Green Information Systems Integration in Information Technology Based Organizations: An Academic Literature Review

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Abstract

In the last decades, environmental sustainability has become a significant organizational consideration. Yet, regardless of the ability of Information Systems (IS) to lower Information Technology (IT) based organizations' adverse environmental effects has not been fully achieved. Research has shown that the integration of Green practices in IT based organization is still relatively low. In order to better understand how Green practices affect the formation and outcomes of IT based organizational projects. The integration of Green IS strategies and initiatives within organizations business activities has become a vital enterprise need. However existing scientific contributions and discussions in Green IS are mainly based on empirical surveys and case studies. Furthermore, little research has been undertaken to highlight the contribution of IT based organizations in integrating Green IS practices in their business process and only few review papers relating to Green IS has been published. Although, there has been other review papers published in this domain, no paper has reviewed how IT based organizations integrated Green practices into their day-to-day business process. Therefore this paper carried out a literature review to synthesize and extract data from existing academic publications to review and report the current Green IS practices integration in IT based organizations. Findings from this review presents the sustainability goals to be attained and also shows that currently IT based organizations are beginning to integrate Green IS strategies and initiatives in their business process but are encouraged and at times limited by determinants (enablers and inhibitors).

Keywords: Green information system, Sustainability, Green integration, Academic literature review, Information technology based organizations

1. Introduction

Eco-friendly and sustainable strategies in Information Technology (IT) based organizations have emerged as crucial topics in research over the last few years. Sustainability has progressively become imperative to organizational practice and research since the 1990's, as a result of rapid utilization of natural resources and distresses over corporate social responsibility (Elkington, 1997; Elkington, 2004). Sustainability was defined by the Brundtland Commission as development that meets the wants and need of the present day, without conceding the ability of future generations to achieve their own wants and needs (WCED, 1987). According to WCED (1987) for organizational development to be sustainable, the decision of practitioners, management and stakeholders about institutional orientation, technological innovation with natural resource utilization have to be stable with present as well as needs future (Leyland et al., 2011). For IT based organizations, this entails complementing the alignment of economic target with corporate responsibility toward the natural environment and the wider society. Thus, an acceptable way of describing sustainability in IT based organization is through its orthodox paradigm that encompasses economic, environmental and social needs (Alemayehu et al., 2011).

In another study Hart and Milstein (2003) suggested that eco-sustainability practice in organizations is mostly concerned with reducing emissions, lessen water usage, diminish waste generation, improving effectiveness and lessening the total environmental footprint of enterprise business strategies. Hart's (1997) also recommended that organizational sustainability strategies of product stewardship, pollution prevention and sustainable development can offer a better and more organized ideal foundation to enlighten IT based organizational Green practices. Green Information Systems (IS) integration in IT based organizations includes the use of technologies to transform enterprise initiatives by integrating practices that preserve materials; that are non-polluting, energy proficient and produce lesser waste (Mohamad et al., 2011).

The state of creating a balance of social responsibility, environmental obligations with economic profitability is usually referred to as the Triple Bottom Line (Alemayehu et al., 2011). IT usage in organizations and the society at large has resulted to IT causing damage to the environment.