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Green IT Trends and Its Initiatives

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ABSTRACT

Green IT initiatives have gained momentum in the past few years and more and more organizations across the globe, are dedicating their strategic and financial resources to integrate their business goals with green IT practices. Not only there is a growing market potential for green products and services, but also an intense cost cutting and energy saving focus specially in the turbulent economic times. Recycling of obsolete IT products, E-Waste, reduced energy consumption through better utilization of information technology tools, virtualization or cloud computing for optimizing resource use are few of the most commonly used green IT initiatives. The present paper is attempt to throw light on current and future green IT trends and the challenges ahead as well as the important issues and concerns on the topic.

Keywords: Green IT, CSR, Sustainability, Smart Energy, Energy Efficiency and E-Waste.

1. INTRODUCTION

Cost cutting, sustainability and CSR have been the buzz word in the corporate world during last decade. And 'Green', undoubtly fits these all……one element that is a strategic imperative and a tool to gain competitive advantage, especially with a focus on sustainable development. The present decade is now dedicated to ECO – Innovation and IT Efficiency with a focus on GREEN. Software and IT services in the worldwide smart energy delivery market is likely to grow by 23% between 2011 and 2012, a study predicts. Figure 1 below gives an idea about the concept of green technology.

Figure 1 Source: www.it-sideways.com

Report of 2009 worldwide green IT report, 45% of surveyed IT professionals have already implemented Green IT initiatives, few of which are discussed below.

2. THE GREEN IT TRENDS

When the Uptime Institute recently surveyed 525 data center owners and operators, most of them in North America, one of the questions was: "Which of the following power-saving strategies have you already implemented, or will you implement in 2011?"

Five strategies are far and away the most popular (Figure 2 below)

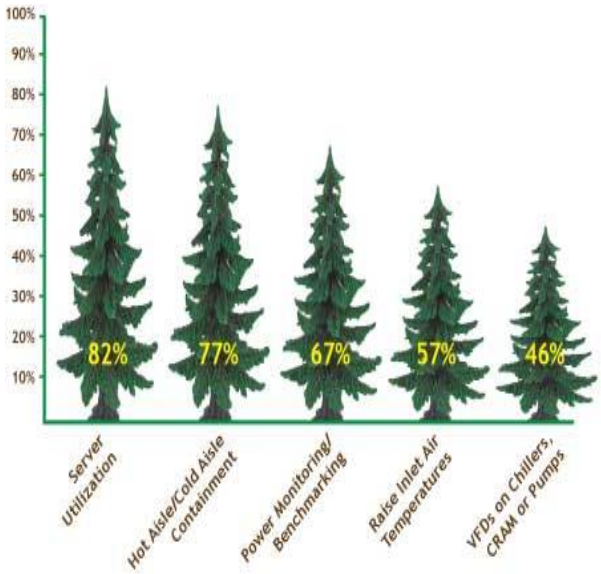

Figure 2 Source: www.easystreet.com

2.1 Virtualization and Consolidation

The argument in favour of server virtualization and storage consolidation in data-driven businesses could not be more solid. These strategies reduce the inventory of on-site hardware, which delivers immediate cuts in energy consumption. Additionally, smaller space requirements to store the reduced amount of hardware enable companies to optimize the use of the available square footage to operate. In turn, smaller spaces require less electricity to cool the space and associated hardware that on average accounts for 23% of current IT energy consumption.

2.2 Energy Efficiency

Considering that, on average, IT-related electricity demands account for 20% of a building's energy consumption, the efficiency strategies that will make a real impact on your balance sheet and environmental record are more

elaborate than simply replacing bulbs and ballasts. Network-level energy management software enables professionals to centralize the management of power settings on PCs and monitors, ensuring that your network is configured to efficiently respond the true power demands of staff members. A key opportunity for investing in energy efficiency takes place during the acquisition phase when you have the option to purchase optimized devices (lighting, cooling, drives, monitors and machines) such as those certified by the Energy Star program.

2.3 Travel Reduction

An emerging arena through which companies are quickly reducing their carbon footprint is found in the adoption of IT services that enable employees to travel less. IT departments are the backbone of a company's ability to provide a virtual work environment for the execution of work tasks, access to information and training materials. IT solutions to cutting back on corporate travel include delivering an infrastructure with capabilities for video conferencing and teleconferencing to internal and external company locations. Additionally, web-based tools for collaboration and project management combined with VPN, remote access and integrated voice communications systems provide employees with off-site access to essential business data.

2.4 Asset Disposal

Nationwide, we are now seeing trends towards legislation that regulates the disposal of IT hardware similar to how hazardous waste is regulated. Although the cost-savings implications of properly decommissioning hardware is less than the strategies listed above, the argument can still be made based on the virtues of corporate responsibility. Due to the content of toxic materials housed within IT devices, the proper disposal of obsolete hardware ensures that you are in compliance with environmental regulations geared toward protecting public health.

Formalizing a recycling mandate within your company provides added value to new and existing customers, as this concern is increasingly on the mind of potential consumers. In addition to regulatory demands, customers are inquiring more often about the corporate recycling mandates that a company has in place. Charity organizations are great outlets for extending the lifecycle of your equipment. Organizations specializing in IT hardware recycling estimate that repurposed equipment provide an additional 6,000 hours of usage to users when devices are shipped overseas to developing nations for re-use.

2.5 Carbon Emissions Control

In current era, carbon emissions from Information Technology & communication technologies represent 2 percent of global CO2 output, which puts information technology (IT) on par with the aviation industry in terms of carbon pollution. With an average increase in emissions of roughly 12% per year, IT has become the fastest growing industry for contributing to the carbon content in our Earth's atmosphere. However, where consumption is highest, you can also typically find the greatest opportunities to conserve. Businesses of all sizes are starting to turn to their IT departments for strategies to reduce their carbon footprint while also improving services and cutting costs. Being identified as one of the most successful arenas to adopt efficiencies and to improve services through sustainability

strategies, corporate IT departments are now enabled to emerge as the green thought leaders within their companies.

There's a solid business case for adopting a Green IT strategy and getting started is well within the reach of what companies of all sizes can afford. The U.S. EPA estimates that 20% of the energy demands in a typical office building are derived from the power needs of PC related office equipment. Just leveraging the existing power management features of a typical Windows operating system on most personal computers can save companies roughly $30 to $40 per month, per device.

Although shifting from desktop computers to laptop machines requires an initial investment in the hardware, the lesser energy needs of laptops result in energy cost savings as well as environmental benefits. Recent figures indicate that if 200,000 desktop computers were replaced by laptop machines, we would save 40,000 metric tons of carbon pollution, which is the equivalent output of 8,000 cars or, 4,000 homes.

3. 2012 TOP GREEN-IT ORGANIZATIONS

According to Computerworld's third annual Top Green-IT Organizations awards showcase the achievements at 12 IT departments that are reducing power demands and using technology to create energy efficiencies. The top 12 were chosen from a group of nearly 100 applicants, each striving to find new ways to reduce energy consumption of their IT equipment and use technology to conserve energy.

3.1 Top Green-IT Users

1. PricewaterhouseCoopers LLP
2. Citigroup Inc.
3. State Street Corp.
4. Earth Rangers
5. State of Indiana
6. Allstate Insurance Co.
7. George Washington University
8. Pacific Gas & Electric Co.
9. Union Pacific Railroad Co.
10. Baker Hughes Inc.
11. Northrop Grumman Corp.
12. Marriott International Inc.

3.2 Top Green-IT Vendors

1. Fujitsu Ltd.
2. Dell Inc.

3. NetApp Inc.
4. Verizon Wireless
5. Intel Corp.
6. Hewlett-Packard Co.
7. Qualcomm Inc.
8. Accenture PLC
9. Terremark Worldwide Inc.
10. Microsoft Corp.
11. Symantec Corp.
12. Affordable Internet Services Online Inc. (AISO)

4. DEVELOPING GREEN IT STRATEGY: THE ROADMAP

Symantec recently commissioned Applied Research to survey over 1,000 North American IT professionals about their attitudes and practices regarding green IT. The findings showed significant uptick in green IT plans, strategies and spending. Symantec grouped its statistics in five findings categories (figure 3):

1. Green IT Is Now an Essential
2. Green IT Budgets Are Rising
3. IT Is Willing to Pay a Premium for Green IT
4. IT Is at the Heart of Enterprise Green Efforts
5. Green IT Initiatives More of a Priority

Figure 3 Source: www.baselinemag.com

Central to designing and launching a successful Green IT strategy is having an accurate understanding of your current impact on the environment from your computing practices and systems. Begin by creating an inventory of all computing assets including network hardware, servers, storage devices, personal computers, laptops, external monitors, printers and scanners. The next step is to estimate your total energy consumption through reviewing past bills and supplement your findings with the estimated energy consumption data from the Department of Energy. In

addition to cataloging equipment and historic consumption data, be sure to document your company's disposal practices and the average replacement schedule of IT equipment.

Acting upon your baseline energy assessment is the next step. One of your greatest opportunities is to implement a network PC power management system. Although servers and their associated cooling needs represent 23% of all IT energy consumption, PC-related power represents a remarkable 40%. Developing standards for local measures that employees should adhere to such as shutting down machines and monitors will also save costs and green your business practices.

Extending the longevity of your assets and ensuring that they are disposed of appropriately are the next key elements of your plan. Getting more from your existing resources can be accomplished through designing measures that extend their current replacement schedule. In designing these measures, the question to ask is, "How can I better use my resources to ensure they last longer?" as well as, "Now that this equipment has served it's purpose within my department, is there any place within the organization that can make use of it's services?" When you are certain that any equipment is ready for removal, ensure that the goods are channeled through a validated equipment-recycling program or through the manufacturer's disposal program.

5. GREEN IT CHALLENGES

1. The cultural and behavioral challenge within the organization – for example, encouraging staff to play their part in helping, such as reducing print volumes and using conference calls to reduce unnecessary travel.
2. Forward planning to ensure environmental issues are considered when designing and developing new systems. If the legislation changes radically in the future, organizations may find themselves in a compliance battle.
3. Sourcing attitudes will need to change with emphasis on ensuring partners and key suppliers are demonstrating their contribution to reducing the impact on the environment. Works being contracted will have to include environmental evaluation criteria.
4. Critically, we need to get beyond the hype and see real proof of concept, costs and returns. Initiatives with little or no business cases will be hard to justify and that will affect our ability to obtain capital to invest in greener technologies.
5. Influencing hardware and infrastructure suppliers in the design and manufacture of ICT equipment such that the total environmental cost of ICT can be reduced across the whole supply chain.
6. Ensuring that procurement/purchasing departments place the environment at the top of their agendas, by ensuring tendering activities directly take the impact of ICT into consideration.
7. Establishing an environmentally-focused organizational culture for staff.
8. Changing the traditional way in which your organization does business and utilizes ICT for the benefit of the environment.

9. Obtaining priority funding and support for transformational ICT projects that will have a beneficial impact on the environment.

6. CONCLUSION

While many businesses are keen to be green, few see it as a differentiating factor. Look at it this way: Tesco, Sainsbury's and Waitrose all make claims about their lessening impact on the environment, but when did that affect your decision where to shop? So cross examining every supplier on its environmental claims may not be the best use of your time. Instead, IT teams should look at the big picture. What exactly is your business asking from you in the area of sustainability, and how will that be measured?

When it comes to reducing the carbon emissions of your department, organizational and process efficiency can be as important as the products and services you buy. What is the optimal structure of a support team, so that it makes fewer trips to satellite offices? Can more support be done remotely? Can you squeeze more from your virtual server set up? Are more of your staff able to work from home?

These are questions you may have already asked for pure business reasons. The important point is to ensure the environmental benefits resulting from these overall efficiency gains can be measured in some way which the business will recognize.

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