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Panacea, Common Sense, or Just a Label? The Value of ISO 14001 Environmental Management Systems

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An increasing number of corporations around the world are certifying their environmental management systems by ISO 14000 series standards. Advocates of ISO 14001 claim substantial operational, managerial, and competitive benefits for corporations that adopt the international guidelines. Critics contend that ISO 14001 does not ensure either legal compliance or continued performance improvements. They claim that at plants or facilities already complying with environmental regulations, ISO 14001 certification may merely be an image-building or public relations effort.

Theoretically, ISO 14001 could serve as a comprehensive framework for significantly improving performance in a firm with minimal environmental management capacity (in a sense, a 'panacea') or as a set of common sense guidelines for enhancing performance in a firm with regulatory compliant practices. Some firms may, indeed, simply use ISO 14001 as a 'label' for image-building. The following Case Study of an operationally efficient and regulatory-compliant aluminum plant that certified its environmental management system under ISO 14001 guidelines in 1996 identifies the impacts three years later. Drawing on the literature of program evaluation, and using archival material, interviews with managers, and a concept mapping exercise, four sets of impacts were found of certifying the plant's environmental management system by ISO 14001 standards. They included improvements in (1) employee awareness, (2) operational efficiency, (3) managerial awareness, and (4) operational effectiveness.

Many of the world's largest multinational corporations have certified their environmental management systems (EMS) under ISO 14000 standards during the past few years, and many other companies are in the process of doing so. ISO 14000, the International Organization for Standardization's guidelines for environmental management systems, has become the international benchmark by which corporations can voluntarily develop and assess their environmental practices. The ISO 14000 standards, approved in 1996, describe the components and characteristics of an effective system for managing a corporation's environmental impacts (Tibor and Feldman, 1996). They offer a format for developing an environmental policy, identifying environmental aspects, defining objectives and targets, implementing a program to attain a company's goals, monitoring and measuring effectiveness, correcting deficiencies and problems, and reviewing management systems to promote continuous improvement.

Some firms are using ISO 14000 guidelines to develop new environmental management systems, or adapting their environmental practices to the international standard, without formally certifying them. Other corporations, government agencies, and environmental interest groups are skeptical about the real impacts of ISO 14000 certification,

and either ignore the guidelines or question their effectiveness in improving environmental performance (Krut, R. and Gleckman, H. 1998). But an increasing number of corporations are, through external registrars, formally certifying their EMSs based on ISO 14000 standards or the European Eco-Management and Audit Scheme (EMAS).

Despite the growing interest in voluntary environmental management standards for industry, little empirical information exists and few in-depth case studies have been done on the effects of adopting an ISO 14000-certified EMS. Why and how do companies adopt voluntary EMSs? What impacts does ISO 14000 certification have on a plant or facility? How does certification affect the operations and management of a manufacturing plant? Is certification merely a formality, or does it change the way management and employees conceive of and deal with the environmental impacts of their operations? Are there significant benefits to companies that have certified their quality management systems under ISO 9002 of also certifying their environmental management systems under ISO 14001?

In this article we assess the impacts of ISO 14000 certification through an in-depth case study of a plant that began preparing in 1995, more than a year before the international standards were officially approved. The analysis focuses on the Alumax aluminum ingot production facility, called Mt Holly, in South Carolina. Alcoa purchased the plant in 1998. This study traces the history of the ISO 14001-certification process at Alumax — which already had strong environmental practices in place and had earlier certified its quality management system under ISO 9002 — and analyzes its impacts. The case study demonstrates how the certification of a manufacturing facility affects both its operations and management processes. Data were derived from archival sources, from plant site visits, from interviews with key personnel involved in the development of Mt Holly's EMS, and from a concept-mapping exercise involving 15 of the plant's managers and pollution prevention team members. The researchers also interviewed environmental, health, and safety (EHS) managers at other Alcoa facilities and drew heavily on the program evaluation literature in applying the concept mapping exercise.

Keywords: ISO 14001, Environmental Management, Quality Management, Certification.

ISO 14000 Guidelines for Environmental Management Systems

Companies use ISO 14000 standards in two ways. Some document their environmental management systems and self-declare that their EMSs meet ISO 14001 standards; others officially certify their EMSs through a registered external auditor. ISO 14001 certification acknowledges that a company has an acceptable environmental management program. Other standards in the ISO 14000 series provide guidelines for environmental auditing (ISO 14010), environmental labeling (ISO 14020), performance evaluations (ISO 14031), life-cycle assessment (ISO 14040), and product standards (ISO 14060) (von Zharen, 1996).

By the end of 1998, nearly 8000 organizations in 72 countries had formally certified their environmental management systems under ISO 14001 (IOS, 1999). Nearly 54 per cent of the certificates were held by organizations in Europe. Japan became an early leader in encouraging its companies to certify. More than 330 organizations (mostly corporations) were certified in the United States by early 1999 (International Environmental Systems Update, 1999). Many other companies use the ISO 14000 guidelines to create or improve their environmental management systems without formally certifying. And some companies, such as Procter & Gamble, simply use ISO 14000 as an informal benchmark. P&G, which had gradually improved its environmental management over 30 years at more than 150 sites around the world, concluded in 1996 that its environmental management system met or exceeded the ISO 14000 standards, obviating the need to certify (Victory, 1997).

Other large corporations with operations in the United States, however, have certified their plants officially through approved registrars. Rockwell Automation, Lucent Technologies, Motorola, Sony Corporation, IBM, Mitsubishi Electric, United Technologies Corporation, Texas Instruments, Lockheed Martin, and Philips have all certified plants and facilities under ISO 14001. Internationally, the Volvo Car Corporation was one of the first companies to certify a product — its S80 sedan for 1999 — under ISO 14040 for life cycle assessment and ISO 14031 for environmental performance evaluation through Lloyd's Register Quality Assurance (Hart, 1999). And others, such as Xerox Corporation and Ford Motor Company, have not only certified their own plants but also encourage a third-party certification of all of their suppliers worldwide (International Environmental Systems Update, 1999). General Motors called for all of its suppliers to have their EMSs certified by external auditors to either the ISO 14001 standard or its European equivalent, the Eco-Management and Audit Scheme (EMAS) by 2002 (McCully, 1999).

Advocates of an international standard for assessing corporate environmental management systems claim substantial benefits for companies that adopt ISO 14001 guidelines. Others argue that because the standards do not measure environmental performance directly they are inadequate instruments for improving environmental sustainability (Krut and Gleck-