

DEPARTMENT OF ENVIRONMENT,
TECHNOLOGY AND TECHNOLOGY MANAGEMENT

**EHS Management, Sustainability Reporting, Marketing
and Corporate Governance:
Inspiring the Metals Recycling Industry**

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EHS Management, sustainability reporting, marketing and Corporate Governance: Inspiring the Metals Recycling Industry

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1. Introduction

Society in general has become more risk adverse and intolerant of the burden, both social and environmental, caused by industrial activities. In response to this novel perception and this changing business environment, governments and organizations are devising ways towards a more socially and ecologically responsible way of doing business that also supports the principle of sustainable development.

However, sustainable development in general poses a challenge to the mindset of organizations which came about in the industrialization period of the 20th century: the performance of companies is increasingly judged by stakeholders not only by the services, products and profits they make, but also by the impacts they have on human and social well-being and on the natural environment. An ever growing body of evidence shows that companies which take a more sustainable approach enjoy substantial positive (economic) benefits (Brown, 2005).

A competitive industry which is sustainable at the same time should adopt innovative business solutions that help satisfy society's needs while optimizing the use of resources and ensuring that all steps are taken to prevent harm to human health and the environment. Moreover, it is essential to demonstrate good practice in ethical behavior, to

respect the culture and rights of individuals, and to adopt the highest standards of corporate governance and accountability.

In this article, we discuss the case of an imaginary company called Infinite Recycling. The company is globally active and is composed of three Business Groups. The core business of Infinite Recycling is recycling metals, metal components and materials in general. The company is committed to adopt and implement the most recent environment, safety and health standards and management systems.

We investigate why and how Infinite Recycling might profit from elaborating an annual sustainability report complementary to current environment and safety reporting. The next section depicts Infinite Recycling's business case of sustainability. Section 3 outlines the advantages for Infinite Recycling and its Business Groups in publishing a sustainability report, and section 4 describes how Infinite Recycling can improve its eco-efficiency management. Section 5 summarizes the possibility of marketing reinforcement in the recycling sector by using sustainability issues while section 6 integrates the previous ones by suggesting a framework for Sustainability Corporate Governance. Section 7 benchmarks the 2006 sustainability reports from 5 leading companies. Finally, our last section draws conclusions by offering a sustainability project fiche for our imaginary company.

2. Value drivers and Sustainability

The well-known Brundtland definition of sustainable development objectives states that “sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations World Commission on Environment and Development, ES1, 1987) and is recognized worldwide as a standard. The latter definition, used *in se* and not in a context¹, is widely used because the objectives can be interpreted very broad. Used this way, the Brundtland

¹ The report containing the Brundtland definition actually deals with more specific matters and explains more thoroughly how the definition should be interpreted. If it is used without a context, interpretations of the definition are diverse.

definition hardly helps in developing a sound business case: it lacks specificity and is not action-oriented.

Sustainability is a dynamic concept and although goal and meaning are well stated in the 1987 UNCED report, its implications will vary from company to company. It is based on acknowledgement of responsibilities as well as their impacts in terms of risks and opportunities for business. Indeed, it should be noted that since Brundtland and Agenda 21 (i.e., the action program for sustainable development within the UNCED report) (ES1, 1987), sustainability has become a business issue. The main reason for the latter is the link between sustainability issues and economic performance: as a rule, in managing a company, actions taken today will influence the ability of a business to survive and prosper.

Infinite Recycling, as other companies, should adopt a triple bottom line management approach in which economic considerations are harmoniously intertwined with ecological and social sustainability, in order to define its responsibilities with regard to an ever growing number of value drivers of sustainability and stakeholders concerned (Steger, 2004). As a response to both drivers and stakeholders, Infinite Recycling should account for a relevant management strategy in a transparent way.

Value drivers of sustainability are determined by stakeholders' interests and concerns. Rappaport (1986) developed a focused strategy based on cash-flow orientation and using the cost of capital as a benchmark for added economic value. He took account both of stakeholders, arguing that what the stakeholder mainly wants from the company is cash, and of the broader business environment. Especially for a complex topic such as corporate social responsibility he managed to clarify the relationship between managerial actions and economic outcome.

Although the nature of stakeholders is likely to remain identical from one sector to another, the corresponding drivers of sustainability are more industry-oriented and are to be identified. Examples for the industry of concern to our imaginary company, i.e., the metals recycling industry, are included in table 1.

Table 1 Stakeholders and drivers for the metals recycling industry

<i>Stakeholder</i>	<i>Driver</i>
Customers	Impact of the costs of recycling, environmental benefits of recycling
Shareholders and providers of capital	Innovation: development of new uses for recycled materials; securing long term markets
Suppliers	Waste management constraints
Employees	Exposure to hazardous shredder residues
Communities	Environmental impact of recycling, including collection, storage and metals processing
Authorities	“Right to Know” measures, social and environmental legislation, e.g. Hazardous Waste Directive (91/689/EEC)

Identifying sustainability drivers at a corporate level for each stakeholder concerned and for each level of the triple bottom line (i.e., economic, environmental and social) allows management to produce a company-specific operational definition of sustainability. Moreover, it leads to an adapted policy as an application tool in line with identified responsibilities, and allows the company to maximize the benefits of living up to these responsibilities.

As part of a sustainable industry in itself, the *definition of sustainability used by Infinite Recycling* is the following:

“For Infinite Recycling, sustainable development is about ensuring an enduring future for businesses as well as for individuals, now and for generations to come. Infinite Recycling contributes to sustainable development both by its activities – recycling goods to help businesses and individuals minimizing environmental impacts – and its work processes – with the best available practices and taking social and environmental protection into account.”

Corporate Social Responsibility within Infinite Recycling is thus about the responsibility for the environmental, economic and social impact of the company itself and of the company’s customers. Infinite Recycling herewith runs a profitable business taking account of all the positive and negative effects it has on society.

Our imaginary company should not only take sustainability into its daily decisions and operations, it should also make this known to its stakeholders. To support this viewpoint, the benefits of sustainability reporting are discussed in the next section.

3. Publishing a Sustainability Report

What would be the actual advantages for Infinite Recycling if it decided to integrate sustainable development into its business strategies and report about it? In other words, what are the tangible benefits of disclosing social, economic and environmental information together in a sustainability report?

Foremost, by sustainability reporting, Infinite Recycling can prove to its stakeholders the coherence of strategic management decisions. By disclosing management strategies, systems and policies relating to the environment and society, it can also demonstrate its holistic approach to environmental and sustainability responsibility. Moreover, reporting assists in the aligning of corporate vision and principles with internal business practices and activities.

Some very concrete direct and indirect benefits for each of the Business Groups (BG) possibly resulting from sustainability reporting are:

- demonstrating high operational efficiency;
- attracting and retaining talented staff;
- keeping up the high standards concerning risk management;
- improving reputation (internal and external);
- promoting and increasing innovation;

Furthermore, the following general benefits of sustainability reporting can be mentioned: strengthened stakeholder relations, increased competitive advantage, improved access to lists of preferred suppliers, reduced corporate risk and assistance with investment analysis. The Business Groups should recognize the advantages of these general benefits of sustainability reporting on their individual scale.

Including stakeholders in the reporting process by actively engaging with them increases confidence and trust between both parties. Stakeholder dialogue might be used to help identify the key issues that are of concern to them. Our Business Groups can benefit from

learning more about the other Business Groups and from becoming aware of the stakeholders' areas of interest.

Academic and practical research by Steger *et al.* (2004) indicates that an organization which demonstrates full responsibility for its environmental impacts and reports on its sustainability efforts, benefits from gaining a competitive edge over firms that are not as open and transparent about these issues. Sustainability reporting might provide competitive advantage in capital, labor, supplier and customer markets.

By reporting on sustainability we can expect to obtain a list of preferred suppliers. Suppliers that share the same sustainability values as buyers with green procurement policies, and that can openly report on all aspects of their performance, thus giving a more complete and transparent view of Infinite Recycling's managerial strategy and operations, are more likely to achieve such a 'preferred supplier' status of Infinite Recycling.

In the reporting cycle it is common to identify the areas of environmental and social risk. By actively lowering these corporate risks, compliance will increase while potential liabilities will decrease, thereby reducing financing costs and, possibly, broadening the range of investors.

If Infinite Recycling accounts for all its impacts and performance measures (economic, environmental and social), potential investors will obtain a clearer picture of its true health. Socially responsible investment, where companies are screened prior to investment, using social and environmental criteria, is growing exponentially. Infinite Recycling might attract such investments.

Companies, our imaginary company included, have actually a range of reasons for publishing a sustainability report. Table 2 (UNEP, 1998) lists motivations for sustainability reporting based on empirical qualitative research.

Table 2 Companies' motivations for sustainability reporting based on an empirical study

-
- *Enhanced ability to track progress against specific targets*
 - *Facilitating the implementation of the environmental strategy*
 - *Greater awareness of broad environmental issues throughout the organization*
 - *Ability to clearly convey the corporate message internally and externally*
 - *Improved all-round credibility from greater transparency*
 - *Ability to communicate efforts and standards*
 - *License to operate and campaign*
 - *Reputational benefits, cost savings identification, increased efficiency, enhanced business development opportunities and enhanced staff morale*
-

Source: UNEP (1998)

Table 2 shows that, besides internal (company-specific) reasons, societal aspects (e.g. credibility and reputation) play an important role.

Based on the general benefits described above, table 3 gives an overview of a number of very concrete potential advantages of sustainability reporting for Infinite Recycling and for each of its three Business Groups.

Table 3 Benefits of sustainability reporting for Infinite Recycling

Internal and operational benefits: operational/cost efficiency opportunities	External and marketplace benefits Perception opportunities
<ul style="list-style-type: none"> -Increase employee loyalty -Improve employee training and skills -Improve employee skills, training, team-work -increase employee productivity -promote continuous improvement -promote breakthrough innovation -increase regulatory compliance -reduce risks -reduce legal liabilities 	<ul style="list-style-type: none"> -attract new customers -expand market share -improve supply chain management -access new markets -enhance company reputation/brand -protect against negative consumer action -strengthen community relations -increase customer goodwill/loyalty -enhance overall stakeholder relations -attract investors

As Kolk (2004) explains, a crucial issue concerning publishing sustainability reports is whether enterprises have really implemented (and internalized) the subjects they include in their sustainability report. In the companies where the latter is the case, there is scientific evidence that the arguments in favor of reporting prevail over those against.

In this regard, it should be obvious that Infinite Recycling and its Business Groups have some very valuable and sound reasons to be motivated for publishing a sustainability report.

4. Eco-efficiency Measurement

All companies use indicators to monitor (complex) systems in which they are interested or which they need to control (Parmenter, 2007). In general, the well-known Global Reporting Initiative (GRI, ES2) framework sets out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. Some very simple and well-known examples are (i) quantities of products sold relative to quantities of products fabricated and (ii) current rates.

Since companies can in fact be regarded as complex adaptive systems characterized with dynamism (Curzio and Fortis, 2002), the interpretation of acquired basic data concerning environmental performance usually is quite difficult, since in the course of events, companies change and adapt their processes, systems, products, services, etc. (e.g. due to changing production, changing turnover, changing market share, etc.). For example increasing gas or water consumption which seems to have a negative environmental impact might in fact be (objectively) improving environmental performance e.g. in the case where an organisation has doubled its production capacity and at the same time uses only a small additional amount of gas or water.

To this end, companies use eco-efficiency indicators. These indicators show the eco-efficiency performance of the company in relation to the volume (growth and productivity) of the company. The indicators serve for management decision support or as a communication tool. Performance is made independent of changes in production or turnover. If the indicators are well chosen, the ‘real’ achievements are indisputably disclosed.

In their most general form, the indicators are expressed as the ratio between the environmental effect and the value of a product or service:

$$\text{Eco - efficiency indicator} = \frac{\text{environmental effect of product or service}}{\text{value of a product or service}}$$

The scope of the numerator of the fraction indicates the possibility of several environmental effects. The system boundaries can be restricted to the production or consumption phase or might give an overview of the whole lifecycle of the product. Generally applicable eco-efficiency indicators following environmental aspects are used in the numerator, such as energy consumption (i.e., the total amount of used energy: purchased energy + produced energy – the amount of energy sold to third parties), water consumption (i.e., the total amount of water: purchased water + used surface water, groundwater or rainwater), consumption of raw materials (i.e., the total amount of all purchased or in any other way obtained raw materials, for example by mining), emission of greenhouse gasses (i.e., all emissions of greenhouse gasses caused by the company activities; production processes as well as secondary processes), and emission of ozone depleting substances (i.e., all emissions of ozone depleting substances caused by company activities; production processes as well as secondary processes).

The denominator of the fraction can be a product, a company, a land, or a function (for example the life expectancy of a product, square metres of surface treatment of a product, etc.). The unit that expresses the denominator can be a unit of volume, a unit of weight or a monetary unit. In the denominator basis data can be chosen such as the amount of products or services produced or sold (expressed in mass, volume or quantity) and net sales.

Next to these very broad indicators, every company can develop its own specific indicators based on the enterprise needs and characteristics. The following characteristics for developing company-specific indicators can be recommended (Rampersad, 2004): (i) based on technical, organisational or economic aspects within the enterprise's activities; (ii) understandable, relevant and meaningful for the decision-makers in the company; (iii)

appropriate for both internal and external communication; and (iv) based on information which is easily available.

To obtain valuable results, Van Beers (2003) indicates that the objectives resulting from using the indicators should be 'SMART': Specific, Measurable, Achievable, Relevant, and Traceable.

Some examples of specific eco-efficiency indicators for the material recycling industry our imaginary company belongs to are given hereunder:

(i) The amount of metal waste per weight unit of recycled metal. By weighting and documenting the annual amount of metal waste (scrap) collected by the waste collectors and comparing these to the annual figures of recycled metal (the production process) the improvements of the performance of the process are shown.

(ii) The volume of collected rainwater used in the product process per weight unit of recycled material, preferably compared to the volume of purchased water/groundwater/surface water.

(iii) With regard to the emission of wastewater, the performance of a sector, a company or a process can be measured by the dirt charge (e.g. expressed in mg/m³, obtained by wastewater measurements) of the waste water in relation to the amount of metal treated (in m², m³ or ton).

(iv) Concerning air emissions and the performance of an air purification system for the process surface treatment of metal with solvent containing substances, eco-efficiency can be derived from the amount of solvent emission per surface area of metal treated (or per weight unit used solvent containing substance).

(v) The reduction of packaging material can be monitored by using the amount of packaging materials per quantity of product that needs to be packed.

(vi) To monitor the degree of sustainability of packaging, the amount of recycled packaging material to the total amount of used packaging can be used as an indicator.

(vii) To indicate the performance for the transportation of products, the amount of CO₂ emission per distance unit for the transport of a weight unit of raw materials (or finished products) can be considered.

For the interested reader, some straightforward criteria to verify if the indicators are well chosen are for example extendedly discussed in Hoppenbrouwers (2002) and in Rampersad (2004).

The selection of indicators is undoubtedly decisive for the outcome of the eco-environmental analysis and thus for management decision-making. At present, various indicators are applied to evaluate environmental performance of companies, sectors and systems. Hence, to date, there is no scientific agreement on what the best analysis method is and which indicators could be applied in a generic way.

Infinite Recycling should thus be concerned with choosing meaningful eco-efficiency indicators (meaningful nominator and denominator combinations) which can effectively lead to improved decision-making and “image giving” for each of its customers. To this end, an eco-efficiency analysis procedure can be developed. Such an analysis starts with the definition of a specific customer benefit. The analysis then compares economic and ecological advantages and disadvantages across several product or process solutions, which can fulfill the same function for customers (Saling *et al.*, 2002). The eco-efficiency analysis focuses on each phase of a product’s lifecycle “from cradle to grave”, beginning with the extraction of raw materials from the Earth and ending with recycling or waste treatment after use. Infinite Recycling’s role is situated at the end of this lifecycle, but should take into account its position within the whole cycle while developing eco-efficiency indicators.

5. Marketing Reinforcement

Literature and studies show that customers tend to favor companies that are perceived as operating in accordance with sustainable development principles. According to a recent study by the Natural Marketing Institute (ES3, 2005), almost 90% of the U.S. population state that it is important for companies to not just be profitable, but to be mindful of their impact on the environment and society. For Europe, it can easily be assumed that the latter perception figures resulting from this market survey in the U.S. do not significantly differ.

Although actual behaviors are, at times, different, the implications of the attitude resulting from this perception on business operations are far-reaching. Just over 70% of consumers indicate that knowing a company is mindful of its impact on the environment and society makes them more likely to purchase its products or services, and nearly 50% state it makes them more likely to buy its stock.

How such a fact can be addressed through marketing is a keystone to the integration of corporate social responsibility and reporting concerning sustainable development in any business case.

The emerging customer concern for sustainability was scoped as a “growing scrutiny of the world behind the product” (Charter *et al.*, 2002), triggering companies to apply the triple bottom line approach to their marketing strategy. The challenge for marketing is therefore not only to include new elements that were outside its traditional frame of action in existing strategies, but also to re-evaluate these strategies in terms of social and environmental impact.

Indeed, marketing will now be concerned with providing a sustainable picture not only of the product in itself, but also of the recycling infrastructure and business as a whole. The importance of the recycling industry’s contribution to sustainable development should thus be stressed to its suppliers and customers and to society. After all, profits and

sustainable development within businesses, and especially within our imaginary company's sector, are not mutually exclusive mainly as a result of successful marketing.

A marketing approach that rigorously explores its environmental and social impacts offers access to the growing number of ethical consumers looking beyond the label and putting their money where their values are. If marketing is about understanding and responding to customers' needs, the ever emerging recycling industry demonstrates how much its customers and society need sustainable responses.

Several reasons can be given to indicate how sustainable reporting can reinforce marketing within Infinite Recycling:

- Customers and suppliers are informed of the environmental benefits of Infinite Recycling's services (recycling metals and metal components);
- The sustainability report is a useful tool for demonstrating Infinite Recycling's corporate social responsibility to customers, suppliers, partners, regulators and society;
- The sustainability report helps raise awareness of issues that are important to the metals recycling sector;
- The sustainability report helps to improve product standards, thereby avoiding potential problems as new environmental legislation or labeling requirements are introduced;

Summarizing, communicating the Business Groups' morals, values and honest reputation can never be a bad thing. If they desire to motivate and stimulate employees, it is important to ensure that they share with them what is to offer.

6. Leadership and Corporate Governance

Leaders throughout the course of history have been aware of the importance of protecting our world for future generations. As Taschler puts it (2005), the challenge to contemporary corporate leadership is to internalize the legacy of intergenerational stewardship and discover the role of the corporation in achieving societal responsibility

and sustainable development. Corporate executives and directors can no longer ignore the emerging trends and societal pressures to protect our planet Earth for future generations.

As plants belonging to the metals recycling industry commit to expand their role in assuring a sustainable future for themselves, for their customers and for society as a whole, it will be increasingly important to understand what roles leadership and corporate governance play in shaping this commitment.

To relate Corporate Governance with Sustainability issues, we propose the framework depicted in figure 1.

Figure 1 Sustainability Corporate Governance framework



Key:
A → B : A has a positive effect on B

Figure 1 illustrates the need for Corporate Governance regarding Sustainability (CRS) topics to divide its attention into three main parts: (i) (value) drivers of sustainability and their relationship to the stakeholders (e.g., eco-efficiency indicators), (ii) sustainability reports (and their pros and cons), and (iii) marketing empowerment.

Each main element (i.e., drivers, sustainability reports and marketing) influences the other in a reciprocal way. Moreover, immediate positive influential factors to the

elements are given as well. For example an arrow from the main part 'Marketing' to the influential factor 'Customers' means that marketing of sustainability topics has a direct positive influence upon the customers.

For CRS to be really effective, it should consider elaborating company-specific sustainability performance criteria for each of these three fields. It should decide how and when the achievement of these criteria will be monitored and evaluated. Zwetsloot (2003) indicates the logical next step of management systems is to explicitly include sustainability issues, thereby increasing Corporate Governance's credibility and transparency in improving the performance with respect to people, plant and profit.

7. Benchmarking results

7.1. Companies' and reports' profiles

In this section, we investigate the sustainability reports of five leading companies (CSR's) concerning the topic. The five reports were obtained using the URL <http://www.corporateregister.com/>. The CorporateRegister database (2007) contains 14710 Corporate Sustainability Reports across 3921 companies worldwide. The sample of five companies includes plants from the chemical industry, the pharmaceutical industry, and the metals industrial sector. Kumar *et al.* (1993) provide suggestions on selecting key informants. Because of the small sample size it was important to assess informants with experience and with high enough competences to ensure that each company's CSR is sufficiently elaborated such that state-of-the-art conclusions can be drawn.

The five companies which reports we studied are (in alphabetical order) Bayer, Janssen Pharmaceutica, Proctor & Gamble (P&G), Solvay, and Umicore. The main characteristics of the companies and their CSR's are given in tables 4a and 4b.

Table 4a Main characteristics of the five companies (2005 figures)

<i>Characteristic</i>	<i>Bayer</i>	<i>Janssen P.</i>	<i>P&G</i>	<i>Solvay</i>	<i>Umicore</i>
<i>Industrial sector (main activities)</i>	Chemical	Pharmaceutical	Chemical	Chemical and pharmaceutical	Metals
<i>Number of employees worldwide</i>	106,000	4,715	140,000	29,000	14,142
<i>Net sales (or turnover) (€ million)</i>	24,701	2,104	56,741	8,562	6,566.5

Table 4b Characteristics of the CSR's of the five companies (2005 figures)

<i>Characteristic</i>	<i>Bayer</i>	<i>Janssen P.</i>	<i>P&G</i>	<i>Solvay</i>	<i>Umicore</i>
<i>Number of pages</i>	97	17	89	34	135*
<i>First sustainability report published in</i>	2001	2003	1999	2001	2001
<i>Included economic performance headings</i>	-innovation and value -competition -local communities -performance indicators (SHE + energy)	-value, growth -employees -local communities	-value, growth, acquisitions -customers -suppliers -employees/local communities	-value, growth -employees -local communities	-customers -suppliers -employees -providers of capital -Increase / decrease in retained earnings -monetary flow indicators
<i>Included environmental protection headings</i>	-energy efficiency -global water management -reduction of emissions -ecological risks management	-energy consumption -water consumption -limitation of waste -reduction of emissions -waste & recycling management	-resource use Energy -water management -emissions, effluents and waste -impacts of products/services -compliance	-ecoefficiency -product stewardship -recycling management -energy consumption -natural resources -impact of plants	-materials -energy -water -biodiversity -emissions, effluents and waste -significant spills -products and services -compliance
<i>Included social responsibility headings</i>	-employees -human rights (i.a. equal opportunity) -safety & health -good corporate citizen	-employees -safety & health	-employment -taxes, fees and contributions -labor practices -human rights -product responsibility	-employees -subcontractors -safety & health -accidents	-labour practices and decent work -human rights -society -product responsibility -customer health and safety

Marketing headings	-innovation -sustainability management -supplier management -stakeholder dialogue	-products -general ethical policy	-long history -superior quality products -stakeholder engagement -very global -Global Sullivan Principles	-products -communication with stakeholders -policies -management systems	-vision and strategy
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* The Umicore 2006 sustainability report includes 37 pages of environmental and social data. For the first time, indicators are based on international standards requirements i.e. the Global Reporting Initiative (ES2).

7.2. Benchmarking of the sustainability reports of the five companies

The general objectives (and marketing going hand in hand with them) of the five 2006 sustainability reports are briefly discussed using citations:

Bayer:

“This Report is intended to demonstrate to the general public how we achieve a balance between ecological, economic and social needs and which steps we take to meet global challenges such as climate protection, clean water or human rights.” (p.2)

Janssen Pharmaceutica:

“This report is structured around the fundamental values of Johnson & Johnson, which were written down more than sixty years ago in a document that was given the name ‘Our Credo’. According to this business philosophy, our responsibility is first and foremost to the patients who use our products and services, then to our employees, the environment and the community in which we live and work, and finally to our shareholders. It is in this order that the information in this report is presented.” (p.12)

P&G:

“P&G embraces sustainable development as a potential business opportunity, as well as a corporate responsibility. Through our activities we contribute to the economic and social well-being of a range of stakeholders, including employees, shareholders, communities in which we operate, and more widely, to regional, national and

international development. In summary, P&G contributes to sustainable development through both what we do and how we do it. (...) As a result, consumers will reward us with leadership sales, profit and value creation, allowing our people, our shareholders and the communities in which we live and work to prosper.” (p.2)

Solvay:

“To help us attain our objectives and play a more active part in exercising our corporate social and business responsibility, it is essential that those with whom we collaborate or have other dealings, at any level, support us actively. In particular, I hope that discussions serve as a basis for constructive and reasonable approaches, especially in the area of regulations. The approaches must ensure that industrial companies like ours have a chance to prepare for the sustainable development opportunities that everyone is calling for.” (p.3)

Umicore:

“Umicore made further positive strides in 2006 in its endeavour to become a leading global materials technology group, recognized for its contribution to sustainable development. We reoriented the business portfolio, further increased our investments in the area of clean technology and made our commitment to furthering sustainability more tangible throughout the organization.” (p.3)

From the reports in general and the citations in particular, it is obvious that in all five cases the sustainability report is regarded as a marketing instrument by the companies to indicate their commitments towards economic development, social responsibility and environmental progress. Finding solutions (through innovation) to (local and global) societal needs, such as access to clean energy, efficient recycling, etc. presents actually new business opportunities for the companies. Sustainable growth also enhances the companies' reputation. The opportunities for reporting on sustainability and for taking sustainability issues into Corporate Governance matters in each of the companies can be summarized by seven key components which indicate the created surplus value of sustainable development for them:

- (i) Attracting and motivating employees;
- (ii) Reducing costs through efficient use of materials and energy;
- (iii) Reducing financial risks;
- (iv) Steering the portfolio for the future;
- (v) Influencing product and service innovation;
- (vi) Attracting more loyal customers;
- (vii) Enhancing the reputation.

These components are fundamental to each of the five companies, and they prove that sustainability reporting for the Business Groups of Infinite Recycling might shape some very important long-term opportunities. Some further generalized insights into each of the seven essentials are given:

- (i) Most people want to work for a company whose values and concerns are aligned with their own. As competition grows for talent, this can provide a real long-term competitive advantage;
- (ii) Reducing costs through efficient use of materials and energy spurs innovation and helps reduce costs through eco-efficiency. It means finding cost-effective ways to produce more with less material, energy, water, and waste, and turning waste into saleable products.
- (iii) Reducing financial risks by understanding what stakeholders see as responsible behavior and meeting those expectations is a very important economic topic. Demonstrating the ability to manage risks is attractive to financial institutions, leading to lower cost of capital and improved confidence among investors.
- (iv) Anticipating new markets, driven by societal and customer desires for a cleaner, safer more sustainable world can give strategic direction to the evolution of product portfolios and supply chain relationships to match.

- (v) Understanding changes in customers' lifestyles, values, and their sometimes conflicting priorities gives a direction to product and service innovation and differentiation.
- (vi) It is essential that suppliers consistently understand and meet their customers' needs. Anticipating how those needs will change and ensuring that their suppliers will do their part in looking after the value chains in which both parties are involved, will attract more loyal customers.
- (vii) By being seen as a credible company, it becomes first choice for customers, staff, investors, suppliers, partners, and communities in which it operates. Having a good reputation not only secures a license to operate, but a license to grow as well.

Based on these benchmarking results and on the theoretical considerations from literature, a project fiche for introducing sustainability reporting within our imaginary recycling company can be drafted. We conclude this article by providing such a project fiche in the next section.

8. Conclusions

The conclusions are given as a project fiche for introducing sustainability reporting at Infinite Recycling.

Table 5 Project Fiche: Sustainability reporting at Infinite Recycling

<p>Identification of sustainability drivers for the company:</p>	<ul style="list-style-type: none"> ▪ For each stakeholder concerned ▪ At all levels of the Triple Bottom Line (Economic, Environment, Social) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border: none;"><i>Stakeholder</i></th> <th style="text-align: center; border: none;"><i>Driver</i></th> </tr> </thead> <tbody> <tr> <td style="border: none;">Customers</td> <td style="border: none;">Impact of the costs of recycling, environmental benefits of recycling</td> </tr> <tr> <td style="border: none;">Shareholders and providers of capital</td> <td style="border: none;">Innovation: development of new uses for recycled materials; securing long term markets</td> </tr> <tr> <td style="border: none;">Suppliers</td> <td style="border: none;">Waste management constraints</td> </tr> <tr> <td style="border: none;">Employees</td> <td style="border: none;">Exposure to hazardous shredder residues</td> </tr> <tr> <td style="border: none;">Communities</td> <td style="border: none;">Environmental impact of recycling, including collection, storage and metals processing</td> </tr> <tr> <td style="border: none;">Authorities</td> <td style="border: none;">“Right to Know” measures, social and environmental legislation, e.g. Hazardous Waste Directive (91/689/EEC)</td> </tr> </tbody> </table>	<i>Stakeholder</i>	<i>Driver</i>	Customers	Impact of the costs of recycling, environmental benefits of recycling	Shareholders and providers of capital	Innovation: development of new uses for recycled materials; securing long term markets	Suppliers	Waste management constraints	Employees	Exposure to hazardous shredder residues	Communities	Environmental impact of recycling, including collection, storage and metals processing	Authorities	“Right to Know” measures, social and environmental legislation, e.g. Hazardous Waste Directive (91/689/EEC)
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<p>Production of a company-specific definition of sustainability as a basis for:</p>	<ul style="list-style-type: none"> ▪ Integration of the Triple Bottom Line approach into management strategies ▪ Application at Business Units level ▪ Communication to stakeholders (actions taken today will influence the ability of a business to survive and prosper) <p><i>“For Infinite Recycling, sustainable development is about ensuring an enduring future for businesses as well as for individuals, now and for generations to come. Infinite Recycling contributes to sustainable development both by its activities – recycling goods to help businesses and individuals minimizing environmental impacts – and its work processes – with the best available practices and taking social and environmental protection into account.”</i></p>														
<p>Advantages for the company - Business Units and Marketing:</p>	<ul style="list-style-type: none"> ▪ Competitive advantage of sustainability in capital, labour, supplier and customer markets proven ▪ Support stakeholder dialogue especially with surrounding business environment to establish e.g. a list of preferred suppliers that share similar sustainability values to create an added value to sustainable achievements of Infinite Recycling as a company situated at the end of the supply chain ▪ Attract socially responsible investors ▪ Adapt to ethical consumer’s “growing scrutiny of the world behind the product”, and become a preferred supplier 														
<p>Measuring, managing, communicating and documenting performance – Company Eco-efficiency indicators:</p>	<ul style="list-style-type: none"> ▪ Amount of metal waste per weight unit of recycled metal ▪ Volume of collected rainwater used in the product process per weight unit of recycled material ▪ Dirt charge of the waste water in relation to the amount of metal treated ▪ Amount of solvent emission per surface area of metal treated ▪ Amount of packaging materials per quantity of product that needs to be packed ▪ Amount of recycled packaging material to the total amount of used packaging ▪ Emission per distance unit for the transport of a weight unit of raw materials 														

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ES1: see the electronically available Brundtland report:

<http://www.are.admin.ch/themen/nachhaltig/00266/00540/00542/index.html?lang=en>

ES2: <http://www.globalreporting.org/AboutGRI/WhatWeDo/>

ES3: <http://www.sustainablemarketing.com>

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