

## **Implementing Green IT**

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### **What is Green Technology?**

Although the Copenhagen Summit in Dec last year was a great disappointment for many countries and organisations, companies that are involved in researching or delivering green technologies are continuing to work on these fronts though some have re-prioritise their earlier activities. But, what is green technology?

At the higher level, technology refers to the application of knowledge to achieve practical solution and Wikipedia <sup>(1)</sup> defines "green technology" as the "application of the environmental science to conserve the natural environment and resources and to curb the negative impacts of human involvement". In a number of situations, green technology is used interchangeably with "environmental technology" and "clean technology". However, this generic definition often put off many smaller organisations that are planning to do their part in reducing their organisations' impact on the environment as they generally have limited capital or resources to access the services of the environmental science practitioners. Moreover, many such organisations understand that wide spread adoption of technology in office automation in particularly the use of information technology often lead to the need to purchase various computer equipment and accessories that consume more electricity and increasingly, the concern over how to dispose off obsolete equipment at the end of the equipment shelf-life. For large organisations, data centres are becoming a critical IT infrastructure that these organisations rely upon for their daily operations and to support mission critical functions

According to the July 2008 McKinsey study, "Revolutionalising Data Centre Efficiency <sup>(2)</sup>, data centres typically account for 25% of the organisation's total IT budget and data centres around the globe take up 1.0% of the world's total energy consumption <sup>(3)</sup>. In the US, data centres energy consumption is equivalent to the output of 10 major power generation plants. Considering the high green house gas (GHG) emissions from data centres, the US Congress passed a law in 2006 requiring the Environmental Protection Agency (EPA) to submit a report on the energy consumption by data centres.

### **The Approach to Green Technology**

Before we discuss the implementation strategy, let's examine the 3 key characteristics of Green Technology that are relevant to IT. Firstly, IT equipment and applications that run on them must use energy efficiency. Secondly, only use appropriate IT solution for the task on hand and finally, proper disposal of IT equipment must be considered.

While these key requisites for Green IT are not rocket science, they are often overlooked or ignored in various organisations. Take the first instance of using energy efficiency IT equipment. While many organisations understand that the total cost of ownership must be considered before making IT investment decision; it is not uncommon for most organisations to focus primarily on the initial procurement costs and use this as a key buying decision factor. Taking the cue, manufacturers are concerned about designing their IT products and equipments using low cost components that often do not have energy optimization capabilities. In the long term, these equipment leads to higher consumption of energy and correspondingly, a larger carbon footprint for the organisations that use these equipment.

It is unlikely for any one to use a sledge hammer to put a small nail into a plank but this is often not the case when organisations are designing/deploying IT solution or installation equipment to meet their organisations' needs. In the same earlier study by McKinsey, it was found that server utilisation rarely exceeds 6% and facility utilisation in the data centre can be as low as 50%. For most organisations, online enquiries and transactions occur during the day while batch processing in the night and in many cases, only some servers are involved in these activities but yet, all the servers, disk drives and back-up devices are operating 24X7 consuming electricity and generating heat that requires another set of electrical powered devices to cool these servers and the data centres.

While many are aware that the IT equipment that we used are made up of many different components using a wide varieties of materials, not many are aware that these components use cadmium, mercury, lead, bromine, PVC vinyl, etc which are both hazardous to both human being and the environment when these obsolete equipment are not disposed off in a proper and safe manner. The interested readers could go to the Green Peace website <sup>(4)</sup> to find out why Nokia and Sony Ericsson are taking the lead in cleaning up their products (by eliminating hazardous materials), taking back and recycling obsolete products and reducing impact on climate change.

### **The Green IT Department**

According to a 2009 Global survey by Symantec <sup>(5)</sup> that covered more than 1,000 companies worldwide, 97% of the respondents indicated that going green is already part of their IT strategy. Moreover, over 40% of the respondents also are prepared to pay as much as 20% premium for energy efficient products. Other key findings of the survey were:

1. Green IT is now an "essential"
2. Green IT budgets are rising
3. IT is willing to pay a premium for green equipment
4. IT is at the heart of enterprise green efforts
5. Green IT initiatives are more of a priority

So how do organisations especially IT departments start to include Green IT as part of their overall IT strategies?

In the book "Green Tech: How to plan and implement sustainable IT solutions" <sup>(6)</sup>, the authors recommend that organisations could start by cleaning clutters followed by studying the details of the Seven Wastes (Toyota's methodology) to eliminate these wastes and conclude by using Process Mapping to examine processes and to identify non-value added steps.

In summary, IT is business critical for organisations and as such, environmental issues including managing energy consumptions and minimising the organisation's carbon footprint cannot be operationalised without leveraging on IT. Hence, it is very important that leadership in organisation start looking at revolutionalising how its IT department operates.

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Notes:

(1) Definition of "Green Technology" by Wikipedia can be found at <http://en.wikipedia.org/wiki/Green-technology>

(2) Revolutionalising Data Centre Efficiency by McKinsey at <http://www.slideshare.net/McKinseyandCompany/mckinsey-data-center-efficiency-external-v2-431235>

(3) World wide electricity used in data centers by Dr Jonathan Koomey at <http://iopscience.iop.org/1748-9326/3/3/034008>

(4) Green Peace web site "Guide to Greener Electronics" May 2010 at

<http://www.greenpeace.org/international/en/campaigns/toxics/electronics/how-the-companies-line-up/>

(5) 2009 Global Survey by Symantec at <http://www.greenbiz.com/news/2009/05/27/green-it-gaining-importance-globally-report>

(6) Lawrence Webber and Michael Wallace, "Green Tech: How to plan and implement sustainable IT solutions", American Management Association, USA, 2009

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