



Managing IT Devices to Reduce Impacts on Building Infrastructure

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Introduction

IT devices represent one of the fastest growing and most overlooked energy loads in a typical commercial building, and they have dramatic impacts on energy consumption and electrical infrastructure. In addition to being voracious consumers of energy themselves, IT devices (such as computers, servers, printers, routers, switches and IP telephony) also generate substantial heat that forces HVAC equipment to work overtime to compensate for the additional load. Fortunately, new IT management systems offer ways to dramatically reduce wasted energy in these devices and deliver 'best in class' opportunities for benchmarking, performance monitoring, savings validation and ongoing diagnostics.

Objective

This paper was written to demonstrate that IT devices are a critical factor in the energy performance of both new and existing commercial buildings. Further, a new generation of hardware and software products are now enabling the collection of incredibly granular information about how and when IT devices are utilized and how much energy they consume. This information, when applied properly, allows building owners and managers to work with IT managers to make educated management decisions to navigate this tsunami on new energy load.

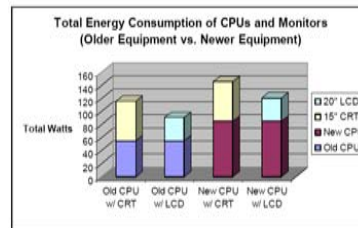
Fun (and Scary) Facts

- IT devices now account for as much CO2 emissions as the global aviation industry!!
- IT devices consume as much energy as 160 million cars every year, emitting the equivalent of 830 million tons of CO2

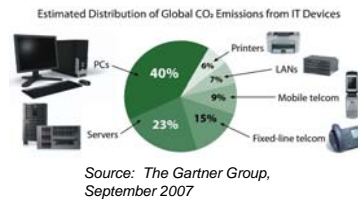


Common Myths of IT Energy Consumption

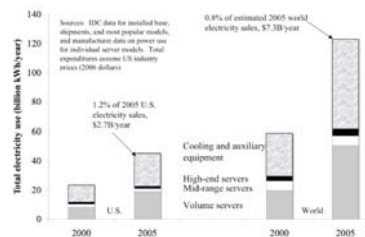
Myth #1: New Computers Are More Efficient and Therefore Always Consume Less Energy



Myth #2: Servers Are the Biggest Source of Consumption Amongst IT Devices



Myth #3: Aggregate Server Energy Consumption is Going Down



Manifestations of the Problem

- More devices in operation now than at any point in history
- Existing electrical infrastructure incapable of handling new IT loads
- Existing HVAC infrastructure often incapable of handling IT heat burden



- Lack of communication between IT and facilities staffs can cause painful, unintended consequences
- IT load, both current and future, still not factored into design and construction of new buildings
- Most organizations still do not actively manage IT power consumption in the same way they manage other building loads
 - Example: Virtually all PCs support Power Management – but only 5-10% of organizations use this capability today (Harris Interactive field study, 2/29/08 – 3/4/08)

Conclusions/Solutions

- This is a big deal...do something about it!
- Buy energy efficient products when possible! Look for labels such as Energy Star, EPEAT, 80 PLUS and others and include them in procurement specs
- Make sure facilities staff and IT staff communicate well about IT equipment needs and how they will impact building infrastructure
- Use power management software to measure and manage IT energy consumption. These savings can be immediate, huge and completely verifiable. Verdiem is a good place to start...visit www.verdiem.com.