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In this election year, everyone is worried about the economy. Experts disagree about whether the United States is headed for a recession, but the housing slump, losses on Wall Street, and the skyrocketing price of oil have both individuals and companies looking for ways to tighten their belts and trim their budgets.

Nobody likes being told to spend less, but the tough reality is that in many organizations, all departments are seeing their budgets cut -- and that includes IT. The question now is not whether to trim the budget, but how to do it in a way that's least painful for the company and its employees. In this article, we'll take a look at a few ways you may be able to save big bucks by making little (and not-so-little) changes.

1 Put off unnecessary upgrades

If your IT department is in the habit of automatically upgrading to the latest version of the operating system as soon as it comes out (or as soon as the first service pack is released, or any other arbitrary timeline), rethink that strategy. Do you really *need* the new features offered by the new OS? Will those features actually increase productivity, solve some problem with the current software, or otherwise save you money? If not, maybe you can get along just fine without upgrading for another year or so.

Remember that upgrading the operating system doesn't just require the money for those licenses, but also often requires that you spend more money to upgrade the hardware to support the new OS. And there are indirect costs, such as the administrative overhead involved in the upgrade and end-user training.

The same thing goes for productivity applications, such as Office. Will you benefit from the new features or have you been just automatically upgrading every time a new version comes along? Many companies save money by upgrading only with every other new release. Of course, there may be good reasons to upgrade, but do a cost-benefits assessment first and be sure those reasons are sound.

2 Don't buy top of the line

Like it or not, hardware does eventually fail or become obsolete. When it comes time to purchase new computers -- whether servers or desktop machines -- you can save a lot of money by *not* buying the top-of-the-line product. When you buy the fastest processor on the market, for example, you pay a big premium. The processor that's one step down may be considerably less. And one thing you can count on in the IT industry is that the top-of-the-line model won't stay in that lofty position for long. In a few months, a new, faster model will come out and the price of that expensive piece of equipment will drop like a rock.

Of course, you don't want to go cheap by buying the oldest, slowest systems available, either. The best value usually comes one or two steps below the top-of-the-line model. For example, at the time of this writing, a Dell Optiplex 755 with a 2.40 GHz Core 2 quad processor costs \$320 less than the same model with a 2.66 GHz Core 2 quad, yet the difference in performance will hardly be noticeable. And when you start buying dozens or hundreds of workstations for a business, that \$320 difference can add up fast.

3 Consolidate servers

Server virtualization is all the rage now, and there's a good reason: Consolidating multiple physical servers on one (or fewer) machines, using virtualization technologies such as [Microsoft Virtual Server](#), [VMWare ESX Server](#), or (coming soon) [Windows Server 2008's Hyper-V](#), can save money on hardware costs, power and cooling costs, and administrative workload.

Dedicated servers are often underutilized, but combining server applications/roles on the same computer can become an administrative and security nightmare. With virtualization, each server role functions in a separate logical (virtual) machine that appears on the network with its own name, IP address, etc., but multiple logical machines run on the same hardware.

Server consolidation also cuts down on the amount of server room space you need, allowing you to save money on valuable office real estate.

4 Virtualize applications

Server consolidation isn't the only use of virtualization technology in today's cost-conscious IT environment. Application virtualization using technologies such as Microsoft's [SoftGrid](#) can save you money by reducing the administrative costs of installing, maintaining, and troubleshooting application software. Because the virtualized application is installed on the server instead of the clients, admins don't have to deal with multiple installations of a program on different machines.

Application virtualization can also provide a way to protect the OS and other applications from software with bugs or glitches, reducing or eliminating expensive downtime. And because it uses fewer resources than separate virtual machines, less expensive hardware can be used.

5 Use thin clients

Thin client computing is another way to cut hardware costs and allows you to provide users with a modern desktop while utilizing older or low-powered client machines. [Windows Terminal Services in Windows Server 2003](#) and the soon-to-be released [Windows Server 2008](#) can be deployed to allow users to access the full Windows desktop or selected applications on the terminal server over the LAN or Internet.

As with application virtualization, administration, maintenance, and troubleshooting of applications is centralized, saving administrative overhead. Programs can be deployed and updated more quickly, and less network bandwidth is used to access remote applications. There are many approaches to thin client computing, including new "zero client" technology such as that offered by [Pano Logic](#).

6 Consider selective deployment of open source software

Open source software is often available free of charge, but may also come without warranties, formal training programs, or technical support. Updates may or may not occur. Some organizations have deployed open source operating systems and applications, only to return to commercial software due to these problems. Another disadvantage of some open source products for business use is lack of integration/interoperability with commercial software that may be in use by other departments, partners, customers, etc. Traditionally, open source programs have tended to require more technical expertise on the part of the users, although some open source software has become more user-friendly.

All that said, open source may have a place in your organization if deployed carefully and selectively. Open source (Linux/UNIX-based) server software may be appropriate for certain dedicated servers if you have IT personnel who have knowledge and expertise in the OS. Open source operating systems on the desktop may work fine for more technically savvy users. Open source applications such as Open Office that offer compatibility with the file formats of commercial applications might be the right choice for some users, especially those who only need to create documents occasionally and don't need the advanced features of commercial programs such as Word.

A careful assessment of where open source software can and can't be deployed in your organization without undue disruption and a steep learning curve can help you integrate it into your network in a way that saves money.

7 Have fewer, smarter meetings

Meetings eat up a lot of time that could be better spent on more productive work. This is true across all organizations, and the IT department is usually no exception. You can cut down on meeting wastage by careful planning, having a set agenda and staying on-topic, and requiring only those who really need to be there to attend.

In many cases, the purpose of a meeting can be accomplished much more efficiently via e-mail or a telephone conference. Meetings at remote locations cost even more in travel time and expenses. If face-to-face communication is essential, you can use videoconferencing to save both time and money.

8 Look at new training options

Training is often one of the first items to suffer when budgets have to be cut, but arbitrarily slashing all training dollars can end up costing the company more in the long run. It's necessary for IT personnel to keep current on the technologies they deploy and administer; mistakes can result in expensive downtime or even loss of critical data.

When cutting training allocations, it's important to have a plan for personnel to continue to maintain and update their knowledge and skills. There are a number of ways to save money on training. Instead of attending expensive offsite conferences that involve travel and per diem costs, you may be able to set up onsite training or utilize computer-based training and self-study programs to accomplish the same thing.

Encourage IT personnel to keep learning. If the company can no longer afford to pay all the expenses for employees to obtain industry certifications, for example, you may still be able to cover part of the expenses (such as the exam fee) and/or offer incentives -- monetary and otherwise -- to employees who complete the training on their own time.

9 Replace dedicated WAN links with site-to-site VPN

If your business has multiple physical locations and you have dedicated leased lines connecting them, it might be time to think about ditching the expensive dedicated links and replacing them with site-to-site VPN connections instead. Midsize and large businesses may be able to save thousands of dollars on monthly fees by doing this.

Likewise, small businesses that are currently paying hundreds of dollars per month for a T-1 line should look into new Internet service options. In some areas, you can get a business FiOS line (with static multiple IP addresses) for less than half the cost of your T-1, and it provides up to 10 times the downstream bandwidth and twice the upstream.

10 Outsource some services

Outsourcing is a sensitive subject. Many people, hearing the word, think only of personnel cuts and jobs going to foreign shores. But judicious outsourcing can allow you to better utilize the personnel you have and to more efficiently and cost-effectively run your IT operation, without entrusting your data to people half a world away.

For example, as your business grows and your need for more servers expands, you might find that it's less expensive and less hassle to use a hosting service for your Web servers or e-mail, rather than buying more hardware and hiring more personnel. As with other money-saving measures, this is not a one-size-fits-all solution, and you should first assess your specific needs, compare prices, and do a cost/benefits analysis to determine whether outsourcing really is the most cost effective option in both the short and long run.

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