Report on tools for environmental communication

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ABSTRACT

The work has been financed by the DANTES project that is supported by the EU Life Environment Program.

Retrieved information and gained knowledge have been converted into concrete results as Environmental Product Declaration, EPD, Sustainability Performance Indicator, SPI and Safety Data Sheet, SDS. This report shows the result from using EPDs, SPIs and SDSs for communicating environmental issues.

The report is based on the experiences from ABB and Akzo Nobel.

The prerequisites for developing environmental tools are a general environmental awareness in the company but there must also be driving forces like an environmental policy in the company, requirements from customers or other stakeholders or it could be legal requirements.

EPDs are mainly marketing tools. Customers generally do not ask for EPDs but they do however value the information positively when they receive it.

SPIs are tools for information of specific indicators and could be one way to facilitate handling and communication of e.g. environmental information.

SDSs are legally required tools which answer the questions from customers about classification and labeling of chemicals, product properties and impact of products on the environment.

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1. INTRODUCTION

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2. ENVIRONMENTAL COMMUNICATION TOOLS

The last years, an increasing attention has been paid to the environmental impact of the manufacture, use and disposal of products. More and more companies are receiving sustainability related enquiries from interested parties such as their customers, legislative bodies, local communities, etc.

The challenge is to present the information in an accurate and understandable way.

Tools such as Environmental labeling, Environmental Product Declarations, Sustainability Performance Indicators and Safety Data Sheets can be used to communicate the sustainability performance of products, activities and organizations. In addition to Environmental Product Declarations, there are also other systems of environmental labeling/information such as material declarations or recycling descriptions.

The prerequisite for developing environmental tools is a general environmental awareness in the company, i.e. the management team must consider that environmental issues are of strategic importance. As a consequence the environmental knowledge among the employees will certainly be high and this in turn is a prerequisite for carrying out this type of tools.

Driving forces for communicating EPDs, SPIs and SDSs could be requirements from customers or other stakeholders, legal requirements or the ambition from the company itself in the form of e.g. an environmental policy or a statement. EPDs are mainly used as marketing tools, SPIs are tools for information of specific indicators used in internal and external communication and SDSs are legally required tools used in supply chain communication etc.

3. EPD

3.1 Background

Swedish industry has initiated and established an official environmental declaration program called the EPD system (Environmental Product

Declaration) based on ISO TR 14025 - a pre-standard in the ISO 14000 series. The EPD system is applicable worldwide for all interested companies and organizations.

A certified environmental product declaration, EPD is based on information from a life cycle assessment (LCA) according to the ISO-standards for LCA. A declaration may include information about raw material acquisition, energy use and efficiency, content of materials and chemical substances, pollutant emissions to air, soil and water, waste generation and the environmental impact associated with the product or service in question.

An EPD has, beside the mandatory parts, also the potential to declare additional information. Since an EPD is a way of communicating with customers, other relevant information that normally is not part of an LCA, such as risk assessments, or whether the company has an environmental management system, is seen as very useful. Also information regarding end-of-life scenarios such as recycling or re-use options can be necessary for decision-making and should be part of an EPD.

One example is an ABB power transformer from Italy.

The transformer is built according to a new-developed concept. The Life Cycle Assessment covers all environmental aspects for extraction and production of raw materials, manufacturing of main parts, assembly of the transformer, transportation and use of the product and dismantling after end of life. It includes consumption of material and energy resources as well as emissions and waste generation. Calculations are based upon an estimated lifetime of 35 years. The environmental impact during the use phase is the most important one. In manufacturing phase copper production for windings is the most significant source of pollution.

3.2   How to communicate EPDs

The main categories to consider when choosing products for EPDs could be representative examples of core products or newly launched products. Since many companies have a very large product mix it would be an unrealistic task from an economic point of view to develop EPDs for all products. The format of different EPDs varies. Some EPDs are declarations for one single product, others are declarations for a range of products or for a collection of products, where all the data are presented in a matrix.

Different personnel categories are usually involved in the development of an EPD. The environmental manager and the environmental coordinator have often a leading role and the responsibility could be theirs.

Usually EPDs are sent to customers - often in a package with other information material such as recycling instructions, safety data sheets, specific technical information or together with an offer - that require information about environmental performance of a product. Typical situations for the distribution of EPDs are customer events, visits, exhibitions, conferences and workshops. Other target groups for EPD, except customers, are suppliers, students, trainees, employees and management teams.

The electronic format is very common, but there could be brochures and off-prints as well.

3.3   Experiences

The main group of receivers for EPDs is the customers. They generally do not ask for an EPD but they do however value it positively when they receive it and they use it to get environmental information. They may also consider it to be a measure of the environmental engagement of a supplier. An advantage of EPDs is that they give an overall or compiled answer to many questions of environmental character such as material content, energy efficiency, emissions and waste.

However, some customers perceive the information in an EPD as being complex to understand and use. There is a wish that EPD information will be simplified. The reason is certainly that it is very difficult to relate to what is good or bad for the environment. There is no objective understanding of such environmental information, each person makes his/her own interpretation based on own experiences. Interpretation keys can be used to support the understanding of an EPD. A simplified EPD could use more general information as working environmental information and other information that today is in the optional part of the declaration. It would also be possible to minimize the use of aggregated data as e.g. GWP (Global Warming Potentials) and instead present the information as eco-profiles.

More EPDs must be developed from more producers if EPDs should become useful for the customers when comparing and selecting environmentally sound alternatives.

The cost of developing and maintaining EPDs may be seen as a barrier for an efficient EPD implementation process. The benefits from developing an EPD must then be weighed up against its' economic and other benefits and that is not always easy to estimate beforehand. It involves a substantial investment to prepare the requested documentation and to go through the process of achieving an EPD. The major part of the cost is made up of the LCA study. Another barrier is the need for a relatively high level of environmental competence that most people in a company's line organization lack today. Access to supporting guidelines and tools as well as to personal support has therefore been identified a critical issue for cost-efficient implementation of EPDs.

The lay-out of the newer EPDs together with more direct information to the customers has increased the possibility to make the best use of EPDs.

Scenarios for future applications for EPDs could be to integrate them within different management system for environmental, working environmental and quality aspects. EPDs could be used both as an input to these systems but also as a result of the work with improvements. Of current interest is all the new product-related legislation from EU. This kind of information ought to have its appropriate place in the EPDs.

EPDs in electronic form makes it possible to use some type of software tool for directly calculating environmental impact for different scenarios like electrical losses, transports and recycling rates. Thereby the usefulness of EPDs would increase and certainly also the interest for EPD in the future.

4. SPI

4.1 Background

Performance indicators are measurable aspects of an organization, which provide summarized information on how the organization is performing. The performance indicators are grouped under three sections covering the economic, environmental and social dimensions of sustainability according to the "Sustainability Reporting Guidelines" published by the Global Reporting Initiative, GRI, in 2000.

Economic indicators concern an organization's impacts, both direct and indirect, on the economic resources of its stakeholders and on economic systems at the local, national, and global levels. Included within economic indicators are the reporting organization's wages, pensions and other benefits paid to employees; monies received from customers and paid to suppliers; and taxes paid and subsidies received. In a few instances,

economic performance information overlaps with that in conventional financial statements. In general, however, the two are complementary.

Environmental indicators concern an organization's impacts on living and non-living natural systems, including eco-systems, land, air and water. Included within environmental indicators are the environmental impacts of products and services; energy, material and water use; greenhouse gas and other emissions; effluents and waste generation; impacts on biodiversity; use of hazardous materials; recycling, pollution, waste reduction and other environmental programs; environmental expenditures; and fines and penalties for non-compliance.

Social indicators concern an organization's impacts on the social systems within which it operates. GRI social indicators are grouped into three clusters: labor practices (e.g., diversity, employee health and safety), human rights (e.g., child labor, compliance issues), and broader social issues affecting consumers, communities, and other stakeholders (e.g., bribery and corruption, community relations). Because many social issues are not easily quantifiable, GRI requests qualitative information where appropriate.

Example is from ABB Annual Report 2004

The economic performance indicators are monetary flow between ABB and key stakeholders, revenues by region, assets, investments, labor productivity, taxes and number of employees.

The environmental performance indicators are energy, water, biodiversity, emissions, transportations, suppliers, products and services and compliance.

The social performance indicators are employment, labor/management relations, health and safety, training and education, diversity and opportunity etc.

4.2 How to communicate SPI

Performance indicators - both qualitative and quantitative – have been used in sustainability management and sustainability reports for many

years. The number of indicators has gradually been refined and since 2000 sustainability indicators are reported according to GRI.

SPI highlight the challenges the company has to face and the areas where improvements can be realized. There is a large interest in increasing the use of environmental performance and sustainability. This will require more education of marketing and sales staff and also of customers.

For sustainability reporting the reporting boundaries could be all manufacturing facilities in different countries. For non-manufacturing organizations, which have limited environmental impact, just some of the indicators are relevant, e.g. use of electricity, district heating and water consumption per person. The reasons for omitting certain indicators must be sound.

Performance indicators could also be used for very specific activities. An example is to present environmental indicators for the transportation of a product and show the impact in terms of fuel consumption and emissions of gases.

4.3   Experiences

There are several groups of receivers since performance indicators often are published in the annual report: customers, shareholders, employees, NGOs (Non-Governmental Organizations), the public etc. The receivers use the SPIs to get summarized information on how a company or organization is performing. The NGOs may use it for critical review and creation of public opinion.

Performance indicators could be one way to facilitate handling and communication of e.g. environmental information. A global Web-based system may be used to aggregate data from each country and site in a global group of companies. The purpose is to guarantee an automatic and accurate aggregation. Performance indicators published annually makes it possible to compare from year to year the performance and hopefully to present improvements made in the organization.

If the collection of data not is properly carried out, e.g. there are misunderstandings about the headings in the questionnaire and wrong data is used, the reliability of the figures in the report will be low and this may lead to wrong conclusions about the performance of the company. It may also lead to wrong decisions taken based on the SPIs. Therefore it is of vital importance to make the process of collecting data clear, well structured and uncomplicated. The questionnaires used for the collection must be unambiguously formed. Also of very great importance in a company is the internal communication to make sure that proper data is presented and used for the SPI.

Scenarios for future applications for SPIs are to use them more frequently internally with the purpose to highlight progress in the area of e.g.

environmental performance or to motivate units to work harder with these issues. One way could be to include environmental performance indicators in the designer's daily work i.e. in the product development process. Benchmarking both internally and towards other companies is a possible application. Selected parts of what is presented in the annual report may be used for marketing purposes.

5. SDS

5.1   Background

SDSs present information on a product's health and environmental hazards. They also provide information on safe handling, transportation and storage. A SDS includes information such as physical data (boiling, melting, and flash point), toxicity, health effects, first aid measures, reactivity, transport classification, protective equipment, disposal and spill/leak procedures.

Suppliers of chemical products are required by law to provide their industrial customers with Safety Data Sheets (SDS) on products that have been classified as dangerous. SDSs meeting the requirements of the European Union directives are recognized by 16 sections. The information required in each section is regulated by the Safety Data Sheets Directive.

The information shall enable employers to determine whether any hazardous chemicals are present in the workplace, and to assess whether there is any risk to the health and safety of workers and/or to the environment arising from their use, to facilitate necessary measures for the protection of health and the environment and for safety at work in connection with professional use.

Example is from AKZO Nobel on a cleaning/washing agent.

AKZO NOBEL

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY UNDERTAKING

Trade name   **Berol 543**

Chemical description/Application   Cleaning/washing agent

The information in the datasheet is presented in 16 sections according to EU directive.

5.2   How to communicate SDS

A chemical company often receives questions about classification and labeling of chemicals, product properties and impact of products on the environment. These questions can be answered by the use of Safety Data Sheets, SDS. One section of an SDS is dedicated to environmental information. Here, eco-toxicological data and information on for example biodegradability and bioaccumulation can be provided.

The environmental information does not have as long tradition for the user of the SDS as the health issues, mainly because of the former legal requirements. However a extended use and communication of the SDS between more functions within the companies might lead to more focus also on the environmental sections.

Most of the times, SDSs can be further improved by including more environmental information when such is available. However, test results on chemical products concerning for example biodegradability or bioaccumulation can be difficult to interpret. This as the complexity of the factors influencing on the test results as well as the actual circumstances around the tested species compared to the situation around e.g. an emission outlet will be very different. Consequently, information is not added to the SDS until there is a mutual understanding and a consensus within the area of question in the company, within the business sector or sometimes even within other groups of interest.

5.3   Experiences

Product information papers/product data sheets are also tools that can be useful in handling customers' questions about properties of the product. Since this kind of information is not legally required in a specific format like the SDSs, such information can be more adapted to the product and its applications by the company in question, compared to the more restricted SDS.

The advantage of the SDS though is that they are already issued and provided to the customer, they are kept updated and are easy to use by the way that they are standardized and thus familiar to the user.

6. CONCLUSIONS

Three important tools for environmental communication are Environmental Product Declaration, EPD, Sustainability Performance Indicator, SPI and Safety Data Sheet, SDS.

The prerequisites for developing environmental tools are a general environmental awareness in the company but there must also be driving forces like an environmental policy in the company, requirements from customers or other stakeholders or legal requirements.

EPDs are mainly marketing tools. The main group of receivers for EPDs is the customers. They generally do not ask for an EPD but they do however value it positively when they receive it and they use it to get

environmental information. However, some customers perceive the information in an EPD as being complex to understand and use. There is a wish that EPD information will be simplified.

The cost of developing EPDs may be seen as a barrier for an efficient EPD implementation process. The benefits from developing an EPD must then be weighed up against its' economic and other benefits and that is not always easy to estimate beforehand. The lay-out of the newer EPDs together with more direct information to the customers has increased the possibility to make the best use of EPDs.

Scenarios for future applications for EPDs could be to integrate them within different management system for environmental, working environmental and quality aspects. Of current interest is all the new product-related legislation from EU. This kind of information ought to have its appropriate place in the EPDs.

SPIs are tools for information of specific indicators and could be one way to facilitate handling and communication of e.g. environmental information.

Customers, shareholders, employees, NGOs, the public etc. are receivers of SPIs. SPIs are often published in the annual report and therefore it is possible to compare the performance from year to year and hopefully to present improvements made in the organization.

It is of vital importance to make sure that the collection of data and documentation of data is properly carried out to increase the transparency and reliability. Otherwise this will influence the reliability of the figures in the report and may lead to wrong conclusions about the performance of the company.

Scenarios for future applications for SPIs are to use them more frequently internally with the purpose to highlight progress in the area of e.g. environmental performance or to motivate units to work harder with these issues. Selected parts of what is presented in the annual report may be used for marketing purposes.

SDSs are legally required tools. A chemical company often receives questions about classification and labeling of chemicals, product properties and impact of products on the environment. These questions can be answered by the use of Safety Data Sheets.

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