sanitation.

What is clear from this is the magnitude of the problem facing the international community in terms of water supply and sanitation. Continuation of the status quo and the type of progress made during the 1990s will not permit the Johannesburg targets to be met. Indeed, it will be necessary to promote a combination of many different, new and innovative approaches, each of which will contribute towards the overall targets. These approaches must include technological advances that identify new sources and improve the quality of those already in use; managerial techniques that increase the efficiency and effectiveness of service delivery at both micro and macro scale; and fiscal approaches that take advantage of additional financial resources to make improvements affordable.

In the past each of these aspects was seen as primarily the responsibility of government, which supported research into technology, managed supply and disposal systems and provided the funds to pay for them. This view has changed — beginning in the 1980s and increasing in the 1990s with growing moves towards privatisation of many aspects of the water sector. Underpinning this has been a shift away from seeing water as a public good that is essential for life with subsidised supply provided as part of an overall welfare system, to a more market-oriented approach where the state, although still responsible for maintaining universal access to water services, uses market forces to meet this aim.

The Business of Water and Sustainable Development aims to illustrate the range of approaches that will be necessary if the percentage of the global population having access to adequate and safe water and sanitation is to be increased in line with the brave assertions from the Johannesburg Summit. Some of the approaches will be large-scale “Western-style” improvements involving the creation of new business models, their effectiveness assessed by traditional approaches of fiscal and social analysis. Such schemes may be instigated and partly funded by governments, but are increasingly turning to the private sector for money and expertise. In contrast, many smaller communities would be better served by following another path to improved water supply and sanitation. Because of their size, location or traditions they may achieve better results through the adoption of local small-scale solutions. Non-governmental organisations have been very active in this area, but to extend their operations many are seeking to adopt a more business-like model. All water supply and waste disposal agencies, large or small, need to support and encourage continued research into technological solutions that seek out better, more sustainable ways to use our increasingly scarce supplies of good quality fresh water.
THE BUSINESS OF WATER AND SUSTAINABLE DEVELOPMENT

A CASE STUDY OF THE BERLIN WATER COMPANY, GERMANY

With the balanced scorecard

Environmental Management

4

The action and not just the effort...
The case study presented here shows how, as a result of a project involving the company’s environmental manager and the University of St Gallen, the strategic importance of the environment was enhanced, primarily by integrating sustainability into the main management tool, the balanced scorecard. A sustainability balanced scorecard was first developed for the environmental department of the BWC; then, using this, as well as actively participating in the first rework cycle of the existing balanced scorecard of BWC, the environment was discussed and reintroduced as a strategic concern. A company-wide environmental goal was developed, introduced and translated into indicators and measures (see Gminder and Bergner 2002).

4.1 Using the balanced scorecard for managing sustainability

The concept of the balanced scorecard (BSC) was developed in the beginning of the 1990s by Kaplan and Norton (Kaplan and Norton 1996) in order to bridge the gap between strategic management and operational daily management. The BSC became successful because of its simple yet intelligent design, ease of communication and flexibility of application. It can be applied at the corporate, business unit, department or even employee level. Its potential for use as a management tool for corporate sustainability has been discussed for a number of years, and although the existing approaches primarily emphasise the financial aspects, it has been found that the BSC approach can successfully integrate other sustainability aspects such as the societal and environmental (see Bieker et al. 2001; Epstein 1996; Epstein and Wiser 2001; Figge et al. 2002; Gminder and Bieker 2002; Hockerts 2001; Johnson 1998; Schaltegger and Dyllick 2002; SIGMA 2001; Zingales and Hockerts 2002).

4.1.1 What is the balanced scorecard?

The term ‘balanced’ refers to a balance between soft facts of organisational development and hard facts of finance, a balance between internal and external stakes and a balance of leading and lagging indicators. The BSC approach has two main components. One of these is a management tool that is built up from three aspects:

- Objectives
- Key performance indicators (KPIs) that measure progress in achieving the objectives (so-called leading indicators and strategic projects, such as the number of customer orders)
- KPIs that measure the results (so-called lagging indicators and targets, such as profit or turnover)

1 The study was carried out within the research project ‘Sustainability Balanced Scorecard’ (SBSC) of the Universities of St Gallen (Switzerland) and Lüneburg (Germany), funded by the German Ministry for Education and Research (BMBF).

The other part of the BSC is a management methodology for translating strategic goals into action and supporting the ‘management by objectives’ idea. The traditional BSC comprises four perspectives: financial, customer, process, and learning and development. The perspectives are established in order to manage the concerns of the stakeholders, customers and employees and also to address aspects of business processes, finance and corporate development. Each organisational unit that applies the BSC can choose the number and naming of the perspectives. A recent development is the recommended inclusion of a fifth perspective, that of sustainability. Within each perspective, objectives, indicators and measures are all defined.

A sustainability balanced scorecard (SBSC) is a type of BSC specifically designed to reflect the issues and objectives of corporate sustainability. In order to clarify appropriate sustainability strategies and translate them into action, it is generally recommended that managers first design a separate SBSC. This must then be integrated into the traditional BSC in order to ensure a holistic view of sustainability. This process will help overcome the distinction between a traditional financially oriented management approach and one emphasising sustainability or environmental management concerns. Figure 4.1 shows how the SBSC can be integrated either completely or partially. It also shows the option of creating a further perspective applicable to societal management (for an explanation, see Gminder et al. 2002: 121).

Where a traditional BSC does not yet exist, the development of the BSC and the integration of sustainability can be done in one step (see the case study of Volkswagen, in Bieker et al. 2002). Even where a traditional BSC exists, the development of a separate SBSC may not be necessary. Instead it may be sufficient to develop new environmental or societal goals, then enrich them with indicators and measures and integrate them into the traditional BSC in the course of the next review cycle, as was done in the case study of the BWC discussed here.

An important structural element of the BSC is the strategy map. This is a diagram that shows all perspectives and all objectives at a glance. The objectives are linked by arrows expressing the cause-effect relationships between the different objectives. It is a rule in a traditional BSC to place the financial perspective at the top and follow this with all links in that perspective. This rule may need to be reappraised when the orientation is skewed toward sustainability. In addition, the links between the objectives may be contrary, and the earlier a contrary relationship is made clear the better the company can seek ways to resolve potential conflicts. If this is not done, management may be unaware of problems that will become apparent to employees responsible for implementing the BSC at the operational level.

4.2 Integrating the environment into the balanced scorecard of the Berlin Water Company

The case study focuses on integrating environmental protection into the BSC at a company level. The first step is to evaluate the existing company situation. Once this has been done the task is to explain how environmental objectives, indicators and measures can be developed and integrated into the company BSC. The final step is to examine the results and draw conclusions.
The company's objectives are directly integrated as goals of the BSC, each specified by between two to four indicators and by a range of measures. The reporting cycle of the BSC is not monthly as usual, but quarterly. Individual business units have also established BSCs. All BSCs are still in the trial phase and need to be completed and enhanced through application and evaluation, and in interviews most employees claimed that the BSCs were still too weak and subordinate to the budget plans.

### 4.2.3 The management of environmental protection

The strategic importance of environmental protection for the BWC is clear. Groundwater is the crucial resource for the core business of the BWC (i.e., selling clean drinking water), and the purer the groundwater the lower the cost of treating it to drinking-water standards. Strong treatment processes for waste-water are of similar importance, because exploitation and discharge is done in the same geographical area, so the quality of the discharged water influences the quality of the ground water. Environmental protection is also critical in the mechanical processes of the works, the burning of sewage sludge and eco-efficiency in the administration.

The task of environmental protection is decentralised across the business units, where it is the responsibility of environmental managers, co-ordinators and skilled workers. Central support and co-ordination is provided by the Shared Service Department for Operations Officers and Environmental Affairs (VBU [Vorstandsausschuss Beauftragte und Umweltschutz]). The VBU is in charge of environmental organisation and legal compliance, providing environmental training, checking the environmental performance of the works and identifying potential societal and legal trends. It has 14 employees whose tasks are determined mostly by the legally defined officers for waste, water protection, emissions, accidents and radiation protection.

Since the partial privatisation the main focus of the company has been to optimise the formal protection of the environment, as shown in Figure 4.2. Indicators are used to guide the framework of internal environmental data surveys (e.g., the results of water analysis; some 480,000 analyses are made from 86,000 samples each year). The costs and quantity of waste are managed by means of the SAP software, and data from the water and sewage works are reported monthly. The BWC does not publish an environmental report but supplies data for the reports of its private co-owners—Vivendi and RWE.

### 4.2.4 The integration of environment into the balanced scorecard

To enable the integration of environmental protection into a BSC it is important to develop objectives, indicators and measures according to the structure of the BSC. Apart from the formal structure it is also essential to integrate environmental protection into the organisational processes (e.g., the review processes of the BSC) and into the organisational hierarchy and the minds of the employees. To achieve this it is necessary to co-operate with the department that manages the BSC and get support from the board or the CEO. "Soft" processes, such as talking to people, convincing them and including them in development activities, are far more important for the success of a BSC than "hard", more formal actions such as defining objectives, indicators and measures, but both have a role to play. The head of the VBU department at the BWC was well aware of the importance of "soft" processes, though sound "hard" action was guaranteed by the support of the VUE, which manages the BSC. In this organisation the company level was considered to be the most appropriate for integration of environmental protection; Figure 4.3 shows the steps taken in the integration process.

Before starting training workshops, strategic clarification of the value of environmental protection was necessary at the board level. This clarification was not easy because the company was struggling with the operational change from non-profit bureaucracy to profit management, and the opinions of the four board members differed. After three months of uncertainty, the shared service departments responsible for the BSC (the VUE) and for the environment (the VBU) took action themselves and decided to start with four workshops and to develop proposals for the company objectives as well as operationalising them for the BSC.

Participants in the workshops were employees of VUE and VBU, together with those from the department of water and the sewage works co-ordination. First, the
Figure 4.3: Process of integrating environmental protection into the operation of the plant company


4. ENVIRONMENTAL MANAGEMENT WITH THE BALANCE COEFS.

4.1. Background on the Environmental Protection

4.2. Indicators and targets

4.3. Capacity building

4.4. Environmental monitoring

4.5. Environmental education

4.6. Environmental management

4.7. Environmental protection

4.8. Environmental restoration

4.9. Environmental impact assessment

4.10. Environmental policy

4.11. Environmental legislation

4.12. Environmental regulations

4.13. Environmental standards


4.15. Environmental reporting

4.16. Environmental audits

4.17. Environmental management systems

4.18. Environmental management plans

4.19. Environmental management systems

4.20. Environmental management systems

4.21. Environmental management systems

4.22. Environmental management systems

4.23. Environmental management systems

4.24. Environmental management systems

4.25. Environmental management systems

4.26. Environmental management systems

4.27. Environmental management systems

4.28. Environmental management systems

4.29. Environmental management systems

4.30. Environmental management systems

4.31. Environmental management systems

4.32. Environmental management systems

4.33. Environmental management systems

4.34. Environmental management systems

4.35. Environmental management systems

4.36. Environmental management systems

4.37. Environmental management systems

4.38. Environmental management systems

4.39. Environmental management systems

4.40. Environmental management systems

4.41. Environmental management systems

4.42. Environmental management systems

4.43. Environmental management systems

4.44. Environmental management systems

4.45. Environmental management systems

4.46. Environmental management systems

4.47. Environmental management systems

4.48. Environmental management systems

4.49. Environmental management systems

4.50. Environmental management systems

4.51. Environmental management systems

4.52. Environmental management systems

4.53. Environmental management systems

4.54. Environmental management systems

4.55. Environmental management systems

4.56. Environmental management systems

4.57. Environmental management systems

4.58. Environmental management systems

4.59. Environmental management systems

4.60. Environmental management systems

4.61. Environmental management systems

4.62. Environmental management systems

4.63. Environmental management systems

4.64. Environmental management systems

4.65. Environmental management systems

4.66. Environmental management systems

4.67. Environmental management systems

4.68. Environmental management systems

4.69. Environmental management systems

4.70. Environmental management systems

4.71. Environmental management systems

4.72. Environmental management systems

4.73. Environmental management systems

4.74. Environmental management systems

4.75. Environmental management systems

4.76. Environmental management systems

4.77. Environmental management systems

4.78. Environmental management systems

4.79. Environmental management systems

4.80. Environmental management systems

4.81. Environmental management systems

4.82. Environmental management systems

4.83. Environmental management systems

4.84. Environmental management systems

4.85. Environmental management systems

4.86. Environmental management systems

4.87. Environmental management systems

4.88. Environmental management systems

4.89. Environmental management systems

4.90. Environmental management systems

4.91. Environmental management systems

4.92. Environmental management systems

4.93. Environmental management systems

4.94. Environmental management systems

4.95. Environmental management systems

4.96. Environmental management systems

4.97. Environmental management systems

4.98. Environmental management systems

4.99. Environmental management systems

5. THE USE OF WATER AND ENVIRONMENTAL DEVELOPMENT
4.3 Conclusions

At the BWC, an acceptable solution was developed for managing environmental protection by using the BSC, and the results of the case study work had high practical benefit for the company.

From a theoretical point of view, the case study has shown that the BSC is a management tool that is flexible enough to deal with environmental and societal issues. It offers a method to translate the strategies of corporate sustainability into action and integrate them into the general management of a company, so that sustainability no longer has to be managed apart from other management tasks and systems. It has also shown that environmental protection is only one of several strategic objectives of a company. It does not provide the amount of detail that an environmental manager would need; thus a company SBSC neither substitutes for environmental management nor removes the need for there to be an effective environmental management system (such as ISO 14001 or EMAS) in place.

The SBSC can be a good way to bring discussions about corporate sustainability issues to the attention of general management, but it is only a tool to get people to sit down and talk about the issues. The real integration takes place in the minds of the employees, especially the top management. The BSC enables workshops, discussions, meetings and communication to clarify the importance of corporate sustainability. It also encourages the translation of corporate sustainability policies into action by integrating them into general management rather than simply paying lip service to the issues.

Waterworks management is under enormous financial pressure at the moment, whether it be under private or municipal ownership; thus other issues may seem far more important than sustainability. In a situation where all thoughts and actions are checked against profitability, environmental protection is quickly filed under ‘costs or expenses’, where it may be incorrectly suggested that in order to reduce costs it is necessary to reduce environmental protection. Although this may bring short-term gain, the mid-term and long-term costs are liable to be far higher: ‘In Paris they need 18 steps for purifying the drinking water’, the vice head of VUE reported, ‘in Berlin we just need two because our groundwater is still so clean’. The importance of a clean environment and clean water resources for a water company was a permanent topic in workshops and interviews for this study. Most employees acknowledged a need, and even demand, for a pro-environment policy from top management, arguing that environmental protection should never be subordinated to productivity and quality for political reasons.

This case study shows that the discussion of environmental protection leads to a revaluation of the ‘new’ (profit-only) management way of thinking. The ‘new’ management tool BSC places the topic firmly on the agenda. Without it, environmental protection may be reduced to the minimum level that allows for legal compliance, an approach that undervalues the strategic importance that pro-environment policies have in the business of water supply and waste-water treatment. As summarised by a member of the workshop team:

The research project was helpful to discuss with the board, to get clarification about just how important a clean environment is for a clean product. And that this issue should be not neglected, just because the current focus is on profit.

References

Part 2