Chapter 23

EMS Records and Information Management of Environmental Aspects and Their Associated Impacts with Metadata

Hans-Knud Arndt, Mario Christ and Oliver Günther
Humboldt University, Germany

Metadata in environmental management systems support searching and browsing operations. XML-based metadata systems can store metadata in a flexible manner that is suitable also for small and medium size organizations. Our EcoExplorer software package consists of three closely cooperating programs for the management of XML-based environmental metadata. It is implemented in Java and therefore platform-independent. The EcoExplorer is able to collaborate with online components of an environmental management system, as demonstrated by our eco-balancing and environmental accounting system ACCOUNT.

SCOPE

The European regulation on environmental management and audit scheme (EMAS regulation) and the International Standard 14001 on environmental management systems (specification with guidance for use) specify requirements for an environmental management system (EMS). ISO 14001 and amended EMAS II are applicable to any organization that wishes to:

i) implement, maintain and improve an environmental management system;

ii) ensure its compliance with its stated environmental policy;

iii) demonstrate such compliance to others;

This chapter appears in the book Modern Organizations in Virtual Communities by Jerzy Kisielnicki. Copyright © 2002, IRM Press, an imprint of Idea Group Inc.
iv) seek certification/registration of its environmental management system by an external organization;
v) make a determination and declaration of compliance with the standard.

Organization in this context may be a company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own function and administration.

Both standards require that organizations collect and compile data about environmental aspects and their associated environmental impact. Many organizations are reacting to these insights and developments by building or purchasing specialized information systems. These software systems may vary from stand-alone programs to systems providing an interface to the existing information infrastructure within the organization. Software systems supporting more than one requirement of environmental management systems are called Environmental Management Information Systems (EMIS).

EMIS are intended to provide the environmental management system of organizations with information that can be integrated with other information requirements to assist organizations to achieve environmental and economic goals. These systems facilitate the collection, aggregation and evaluation of environmental information for each element of an environmental management system. According to ISO 14001, an organization shall establish and maintain an environmental management system and therefore an EMIS that includes the following elements:

i) Environmental Policy: An organization should define its environmental policy and ensure commitments to its EMS.

ii) Planning: An organization should formulate a plan to fulfill its environmental policy.

iii) Implementation: For the effective implementation, an organization should develop the capabilities and support mechanisms necessary to achieve its environmental policy, objectives and targets.

iv) Measurement and evaluation: An organization should measure, monitor and evaluate its environmental performance.

v) Review and improvement: An organization should review and continually improve its environmental management system, with the objective of improving its overall environmental performance.

In this article we will focus on the EMIS element EMS Documentation as a part of (iii) implementation and on the EMIS element EMS records and information management as part of (iv) measurement and evaluation.

**EMS DOCUMENTATION: THE ECOEXPLORER**

Integration of distributed environmental information

The ISO Standard 14004 (Environmental Management Systems - Guidelines
Academic Integrity and Student Satisfaction in an Online Environment
www.igi-global.com/chapter/academic-integrity-student-satisfaction-online/68112?camid=4v1a