

Chapter 3.13

Using Knowledge Management Tools in Fostering Green ICT Related Behavior Change

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ABSTRACT

This chapter discusses the role of Green ICT in improving the management of information and knowledge about sustainability in order to promote behavior change. Drawing upon a knowledge management theoretical framework, this research investigates a free-of-charge Internet tool, Microsoft Hohm, which enables American homes to better manage their energy consumption. The study shows the relevance of designing Green ICT solutions, which cope with tacit and explicit knowledge, and reduce the complexity in managing information on sustainability. In addition, the investigation confirms that the combination

of sophisticated Green ICT interfaces with social media solutions offers better ways to foster behavior change through virtual socialization.

INTRODUCTION

Information and Communication Technologies (ICT) have an important role as tools for information management and knowledge management in an organization, fostering behavior change. Such behaviour change is of immense value as organizations move towards sustainable development. The domain of sustainability within an organizational context is extremely complex and new frameworks and approaches are required to reduce this complexity and to permit a better management of

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information and knowledge. Such simplification would improve the administration of energy and resources, and the production of waste. Successful management for sustainability is expected to foster behavior changes in the individual, the organization and in the society at large. The current state of environmental challenges is such that any effort to reduce resource consumption and waste production, from any direction, is welcome.

Many organizations are developing or adopting information systems, which embed functionalities for information management on sustainability. For example, Microsoft Dynamics (www.microsoft.com) and SAP (www.sap.com) enable the incorporation of environmental sustainability practices into Enterprise Resource Planning systems. These pieces of software may also be classified in a broader sense as Green ICT, as they specifically focus on improving the management aiming to promote sustainable practices.

The challenge in the domain of sustainability is that scientific bodies, organizations and individuals are not clearly knowledgeable about how to measure inputs and outputs for building sustainable enterprises and organizations (Bell and Morse, 2008; Kanie and Haas, 2004; Melnick et al. 2005). In the domain of sustainability, much still is unknown in terms of defining parameters of benchmarking and best practices (Bell and Morse, 2008; Pachauri and Reisinger, 2008). In this condition, it is much more difficult to promote behavior change, because conflictive pieces of information dispute the knowledge domain, and people are less motivated to change their behavior when they are not convinced about the utility of their effort.

A second fundamental aspect in the domain of sustainability is its complex and uncertain nature, highly depending on the context (Kanie and Haas, 2004; Pachauri and Reisinger, 2008). A degree of generalization is possible when discussing topics related to sustainability. However, as important as generic knowledge is, it is also important to have specific knowledge that is related to the context in

focus. The environmental science *per se* is a field in which most knowledge depends on the efficient overlapping of what we know generically and what is known locally. In practice, the contextual knowledge also feeds back to the more generic level of knowledge, in a continuous loop which generates advancements in the knowledge related to sustainability. In addition, economic, social and political context in which the organization finds itself are also important when in bringing about behavioral changes in the area of sustainability.

Individuals, organizations and societies will not change their behavior towards the environment just because of availability of scientific data and publication of scientific knowledge. Indeed, people will interpret the scientific knowledge on sustainability in accordance with their understanding of needs. These needs of people depend on broad economic, social and political contexts. Change in behavior is brought about by a receptive attitude built through the interplay between scientific knowledge and social perspectives.

Thus, management for sustainability demands a multi-disciplinary approach, from the generic to the contextual level, and from the scientific to the economic, social and political levels. This is shown in Figure 1.

This chapter develops a theoretical argument that Green ICT for fostering behavior change should take into account information management and knowledge management strategies. This work draws upon studies which point to the difficulties related to the management of sustainability and the need to create consistent frameworks which diffuse best practices on the domain (Haas, Kanie and Murphy, 2004; Kanie and Haas, 2004). In order to investigate the applicability of the proposed theoretical approach, this chapter analysis a free-of-charge Internet tool, Microsoft Hohm (<http://www.microsoft.com/environment/hohm.aspx>), which helps managing energy consumption in American residences. This example has been chosen because of the sophistication of the tool

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