Chapter 42

Understanding the Context of Green ICT

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ABSTRACT

Green ICT can be considered as the adoption of eco-friendly processes by an organization in its practice of Information and Communication Technologies. The last decade, in particular, has seen profound awareness on the part of individuals as well as organizations in adopting such processes that are environmentally friendly. While automation and related computing activities continue to lead to exponential use of energy quotient, Green ICT continues to chip away at the 'resigned' views of the decision makers to their environmental responsibilities. It is vital today to understand the increasing importance and the context provided by ICT in helping prove the green credentials of an organization. ICT operates at systems and applications level; at the end-user level through the desktops and printers; and at the enterprise level through its data centers, servers and other infrastructure. Green ICT is all about optimization and improvement of the organization's operational processes without hindering its progress in use of technology. This chapter discusses the context provided by ICT in helping an organization to prove its green credentials. The issues discussed in this chapter include hardware and software implementations, infrastructures, attitudes and policies of decision makers, and how they influence global warming. Therefore, it includes carbon emissions, and the use of software applications in measuring and reporting carbon emissions.

INTRODUCTION

Change in climate has been a major concern in past two years. Increasing levels of green house gases such as carbon dioxide, methane etc led to rise in earth's surface temperature resulting in global warming. With the increase in awareness of global warming, individuals and organizations have started taking steps towards greening the environment. Several standardization bodies like

The Global ICT Standardization Forum for India (GISFI), the European Telecommunication Standardization Institute (ETSI) etc. lead the greening of ICT. Green ICT is usually referred as greening the Information and Communication Technology industry. Green ICT community encourages the organization to follow eco-friendly processes and nominate eco-leaders to drive the promotion of green ICT within the organization.

DEFINING GREEN ICT

Green ICT is "adaptation of eco-friendly processes, materials and infrastructure by an organization in its practice and use of Information and Communication Technologies".

The reason for understanding and promoting the usage of green ICT is that it plays a vital role in the operations of an organization. ICT is also a significant contributor to the Green House Gases, resulting from the organization's business activities. Such understanding, through a carefully thought-out framework, can assist the organization with the following:

- Identify the areas of operations within the organization that are producing Green House Gases (GHG)
- Measure the amount of GHG being produced by the organization
- Optimize the energy usage by the organization while producing and delivering their goods and services
- Lessen the usage of hazardous materials and their proper disposal
- Promote the recyclability of materials and biodegradability of discarded products and factory waste.
- Create awareness among all the employees across the organization towards adopting Green ICT.

Green ICT considerations in practice have the potential to provide substantial amount of eco-friendly benefits. In major countries like UK, Japan, Republic of Korea, etc; Governments provide special subsidy and tax exemptions to the organizations that are implementing Green ICT policies (HM Revenue & Customs, 2008; WEC, 2001; UNESCAP, 2000). Green ICT is also being used as a USP (Unique Selling Proposition), every company campaigns it's product by proposing a unique point which attracts the customers to switch to their brands. Nokia has already started green campaign by recycling older mobile phones (Nokia, 2009). Hence, the above factors encourage organizations to use Green ICT in order to sell their products and thereby displaying the eco friendliness of the company.

GLOBAL WARMING AND GREEN HOUSE GASES

Global warming has become a phenomena spread across geographies and there have been increasing concerns about the reasons for the earth's warming. The term Green House Effect was originated from green houses used for gardening in cold weather. These green houses were built of glasses, plastic or translucent material. These houses heats up mainly because the sun warms the ground inside it and this in turn warms up the air within the green house. The air continues to heat up as it is trapped inside the glass house while in atmosphere the hot air gets mixed with the cool air. The enhanced green house effect is trapping the heat over the entire earth leading to anthropogenic global warming which is caused mainly due to the human activities such as burning of fossil fuels (like coal, oil etc), usage of electricity, cutting of trees etc (John Houghton, 2004).

Green House Gases can be defined as the chemical compounds found in the earth's atmosphere which traps the outgoing terrestrial radiation and warms the earth's atmosphere. The increase of

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