ENVIRONMENTAL INTERNET SYSTEM EIS

TOOL FOR SMALL AND MEDIUM SIZED ENTERPRISES TO MONITOR THEIR ENVIRONMENTAL PERFORMANCE

Tuula Pohjola & Terhi Wermundsen
Helsinki University of Technology
Lifelong Learning Institute Dipoli
P.O.Box 8000
FIN-02015 HUT
FINLAND

e-mails:
terhi.wermundsen@dipoli.hut.fi
tuula.pohjola@dipoli.hut.fi

telephone: +358 9 451 4657

ABSTRACT

A company's current state of environmental issues is its environmental performance. EMSs are tools to identify, analyse and report a company´s environmental performance. Usually EMSs have been built up following the ISO 14001 –standard or the European Community's eco-management and audit scheme (EMAS). Generally large, well-resourced firms have been implemented EMSs. Although SME managers have positive attitudes towards environmental issues, they usually lack resources to accomplish their environmental systems. SMEs would thus need a practical tool preferably situated in the Internet to carry out this task.

Environmental Internet System (EIS) is an application based on a database, which can be used via the Internet. The usage of the tool does not require huge investments on facilities or programs, since one can use the tool – as its name says – directly in the Internet.

EIS offers companies an easy way to monitor their environmental issues including industrial and logistics processes. A firm inputs its operational data into a web application and gets information on amounts of materials and substances used in processes, and direct and indirect emissions generated by operations. Benchmarking of emissions and energy and material usage is also incorporated in the program.

The pilot application has five parts. They are as follows

1. Defining the environmental strategy of a company
    - In this section a firm chooses words or sentences related to its performance

2. Environmental review

- A firm inputs data into the web-application concerning
    - Amount and costs of raw materials
    - Amount and costs of energy and water consumption
    - Distances and costs of transportation
    - Amount and costs of waste types
- A firm chooses alternatives (words or sentences) determined for a business field
    - Environmental problems related to a company's performance
    - Environmental laws related to a company's performance
    - Environmental risks related to a company's performance
    - Needs for environmental education

3. Other elements needed for documentation of the EMS
    - A firm inputs data (numbers, words or sentences) into the web-application (e.g. a schedule for audits, accountable persons' names, etc.)

4. Education package consists of texts explaining
    - Dictionary of difficult words and definitions
    - Environmental management program
    - Environmental policy
    - Environmental risks and responses
    - Meters and indicators
    - Environmental problems
    - Environmental laws and regulations
    - Guidelines about how to plan staff's environmental education
    - Information of all the steps to accomplish an EMS

5. Documents produced by the application
    - Documentation of the environmental management system
    - Environmental report for customers and the government
    - Environmental report for internal use

The pilot application was developed for printing houses. It was tested and further developed by six Finnish printing houses. With the knowledge gained by designing the pilot application for graphic industry, it would be relatively easy to develop similar systems to other industry fields.

The application harmonizes the information collected on environmental issues, guides firms inside a business field to use the same meters and indicators to evaluate their environmental performance and offers a basic form of environmental reporting. Using harmonized information it will also be relatively easy to compose national reports if needed.

The application is implemented using a Linux server, in which it has been implemented Apache WWW server and PostgreSQL-database server. The application has been programmed using the PHP3 scripting language. In HTML programming special attention has been paid to browser independence.