

Title	中小企業の環境経営を支援するシステムに関する研究
Author(s)	堀井, 雅俊
Citation	
Issue Date	2003-03
Type	Thesis or Dissertation
Text version	author
URL	<a href="http://hdl.handle.net/10119/446">http://hdl.handle.net/10119/446</a>
Rights	
Description	Supervisor: 梅本 勝博, 知識科学研究科, 修士



# Facilitating Small & Medium-Sized Enterprises’ Environmental Management: A Case Study of KES

Masatoshi Horii

School of Knowledge Science,  
Japan Advanced Institute of Science and Technology  
March 2003

**Keywords:** small and medium-sized enterprises, environmental management, ISO14001, environmental management system, PDCA cycle, knowledge creation

The purposes of this research are to build a theoretical model of environmental management in small and medium-sized enterprises from the viewpoint of knowledge management and to propose the policy for small and medium-sized enterprises realizing environmental management.

The major research question of this study is “How is the environmental management in small and medium-sized enterprises realized?” and subsidiary questions are as follows: (1) How was the environmental management system standard produced in Kyoto (KES) produced?; (2) What role did the persons who produced KES play?; (3) What thing is the problem which arises the time of small and medium-sized enterprises acquiring KES and after acquisition?; (4) How does the environmental management of small and medium-sized enterprises differ from it of the big business? The case of this study is KES produced as a small and medium-sized enterprises version of ISO 14001.

Through the literature review about environmental management, ISO14001, and the organizational knowledge creation theory, the following were discovered. In environmental management, important things are “consideration of earth environment” and “realization of the sustainable society.” The environmental management which the big business has promoted until now was construction of an environmental management system including acquisition of ISO 14001, and it was environment information disclosure to the interested party by the environmental report or environmental accounting.

The environmental management of such a big business cannot shift to small and medium-sized enterprises. In ISO 14001, important points are “continual improvement” and “Attestation performed by the third person.” When small and medium-sized enterprises acquire attestation of ISO 14001, there are problems, such as “shortage of the talented people who understand environmental management/audit system,” “expense which starts in case attestation is acquired,” and “the method of acquiring attestation.” In the organizational knowledge creation theory, various concepts were acquired. They are effective in order to amplify systematically the knowledge created by the individual and to tie to the competitive power of the whole organization.

The following were discovered through the data analysis of the case study. The knowledge which each of the industrial worlds, researchers, administration, and NGO has was gathered at the place a “corporate activity workgroup,” and KES was produced by sharing knowledge. At this time, the leadership of Mr. Tsumura who had participated in the “corporate activity workgroup” as an entrepreneur's representative and the know-how for acquiring ISO 14001 which the major company of Kyoto had, was a promotion factor. Some features of KES are as follows: (1) A company can tackle an environmental problem with concern; (2) It is applicable to the organization of various scales; (3) KES is that the contents of a standard and expression are plain and are low cost; (4) The level is divided into two steps. The important thing understood from the example of the company which acquired KES is setting up the environmental target adapted to the enterprise and evaluating environmental performance. Moreover, the role of the organizations called “KES club” and “green purchase network” was checked.

Theoretical implications from this study are as follows. The SECI process in the organizational knowledge creation theory can explain construction of the environmental management system. The SECI process corresponds to the PDCA cycle which makes the basis of the environmental management system. The environmental management and the knowledge management are promoted by the spiral rise of the SECI process and the PDCA cycle. Next, the environmental management of small and medium-sized enterprises was classified into three stages as follows: (1) The cost cut by curtailment of paper, electricity, and garbage; (2) The environmental improvement activities linked to the main occupation; (3) Development of new environmental products and services. In addition, the model which promotes environmental management was built with the viewpoint of knowledge.

Practical implications are as follows, and four important points considered to be useful in case the environmental management of small and medium-sized enterprises is promoted were extracted. (1) The environmental management system as a base of environmental management is built. (2) The middle manager's leadership is indispensable. (3) Environmental activity is evaluated and the consensus in a company is formed. (4) The network of small and medium-sized enterprises is utilized.

There are some suggestions for the future research. First, it is necessary to do more case studies about small and medium-sized enterprises' environmental management. Second, a quantitative study using survey should be conducted to support the findings of the study.