

Chapter 5.9

Information Systems for a Green Organisation

Yogesh Deshpande

University of Western Sydney, Australia

Bhuvan Unhelkar

University of Western Sydney & MethodScience, Australia

ABSTRACT

Green ICT is the study and practice of using computing resources efficiently and effectively with minimal or no impact on the environment. It is a new and rapidly evolving discipline with new terminologies, experimental results, regulatory restrictions and policy recommendations from scientists, ICT organizations and governments. Organizations need to monitor their practices and ICT usage carefully in order to formulate effective policies, control processes and manage content based on sound architectures. Green ICT contains a high level of complexity because of uncertainty of processes, data quality and reliability. It is also beset by dissent and debate that

engulfs wider disciplines such as technology itself, sociology, ethics and law – all of which reflects into the amalgamation of wide ranging data. The success or failure of Green ICT policies is determined by the way an organisation manages the participation and social interactions of its employees and customers. A green organization works on enhancing the data and information management within the organization that revolves around information systems, their databases and their applications. This chapter takes cognizance of the overall complexity of the field and aims to bring to the fore formal, research-based approaches to the use of data and information in the domain of Green ICT to enable organizations to change in a systematic, controlled and measured manner through information portals based on ontologies. The ontological considerations include user per-

DOI: 10.4018/978-1-60960-472-1.ch509

spectives on green ICT, actual use of information in greening an organization, and dispersal of knowledge not only within the organization but also across the industry.

INTRODUCTION

Green ICT, usually termed Green IT or Green computing, has been defined or described by several sources (Murugesan, 2008, Lamb, 2009, Wikipedia, 2010 and Webopedia, 2010). Murugesan (2008) gives a comprehensive definition which is also used by Wikipedia (http://en.wikipedia.org/wiki/Green_computing, retrieved on 7.2.2010): “the study and practice of designing, manufacturing, using, and disposing of computers, servers, and associated subsystems—such as monitors, printers, storage devices, and networking and communications systems—efficiently and effectively with minimal or no impact on the environment. Green IT also strives to achieve economic viability and improved system performance and use, while abiding by our social and ethical responsibilities. Thus, green IT includes the dimensions of environmental sustainability, the economics of energy efficiency, and the total cost of ownership, which includes the cost of disposal and recycling. It is the study and practice of using computing resources efficiently.”

Lamb (2009) simplifies this definition to: “Green IT is the study and practice of using computing resources efficiently” and elaborates on it in an almost identical fashion to Murugesan. Webopedia’s definition also includes all stages in the life cycle of ICT equipment, from manufacturing to final disposal.

This chapter considers Green ICT mainly from the perspective of non-ICT manufacturing organizations. Green ICT then relates to acquisition, usage and disposal of ICT equipment in an environmentally friendly manner. The ICT equipment will range from laptops, PCs and printers to all types of servers and data centres.

By consensus, the supporting equipment such as air-conditioning units or facilities like specialized centres are excluded from Green ICT.

The chapter assumes that organizations will want to create and implement policies and procedures for Green ICT. This assumption is important because the topic of climate change has raised controversies and doubts have been cast on the methodologies used in assessing the climate change. Even as this chapter was being drafted, there were newspaper reports that two major organisations conducting research in climate change, viz. Intergovernmental Panel on Climate Change (IPCC- <http://www.ipcc.ch>) and Climate Research Unit (CRU) at University of East Anglia (<http://www.cru.uea.ac.uk>), had not shown due diligence in drawing conclusions about cause and effect of climate change. Since then, the allegation has been refuted and additional criticisms, including in Australia, of political interference in scientific validity of climate change are being flagged (<http://www.abc.net.au/news/stories/2010/02/11/2816431.htm>). It is safe to assume that an organization will seek ways and means to start working towards Green ICT policies.

The issue of reliability and credibility of data and information in the green space has assumed significant proportions. This challenge to reliability is further compounded by the enormous amount of data and information available from diverse sources, such as ICT manufacturers, research organizations and governments at local, national and international levels. The chapter takes cognizance of the overall complexity of this field and aims to bring to the fore formal, research-based approaches to the use of data and information in the domain of Green ICT to enable organizations to change in a systematic, controlled and measured manner. While the overall ‘green agenda’ is a movement in the right direction, the concerns addressed in this chapter are important from an information systems perspective. The approach outlined here will enable organizations to bring about sensible and sustainable changes in the

13 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/information-systems-green-organisation/51760

Related Content

Green Energy in Data Centers Using Internet of Things

Vasaki Ponnusamy, Bobby Sharma and Gan Ming Lee (2021). *Role of IoT in Green Energy Systems* (pp. 225-246).

www.irma-international.org/chapter/green-energy-in-data-centers-using-internet-of-things/272397

Advancement of Agri-Trading Systems Towards Improving Farmers' Economic Situations in Bangladesh

Mohammad Fahim Khan, Mohammad Mahmudul Hasan and Sheikh Aysha Khatun (2022). *International Journal of Environmental Sustainability and Green Technologies* (pp. 1-17).

www.irma-international.org/article/advancement-of-agri-trading-systems-towards-improving-farmers-economic-situations-in-bangladesh/306236

Efficient Information Provision for Environmental and Sustainability Reporting

Cigdem Akkaya, Petra Wolf and Helmut Krcmar (2011). *Green Technologies: Concepts, Methodologies, Tools and Applications* (pp. 1587-1609).

www.irma-international.org/chapter/efficient-information-provision-environmental-sustainability/51780

Comparing the MLC and JavaNNS Approaches in Classifying Multi-Temporal LANDSAT Satellite Imagery over an Ephemeral River Area

Eufemia Tarantino, Antonio Novelli, Mariella Aquilino, Benedetto Figorito and Umberto Fratino (2015). *International Journal of Agricultural and Environmental Information Systems* (pp. 83-102).

www.irma-international.org/article/comparing-the-mlc-and-javanns-approaches-in-classifying-multi-temporal-landsat-satellite-imagery-over-an-ephemeral-river-area/137164

Decreasing the Digital Divide by Increasing E-Innovation and E-Readiness Abilities in Agriculture and Rural Areas

Miklós Herdon, Szilvia Botos and László Várallyai (2015). *International Journal of Agricultural and Environmental Information Systems* (pp. 1-18).

www.irma-international.org/article/decreasing-the-digital-divide-by-increasing-e-innovation-and-e-readiness-abilities-in-agriculture-and-rural-areas/120469