3 Building Blocks to a Green IT Strategy

Creating sustainable business practices is becoming an increasingly critical function in today's organizations. Whether it is for reasons of cost-saving, corporate mandates or a general desire to green the company, the need for sustainability is rapidly increasing.

Making your IT department sustainable is best done with quick, easy, high-return steps. After reading this paper, you will better understand how to create a green IT strategy for your company through determining your baseline footprint, drafting a list of green objectives, and planning real-life steps to meet your goals.

Executive Overview

Evolving an IT department into an environmentally-friendly unit requires the combination of a high-level strategy and a detailed execution plan. This document is designed to assist organizations in developing their green IT strategies through providing them with a step-by-step process for reducing their environmental footprint.

At the highest level, the three steps necessary for developing a green plan include:

1. Determining your current environmental footprint (baseline)
2. Defining your green objectives
3. Implementing green best practices

Upon finishing this reading, you should have an understanding of how to guide the development of a green IT plan for your organization using simple and easy-to-implement tactics that will make a significant difference in your organization's IT environmental footprint.

Introduction

As global warming becomes an even more prevalent topic of conversation, there also emerges a raised social consciousness around how seemingly minor human actions can have a major impact on the world. Because of that, employees in today's organizations are starting to more frequently field inquiries about their sustainability practices.

While it is certainly a concern for most IT departments in corporate America, implementing green IT initiatives need not be a crisis. A thoughtful strategy built upon incremental steps ultimately leading to a cleaner, more energy-efficient and environmentally-friendly IT department is the key to success.

Before you can begin the process of creating a green IT strategy, it is important to have a basic understanding of how IT can impact the environment. The primary environmental impact of IT is comprised of the resources and energy required to manufacture, run and dispose of IT hardware. This paper is not designed to address these issues in depth – rather it is meant to translate the issues into action items for your organization.

Creating a Baseline

The first step towards creating a green IT strategy is to determine your organization's current impact on the environment from an IT perspective. This step will enable you to further reduce consumption, catalogue system improvements and plan for future energy needs.

Beyond that, understanding your baseline will also help in examining the elements of green IT that are within the control of your organization, and those that are not. Understanding your current practices will help guide any discussions about potential trade-offs and define when a green objective will take priority over a cost or performance objective. Furthermore, this baseline will help in the evaluation of payback on any green initiatives that are slated. Armed with this baseline of information, you will be able to inform and educate others on reasonable green objectives and highlight the successes from initiatives designed to green up IT.

Step 1 – Energy Consumption Analysis

To figure out your energy consumption, you will need to create an energy consumption baseline for your current IT hardware: desktop PCs and associated monitors, laptops, servers and equipment, and networked peripherals such as printers and scanners. This inventory will be used to create an estimate of annual energy use.

One method of creating this energy consumption baseline would be to take a current IT asset inventory and create a mathematical estimate of your energy consumption using industry averages from organizations such as the Department of Energy. For PC networks specifically, a simpler approach would be to utilize software that manages the PC energy settings at a network level.

These solutions, such as SURVEYOR software from Verdiem, give you a more accurate picture of energy consumption in

your organization based on actual user behavior. Utilities and energy service providers are often an excellent resource when looking for this type of solution.

In addition to the energy consumed when operating the PC, it is important to take into account the heating, cooling and ventilation requirements necessary to operate your network. This can be a major environmental impact. According to IDC, 48 cents of ever dollar spent on a new server goes to power and cooling.[i]

Step 2 – Catalog disposal practices
The next step in creating your footprint baseline is to catalog your current hardware disposal practices.

Does your organization use a certified PC recycler who ensures toxic and hazardous materials inside the PC or monitor are disposed of properly? Do you participate in the server manufacturer's disposal program where parts are returned to them for reuse whenever possible? Make sure to also account for resale or donation programs in your catalog.

Step 3 – Examine acquisition and hardware lifecycle
The final step in creating the baseline is to catalog your acquisition and PC lifecycle practices. Understanding the average lifespan of a PC in your organization will help to determine how to measure the environmental impact of manufacturing a PC. Note the average refresh cycle of your organization's desktops, as well as the current lifespan of servers. Include any significant upgrade or replacement plans in the next 12 to 24 months. In this step, also take note of any consideration your organization gives to green manufacturing practices during the purchasing process.

Green Objectives

Now that you know your IT department's current environmental impact, start identifying and focusing on some green IT objectives for your organization.

Every organization is different, and objectives will be the result of defining areas where you can reduce costs, adhere to regulation and/or legislative requirements and align with the social responsibility promises made by your organization.

The objective of going green is fraught with many trade-offs along the way, and sometimes what seems like the greenest of all solutions may not really be green at all. For example, while it may seem that replacing existing desktop PCs with more energy-efficient models is an environmentally-friendly decision, the more positive impact might be to actually keep the current equipment and operate it more efficiently.

A 2004 United Nations University study showed that 1.8 tons of raw materials are used to manufacture the average desktop PC and monitor.[ii] That means the machine's lifespan is a significant factor in how environmentally-friendly it is. Therefore, the best way to minimize the impact on the environment from a personal computer is to extend its useful life as much as possible.

Understanding the business driver behind an objective will also help ensure that decisions made to meet objectives are as green as possible.

Small Steps, Big Gain

Once you have determined your IT environmental footprint and defined objectives for your green IT strategy, you can then begin the process of implementing the practices that will actually create a more sustainable IT department.

Just as people make their homes more environmentally-friendly through a series of smaller actions, so organizations have the ability to do the same.

Take a look a the following IT practices that can be implemented in your organization today.

PC Power Management
The single greatest opportunity for reducing energy consumption in most organizations is to implement a network-level PC power management solution. According to Gartner, PC energy usage accounts for 40% of organizations' total IT device consumption, while servers and cooling account for just 23%.[iii]

Historically, most organizations have kept desktop PCs running 24-7 and set operating system power management settings to have the monitor off or the machine in standby, both of which consume almost as much power as when the machine is fully powered and idle.

In the past, IT was faced with an either-or decision regarding PC power management. Desktop managers needed access to networked PCs for general maintenance and urgent security updates. Inconsistencies between operating systems and software applications or network security issues made waking machines from a lower power setting such as sleep or hibernate inconsistent and unreliable.

Operating systems and software applications, in addition to network-level PC power management solutions, addressed these issues and opened up a significant opportunity for organizations to save money and reduce IT energy consumption.

Conservative estimates put wasted energy consumption of unused computers at a third of the overall consumption. With a network-level PC power management solution, organizations can implement policies that reflect user behavior, accommodate IT maintenance needs and ensure a reduction in energy consumption for idle computers – all without impacting end-user productivity. The simplest way to increase energy efficiency of a PC is to use a network-based solution to implement power-setting policies that reflect user behavior and move the machine to sleep or hibernate when

not in use. Most organizations that implement a PC power management strategy find they can save between $20 and $60 per PC annually, and reduce overall energy consumption by at least a third. For an organization with 5,000 PCs, for example, that savings translates into reducing carbon emissions by 1.7 million pounds every year. This action can save organizations substantial money, and have a very significant impact on the environment.

Extend the useful life of IT hardware
Another opportunity for organizations to reduce their environmental impact is to extend the useful life of their IT hardware. This is because of the substantial amount of energy used in the hardware manufacturing process. In fact, the amount of raw materials necessary to produce the average PC is equivalent to the amount of materials necessary to build a midsized car.[iv] The lifespan, however, of a mid-sized car is approximately 10 years, while most PCs have an average lifespan of three years in corporate America. By extending the life of PCs in your organization, you can significantly reduce the environmental footprint of that PC.

Another way to extend the useful life of IT hardware is to delay your refresh cycle by 6 months to a year. The delay will likely have little impact on desktop reliability while providing a big benefit to your green IT program.

Once PCs are at the end of their lifecycle in your organization, consider participating in a PC recycling program that focuses on reselling machines or donating them. Many charities will put them to use in schools or ship them overseas to third world countries. While these programs can require more legwork from an IT department than simply shipping the machines directly back to the manufacturer, they go a long way towards reducing the overall environmental impact caused by manufacturing.

TRULY Green recycling programs
Ensuring proper disposal and recycling of the internal components of your IT hardware is another green tactic. This is especially crucial because of the more than 1,000 chemicals used during electronics production that are considered a health hazard or toxic. According to an eWeek article, these toxins, such as lead, mercury, and cadmium, have been linked to cancer, reproductive problems and other illnesses.[v] According to the Silicon Valley Toxics Coalition, this so called "e-waste" is the fastest growing part of the waste stream, accounting for 2 percent of the municipal solid waste in the US.[vi] Many cities, counties and states regulate the disposal of IT hardware in the same way they do hazardous waste.

Another green strategy that has significant impact and is easy to implement is to review your current recycle and disposal program to ensure that all recyclable parts are returned to the manufacturer, and that equipment bound for disposal is not sent to countries with less-stringent regulation.

Considering green in acquisition
Beginning to understand the energy efficiency of new acquisitions is another green strategy to consider. It is a given fact that in order to maintain your IT department, investments in new hardware are necessary. While the idea of replacing all existing equipment for the sake of energy efficiency is a strategy fraught with problems, ensuring efficiency in new and necessary purchases is absolutely essential.

Unfortunately, most companies are not investing in energy-efficient PCs, according to research from IDC.[vii] In a C|net news article, Daniel Fleischer, senior research analyst at IDC, cites cost as the major barrier in this practice, and yet Catriona McAlister, a senior consultant at AEA Energy and Environment, said, "There is absolutely no correlation between the cost of the PC and its energy efficiency."[viii]

Ultimately, you will not know unless you ask, so try to add some basic language around energy efficiency and environmental impact to your standard RFP and begin including this information in your buying decisions. Armed with information about the energy consumption and cooling requirements, you will not only be able to accurately project TCO, you'll also be able to see how the new acquisition fits into your overall green strategy.

Conclusion
Going green is a process that takes time and often involves trade-offs. It is important to keep this in mind when creating and implementing your green strategy.

The determination of your IT environmental consumption baseline will assist in examining where your organization is currently at, as well as its potential for the future. Creating objectives that reflect both the green desire and the business driver will ensure the strategies put in place are truly green. Finally, by implementing any or all of the strategies included in this paper, your organization can take its first step towards building an IT department that is environmentally friendly.

Confucius said *the journey of a thousand miles begins with a single step*. This saying is especially relevant in creating your organization's green IT strategy. While it is important to think about green IT on a grand scale, the greatest impact is in the simple strategies and tactics that can be implemented today.

About Verdiem
Verdiem provides network energy management solutions. Its enterprise software increases business performance and sustainability by monitoring, measuring and managing IT energy use and related greenhouse gas emissions. The company's relationships with technology and energy efficiency leaders help it to deliver best-in-class solutions to global businesses and individuals. Founded in 2001, Verdiem is a mission-driven company headquartered in Seattle with additional offices in the US and UK.

[i] "Green IT: Popularity due to Savings or Morals?" Johanna Ambrosio, Computerworld, September 13, 2007
[ii] "UN Study: Think upgrade before buying a new PC", Martyn Williams, IDG Newservice, InfoWorld, March 7, 2004
[iii] Gartner, Conceptualizing 'Green' IT and Data Center Power and Cooling Issues, September 2007
[iv] "UN Study: Think upgrade before buying a new PC", Martyn Williams, IDG Newservice, InfoWorld, March 7, 2004
[v] "5 steps to green IT", Tiffany Maleshefski, eWeek.com, October 12, 2007
[vi] "5 steps to green IT", Tiffany Maleshefski, eWeek.com, October 12, 2007
[vii] "Green IT: Do it for the money, if nothing else", Will Sturgeon, C|net News.com, November 27, 2006
[viii] "Green IT: Do it for the money, if nothing else", Will Sturgeon, C|net News.com, November 27, 2006