Green IT: Soon, Not Optional

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Compliance requirements for corporations have drastically increased with Sarbanes-Oxley, HIPAA and new Federal Rules for Civil Procedure (FRCP). And they're about to get even tougher as Congress debates new rules for capping or exchanging "carbon credits" for controlling emissions and waste. Global warming has become an acknowledged threat by both sides of the aisle—new regulations are surely on the way soon. But also, customers increasingly prefer to do business with "greener" companies.

Some vendors have jumped out ahead of the curve and moved toward a "green IT" (or green computing) approach. IBM, Microsoft and HP are leaders, and, surprisingly, Apple is lagging. According to major research firms, green IT has emerged as a leading strategic technology. By next year, Gartner predicts that more than one-third of IT buying organizations will include green IT criteria in their purchases. But just what is it, how much will it cost and how can a company get started?

Green IT is utilizing computing resources more efficiently to decrease power consumption and reduce environmental impact. But that means more than simply recycling used computers, printers and paper; it means using technologies and methods like virtualization, power optimization and even telecommuting.

The nice little surprise for managers is that practicing green IT actually translates to bottom-line benefits. Utility bills decrease, hardware costs decrease, real estate costs decrease, turnover decreases and new revenues streams can be created. Hospitals that used to pay to have old medical records disposed of are now having them shredded on site and selling the paper waste to recycling firms. Banks are doing the same thing with their voluminous printed reports.

Different approaches and best practices have varying emphases, but the path to green IT starts at the top with management direction. Senior management must:

- Create green initiatives and convey expectations clearly.
- Set measurable objectives.
- Provide clear examples of green behavior, such as printing dual-sided sheets, turning off monitors, PCs and chargers, turning off lights and taking the stairs.
- Reward employees for results.
- Reinforce the green message with announcements in podcasts, blogs, newsletters and meetings.

Various carbon footprint calculators are available to establish a baseline for measuring your organization's energy use and emissions impact. One carbon footprint calculator for

organizations can be found through The Climate Trust. It offers a free tool for business, which is an automated PDF. Others can be found at Consumer Reports' Greener Choices Web site, greenerchoices.org.

Once your team has agreed on a calculation method—and you may decide to combine several approaches—a baseline carbon footprint measurement and savings objectives can be established.

Taking steps

The data center is a central target in moving to green IT. Mashups, a Web technology that combines content from multiple sources, can reduce the need for computing resources, while attacking the application backlog. Running multiple virtual systems on one server (virtualization) by partitioning the computer and running multiple copies of the operating system is a key way to reduce power and cooling requirements. Intel and AMD have built-in virtualization capabilities in their chip sets that enhance virtualization software.

De-duplication of data can also reduce hardware and energy requirements. Although the ideal is storing live data in one place, one time (with appropriate hot/cold backups, of course), nearly every organization has pockets of replicated data that multiply inefficiencies.

A cooling technique like hot aisle/cold aisle layout, which allows hot air to flow from the back of servers to AC intake ducts and cool air to the servers' front intake, reduces energy requirements. Highmark (highmark.com), a Blue Cross Blue Shield provider, even captures rainwater from the roof, and a 100,000-gallon water tank underneath the data center helps cool the servers through evaporation.

Power management can be optimized by allowing the operating system to control it. An open standard, Advanced Configuration and Power Interface (ACPI), was released over 10 years ago jointly by HP, Intel, Microsoft, Phoenix Technologies and Toshiba. Employing ACPI, hard drives and monitors can be automatically turned off after defined periods of inactivity. Some software can even allow adjustment of the power supplied to the CPU during operation ("undervolting"), which reduces heat output and electricity consumed.

Moving to low-power PCs is another tactic to use. They are fine for everyday business desktop applications like word processing and spreadsheets. Newer display monitors use light-emitting diodes (LEDs), which reduce energy requirements, and smaller form factor disk drives are also more efficient.

Some steps your organization can take in printing include:

- Use paper that is 100 percent post-consumer waste (PCW). Better yet, paper made using renewable energy sources such as that from Mohawk Paper.
- Avoid petroleum-based inks. Today, soy- or vegetable-based inks are available.
- For professional printing of marketing collateral, annual reports and the like, employ a firm that uses renewable energy sources. Monroe Litho and Ecoprint both are 100 percent wind-powered.

In conjunction with TechSoup, Microsoft's Community Microsoft Authorized Refurbisher (MAR) Americas program allows organizations that supply at least 20 PCs a year to schools, charities or families to recycle PCs loaded with Windows 2000, XP and even Office 2003. For larger volumes, TechSoup's list of refurbishers and recyclers ensures that donated equipment gets to nonprofit organizations in working order.

According to United Nations University scientist Eric Williams, refurbishing a computer saves five to 20 times more energy than recycling over its lifetime.