Best practices for PC fleet management not only improve the agility, security and productivity of the installed base, but can also reduce total cost of ownership by as much as 30%. As you optimize tools and processes, it is important to pay attention to the full PC lifecycle, so every investment delivers maximum value.
Executive Summary

In the current economic climate, most businesses are working to bring down total cost of ownership for their IT infrastructure. To the extent that these cost reductions are performed strategically, they can improve IT efficiency, reduce exposure to security risk, and deliver lasting value to the business. Nowhere is this more true than in the area of PC acquisitions and fleet management.

According to Gartner, a well-managed PC environment can reduce TCO by about 30% for a typical enterprise. Moreover, there is virtually no downside to this 30% savings. It is not a byproduct of delayed acquisitions or reduced end-user support. It is simply an optimization of tools and processes that delivers better value through consistent hardware and software refreshes, regular software patching and more efficient fault management. In general, end-users enjoy more powerful and reliable systems, faster problem resolution and fewer disruptions. Total costs are reduced, and the enterprise realizes fundamental improvements in the performance, agility and security of its PC infrastructure.

Of course, there are costs associated with moving toward optimized fleet management. Existing processes must be measured against industry best practices to identify the best opportunities for efficiency gains. New tools and processes may be required, along with better cooperation and planning among business and IT decision makers. As plans are made, it is essential to focus on the complete PC lifecycle, to avoid patchwork improvements that fail to deliver bottom-line value to the enterprise. It is also important to think strategically, so that investments not only reduce TCO, but move the enterprise toward a more agile PC infrastructure that can support emerging business needs.

This paper offers solid guidelines for optimizing tools and processes for every stage in the PC lifecycle, including Assessment, Deployment/Migration, Management and Retirement. It describes key characteristics to look for in the new generation of PC lifecycle management tools, and recommends specific strategies and best practices for reducing TCO and increasing the business value of your PC infrastructure. It also provides a variety of real-world case studies that illustrate the proven value of efficient PC fleet management.

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1 Linux Desktop TCO: An Overview (COM-19-8811), Gartner, Inc. June 19, 2003. Note: This paper compares TCO in a Linux* operating environment with TCO in a Windows* operating environment, and provides metrics for comparing the benefits of a well-managed environment for both.
Launching an Effective Assault on TCO

Purchase price accounts for only 20 to 30 percent of the total cost of owning a PC or notebook. This is why simply delaying PC acquisitions rarely has the desired effect of reducing TCO. Support costs rise substantially for older systems, driving up the operational expenses that account for most of the other 70 to 80 percent of total costs.

A more successful strategy is to focus on reducing costs for all phases of the PC lifecycle, to be sure that savings at one point do not have a negative impact on others (Figure 1). In general, this is not difficult, since true efficiency improvements tend to ripple throughout the environment, improving quality and control at all points.

However, proper communication and integration between various organizations and support teams is important. For example, an accounting team might choose an asset management solution based solely on how well it can be used to track and analyze hardware and software configurations, user profiles, service warranties, depreciation, etc. Yet the value of the application will increase substantially if it can also be leveraged efficiently by software distribution and help desk support teams, so they have quick access to detailed system information.

Because of the advantages of integration, analysts at Giga Information Group (a wholly owned subsidiary of Forrester Research, Inc.) now recommend that firms “move to a single management tool for core functions.” They say that “Consolidating client management tools and integrating support processes will reduce training costs, infrastructure requirements and overall support costs by 30 percent or more, and ultimately increase customer (or end user) satisfaction.”

Large enterprises may still benefit from using some best-of-breed tools for specific functions, such as deployment, software migration, patch management, etc.—and may be able to justify the cost of integrating diverse products in-house. However, the value of specific features and functionality should be carefully weighed against the benefits of integrated, off-the-shelf solutions.

Centralization and Standardization

“Strict implementation/enforcement of standards has proven to be a powerful tool for IT organizations in their efforts to reduce end-user operational costs.”

The Consistent PC—Steve Kleynhans, META Group, August 8, 2003

Purchasing and managing thousands (or tens of thousands) of desktop and mobile PCs offers enormous potential for reducing costs through centralized IT control and a standardized environment. Yet many businesses have moved away from a highly centralized IT organization to provide individual business units with greater flexibility. According to a report in the McKinsey Quarterly, the result has been “a more decentralized, customized approach, which increases not only flexibility but also inefficiency and conflict.”

According to that same report, a far better strategy is to empower centralized IT organizations to offer a standard set of products and services, which are chosen and paid for by individual business units. This balanced approach supports a high degree of centralized IT control, without the inflexibility that can alienate business decision makers.

A centralized IT organization makes it easier to consolidate and standardize the PC infrastructure and corresponding support systems. This is absolutely essential for effective cost reduction. As one example, Giga Information Group reports that “the benefit of standardizing on four to six application configurations represents a 15 percent to 25 percent reduction in IT costs during the system lifecycle (an average of $1,600 per system).” Standardization also improves end-user productivity through more reliable operation, better support and faster problem resolution.

The benefits of standardization extend beyond IT cost savings and improved end-user productivity. With a highly standardized PC infrastructure, it is far easier to deploy security updates, such as software patches and virus signatures. It is also easier to monitor and enforce PC configurations, to be sure that security functions such as anti-virus scanning, personal firewalls and encryption are up-to-date, active and properly configured. With today’s security concerns, these processes are essential components of an effective enterprise risk management strategy.

Standardization of the PC infrastructure also lays the foundation for efficient fleet management. With a consistent environment, many manual processes can be replaced or augmented with automated tools that stretch the IT budget.

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Efficient fleet management begins with a thorough assessment of the deployed base. For IT organizations that have not yet deployed network-based management tools, outsourced assessment services are now available that can provide a detailed snapshot of a networked fleet of PCs and enable sophisticated evaluation of the resulting data. This can provide valuable information for fleet management decisions and implementations. It can also provide critical information for assessing the advantages of deploying an in-house asset management solution.

Today’s leading asset management tools track detailed information regarding configurations, software usage and performance metrics; and can integrate this information with user profiles, physical locations, warranties and financial information such as contracts and depreciation. Many solutions also support asset management for non-computing equipment (manufacturing, office equipment, etc.).

Though most analysts still recommend a yearly physical inventory to corroborate information, automated asset management tools can improve data and eliminate an enormous amount of IT legwork, especially in distributed environments. Businesses can often realize immediate value by bringing software licensing costs in line with actual usage and making better use of warranties and service contracts.

Capabilities vary widely, so evaluate tools and vendors closely with respect to your current requirements and future plans. Take into account that how you use the information is as

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**Total Lifecycle Management**

The total cost and value of a PC depend on every phase of its lifecycle, as well as on the business and IT environments in which it exists. It is therefore essential to look at the whole picture when making fleet decisions, and to encourage input from all key organizations that either support or depend on the PC infrastructure. This paper discusses the four key phases of the PC lifecycle: Assessment, Deployment/Migration, Management and Retirement.

**Assessment**

*The inability to analyze the physical makeup of the installed base or to map the flow of hardware through the organization will result in significantly higher lifecycle costs.*

Gaining Efficiencies With PC Lifecycle Management—M. Margevicius, L. Mieritz, Gartner Research Note (TG-14-5059), October 30, 2001

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Capabilities vary widely, so evaluate tools and vendors closely with respect to your current requirements and future plans. Take into account that how you use the information is as
important as the information itself. Consider the following capabilities in evaluating new tools:

- Ability to track diverse assets, including wireless notebooks, personal digital assistants (PDAs) and other occasionally connected mobile devices.
- Integration with enterprise directories, for more efficient management based on business roles and user profiles.
- The ability to drill down quickly to detailed information.
- Integration with other processes and applications, such as software distribution and help desk support teams.
- Flexible tools for analyzing and presenting data to improve planning and operational efficiency across multiple processes (procurement, deployment, software distribution, etc.).

**Deployment (and Migration)**

"...having an effective and efficient build and image process should pay off several times over."

*PC Migrations: How to Tackle Build and Image Projects, IDC Executive Brief, July 2003*

A traditional client build (the loading of software and configuration settings onto a new PC) can take several hours, and requires a technician to be present and active. Automated, image-based tools can reduce total time to about one hour, with only about 5 minutes of active participation by the technician. In conjunction with network-based software distribution, this process also enables centralized teams to configure remote PCs. When deploying hundreds or thousands of systems, the savings can be substantial, delivering a quick payback on investments in new tools. Equally important, automated configuration greatly reduces the risk of human error, and establishes more standardized and reliable configurations for all new systems.

In principle, the process is relatively straightforward. The operating system and core business applications are loaded and configured onto a reference system. A snapshot is then taken, providing an image that can then be loaded, or "cloned," onto any number of PCs. Separate application packages can also be created, and overlaid onto systems after the base image has been installed. (Another method is to create a master image that includes all applications, and then remove unused components to finalize the configuration.)

Of course, every PC requires certain customizations for security and network identification. User data files and configurations should also be transferred onto new systems to minimize disruptions and support issues. This information transfer can be automated as well, storing existing files and information on a network storage device, and reloading them on top of the new image. These image-based deployment tools are equally useful for OS migrations, which can typically be performed over the network for desktop PCs and remote systems. Leading solutions also provide image restoration tools that can dramatically accelerate problem resolution for many help desk issues.

Consider the following capabilities in evaluating new tools for automated and remote deployment and migration:

- **Remote boot capabilities**—The ability to boot up remote systems over the network reduces the need for desk-side visits. It also enables less experienced technicians to perform physical setup, while reserving higher level personnel for managing image placement and system configuration from a centralized location.
- **Bandwidth optimization strategies**—Efficient tools are essential for deploying or restoring images on remote systems when network bandwidth is limited. Look for tools that allow software image segmentation, multicasting and seamless stopping and restarting of image deployment processes. Also look for flexible scheduling options that enable automated image deployment for multiple systems during non-business hours.
- **Support for wireless handheld devices**—The ability to deploy and manage notebooks and other handheld devices using consistent tools and processes will be increasingly important for maintaining a consistent, standardized and reliable environment for all connected computing systems.

Recommendations for using automated, image-based tools:

- Standardize on a small number of platform configurations and software images. This dramatically simplifies deployment and OS migration. It also simplifies upgrades and help desk support.
- During major deployments and migrations, schedule image uploads for non-peak network hours.
- Work with your PC vendor or a third-party specialist to evaluate the benefits of outsourcing some or all of your initial image installation.
- Take advantage of stable platforms that are designed specifically for enterprise customers, to reduce churn in your standard software images (see the sidebar, *The Intel® Stable Image Platform Program)*.

**Management**

The two key components of PC management are software distribution and problem resolution. Today's automated tools deliver enormous benefits for both processes.

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7 Certain user- and network-specific configuration details must be removed from this system to prepare it for cloning. In a Microsoft Windows environment, most tools and vendors rely on the Windows System Preparation utility (SysPrep) for this purpose. SysPrep also configures the operating system to present a mini-setup routine the first time the system boots up—a very short routine for gathering only essential end-user information.
Software Distribution

“Centralized, network-based software distribution is a central pillar of efficient fleet management, enabling software updates that might otherwise take weeks or months to be performed in a matter of hours. IT staff can keep pace with necessary software updates, and maintain and enforce their standard software images. They can also deploy new applications more quickly, to improve end-user productivity and take advantage of new business opportunities. Of course, careful planning, engineering and testing are essential when a single upgrade may affect thousands of systems.

Automated asset management adds substantially to the value of network-based software distribution tools. System readiness can be determined remotely, so IT can identify and locate PCs that require attention prior to the software rollout. With today’s increasing security requirements, automated patch distribution should be a core component of any software distribution strategy. Security analysts estimate that over 90 percent of digital attacks target known OS and application vulnerabilities, and businesses that fail to deploy available security patches and virus updates are increasingly exposing themselves to untenable financial and legal risk. Automated patch distribution should be supported by tools and processes for monitoring emerging security risks, and for planning, prioritizing and coordinating appropriate responses.

An effective security framework should also include an independent, automated process for auditing PC security configurations, to ensure that patches, virus signatures and firewall updates have been installed properly, and that end users have not downloaded vulnerable software, turned off security applications or otherwise compromised platform security.

When evaluating tools and processes for software distribution, look for solutions that:

- Support policy-based, after-hours distribution and a high level of automation.
- Deliver at least a 95% success rate for software updates and installs.

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8 One solution is to use an agent-based packaged solution for patch distribution, and an OS-based monitoring solution to monitor and verify patch installation and security configurations. For example, Microsoft Windows 2000 and all later versions of the Windows OS support WMI (Windows Management Instrumentation), which can be used for remote configuration monitoring. Other operating systems include comparable technologies.

Address the bandwidth constraints and intermittent connectivity of notebooks and handheld devices.

Integrate with help desk and inventory tools and processes.

Problem Resolution

“Asset management with full auto-discover and remote control...can reduce resolution time on desktop problems by as much as 30 percent to 40 percent.”

The Total Economic Impact™ of Integrated IT Asset Management and Help Desk—Robert McNeill and John Ragsdale, Giga Information Group, Inc., August 6, 2002

Failed PCs drain IT resources and disrupt end-user productivity. When properly implemented, virtually all of the tools discussed so far can be leveraged to reduce problem rates and speed resolution, especially when combined with specialized help desk applications and tools that enable technicians to control systems over the network. In addition to tracking and escalating trouble tickets, help desk applications should support detailed analysis to identify and resolve support issues.

When evaluating applications that address problem resolution, look for tools that enable:

- Efficient integration of help desk, remote control, asset management and software distribution, so technicians have full system information at their fingertips and can quickly re-image systems and restore data and configurations as needed.
- Strong security to protect against unauthorized remote control of systems.
- Self-healing technologies that replace faulty or missing software components without IT intervention.
- Automatic backups to network servers.

Retirement

“A retirement and disposal strategy should be an explicit part of the lifecycle management and should specify retirement and refresh rates according to user segmentation...or application requirements.”

Gaining Efficiencies With PC Lifecycle Management—M. Margevicius, L. Mieritz, Gartner Research, October 30, 2001

Support costs and security risks increase for aging PCs, while end-user productivity decreases. Long lifecycles also increase the variability in the installed base, which undercut the essential advantages of a simplified and standardized environment. Explicit lifecycle durations should therefore be established for all configurations.

Consistent and predictable lifecycles also help IT plan for the procurement and deployment of new systems. Centralization and standardization add to these benefits, enabling IT to consolidate purchases and increase bargaining power. By actively decommissioning old systems, and integrating this process with procurement planning, IT takes control of both ends of the PC lifecycle. The result is a PC infrastructure that...
Fleet Management in Action
CNF and Microsoft Systems Management Server* (SMS)

- US $4.9 billion management company
- Leading supplier of global supply chain services
- A fleet of more than 2,000 PCs

Until recently, CNF was less successful in managing their PC fleet than in managing complex, global supply chains for their customers. They knew they had several thousand PCs, but the actual number was anyone’s guess. “We realized that we’d lost a handle on what we’d purchased and what status it was in. After serious infections from Nimda and Code Red, we realized that we had to find a way to get control over our environment and keep our patches up to date,” said Roger Wilding, Senior Technical Engineer at CNF.

To address this challenge, CNF deployed SMS on four servers to manage more than 2,000 PCs distributed throughout the United States. They now have detailed reports for all their networked PCs, enabling them to manage hardware, software and budgets far more effectively. Using just three people and Microsoft’s Software Update Services Feature Pack, they can deploy security patches on 1,300 systems in just two hours. “We went from not managing security patches to managing them—and very effectively,” says Wilding.

CNF is also using SMS to monitor their systems, keep software current and plan their transitions more effectively. With solid fleet data, they have been able to justify upgrades for over 100 out-of-date systems that were either security risks or lacked the power to run new line-of-business applications. New deployments and migrations are also simpler and less expensive. Wilding estimates that SMS helped them cut deployment costs by over 90% for a recent migration of 221 desktops to Office XP, and expects similar savings when that migration is extended to the rest of CNF’s PC fleet.

Adapted from: CNF—Reducing Cost and Improving Manageability and Security of 2,000+ PCs, March 17, 2003, available on the Microsoft Web site, at: www.microsoft.com/resources/casestudies/CaseStudy.asp?CaseStudyID=13580

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Figure 2. Typical costs for decommissioning a business PC.
Consider outsourcing the process to an experienced vendor in order to reduce costs, increase security and ensure that systems are properly resold, donated or disposed of.

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Source: Aberdeen Group

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Fleet Management in Action
Navigant International, Inc. and Altiris Client Management Suite*

- Second largest travel-management/business-service provider in North America
- U.S. $4 billion in annual gross airline ticket sales
- A global fleet of 4,300 PCs

With 4,300 associates and global operations in more than 1,300 locations, the IT organization for Navigant International faced a particularly difficult challenge in managing its PC fleet. According to Mitch Fillmore, Navigant director of central IT operations, “Travel costs alone ran into six figures each year. We also spent a lot of time trying to keep track of our hardware and software, but with our worldwide systems it was more art than science. We needed to reduce overhead, provide more support with fewer people, and find a way to more closely manage our IT asset inventory and software licenses.”

Navigant found a solution with Altiris Client Management Suite*. Now centralized IT staff can deploy, configure, troubleshoot, support and monitor any PC on the global network from a Web-based console. Navigant has used Altiris to establish and enforce a standard PC image, so service technicians no longer face unfamiliar configurations. Moreover, they can now re-image 50 machines at a time over the network for fast deployment of new applications and updates, and to reinstall failed software. “Instead of waiting five hours to get back to work, a user can be back online in a matter of minutes,” says Fillmore.

With these new tools, IT travel time has been reduced by 80 percent, and support teams are far more efficient. Fillmore estimates they would have needed an additional 5 to 7 people to handle increasing loads without the new tools. The inventory and application metering solutions in Client Management Suite have also delivered solid value. According to Fillmore, “In six to nine months after being deployed, Altiris pays for itself. After that, it’s money in the bank.”


Keep it Standard

“The new systems should meet, at a minimum, Intel’s Wired for Management (WfM) specification and Desktop Management Interface (DMI).”

Desktop PCs: Technology Overview—Federica Troni, Gartner Inc., April 25, 2003

The foundation for automated and remote management was laid several years ago, when Intel began working with other industry leaders and standards organizations to define and integrate standard technologies for PC platform manageability. Standards adherence is now widespread in platforms intended for enterprise customers, but should still not be taken for granted. A deployed base of systems that adhere to key standards helps to keep your options open as management tools evolve. Consider each of the following standards:

- **DMI (Desktop Management Interface)** — Provides a standard framework for managing and tracking components in PCs and servers.
- **WfM (Wired for Management)** — Pioneered by Intel, WfM includes essential technologies that enable network-based management from a central location. Key features include built-in instrumentation; Wake on LAN for powering up sleeping PCs; PXE (Preboot Execution Environment) for booting up a computer when the OS is unavailable or not yet deployed on the system; and power management capabilities (Advanced Configuration and Power Interface—ACPI).

Understanding PC ROI

IT organizations should work closely with their financial counterparts to assess TCO for existing PCs and to understand the return on investment for new PC purchases and OS migrations. Many PC vendors and management outsourcers offer specialized tools and expertise that can assist in this process. Intel offers an online tool—PC ROI Analyst—that provides a customized analysis based on specific business and IT variables. Like other ROI tools, it weighs intangible benefits and risks alongside traditional ROI metrics that take into account the affects of workforce mobility, client security and heightened client-side availability and uptime.

These kinds of tools can provide a useful framework for understanding specific deployment and migration scenarios, optimizing PC lifecycles, and creating a business case for project justification. The best tools offer a high level of transparency and customization, so underlying technical, business and financial assumptions are clear, and key parameters can be altered to address specific requirements.

The Intel ROI Analyst tool was jointly developed by Intel and Alinean, a leader in the field of return on investment (ROI), and is now available for download on the Intel Web site. For more information, visit the Intel Web site at: www.intel.com/ebusiness/upgrade/roi.htm.
- **CIM (Common Information Model)** — A data model for describing overall management information in a network/enterprise environment.

- **WEBEM (Web-based Enterprise Management)** — A set of management and Internet standard technologies developed to unify the management of enterprise computing environments.

- **Other PC Standards** — Standards are continuously evolving for new and emerging technologies. At this time, support for IEEE 802.X wireless standards (Wi-Fi) is particularly important for all new notebook purchases. Enterprise customers should look for wireless products that support fully-ratified 802.X standards and have been validated by the Wi-Fi Alliance. Be wary of PCs and related components that are based on pre-ratified standards. They may be suitable for consumers and small businesses, but are risky for wide-scale enterprise deployment.

**Think Strategically**

“...enterprises with less than 35 percent of the workforce using notebooks may not be receiving full capacity from their workers.”


TCO is an important metric, and should be a constant consideration for every PC fleet manager. Yet to concentrate solely on cost can lead to serious miscalculations. IT decision makers must also focus on the total value received for their investments, including immediate productivity and security benefits, as well as the ability to support emerging technologies and business models with their existing PCs (Figure 3).

Perhaps the most important issue today is the convergence of wireless mobility, high-performance notebooks and sophisticated handheld devices. In effect, a mobile and wireless infrastructure can increase the availability of core business applications and improve user-to-user communications throughout the extended value chain. The growing sophistication of leading enterprise applications adds to the value of these technologies. Businesses can increasingly provide targeted information to each end-user when, where and how they need it, and automatically synchronize data whenever a device is connected to the network. The result is better information flow and increased responsiveness to business events and customer needs.

IT decision-makers should evaluate these and other advances as they make PC lifecycle decisions. They should also look closely at evolving IT financing and service models. PC leasing and management outsourcing, for example, can add substantial value and reduce costs for many businesses.\(^{11}\) Both strategies can help to improve cash flow and enhance the consistency, agility and manageability of the PC

![Figure 3. The Importance of Strategic Thinking.](image)

IBM Global Financing claims that leasing can save an additional 6% to 15% in TCO.
environment. Accounting models are also changing. New methods, such as activity-based costing and resource-based consumption accounting, deliver better financial insight into dynamic business processes. Such tools can improve strategic planning, and enable businesses to coordinate IT investments with business process changes that drive more value into the enterprise.

IT organizations must work with their business and financial counterparts to track these changes, and to understand the potential impact on their business. By looking strategically at the costs, value, and strategic potential of PC infrastructure investments, businesses can more effectively balance productivity, agility, stability and TCO to deliver maximum value over the life of each PC.

**Best Practice Recommendations**

1. Limit the number of hardware configurations and software images in your environment.
   - Take advantage of the Intel Stable Image Platform Program to deploy more stable configurations that help to reduce costly churn in the software images used to support the PC fleet (see the sidebar, *The Intel® Stable Image Platform Program*).

2. Take advantage of today’s new generation of automated management tools and services, but be aware that technology alone is not a solution. People and processes are equally important in turning IT assets into strategic advantages.
   - Move toward centralization, standardization and automation for all key processes, including asset management, deployment and migration, configuration management and fault management.
   - Optimize relationships between business units and IT, and work to improve communication among all those who support or depend on the PC infrastructure.
   - Consider outsourcing PC fleet management to an experienced vendor. High quality consultants have optimized tools and methods that can often deliver better results at lower costs (see the sidebar, *Outsourcing PC Management*).

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**Outsourcing PC Management**

Many enterprise IT organizations outsource PC lifecycle management so they can focus on developing and optimizing core business applications. A high quality vendor brings a level of expertise to PC management that few internal IT organizations can match. However, even the most qualified outsourcer cannot instantly transform a chaotic PC environment. It may take considerable collaboration to fully understand business needs, develop appropriate hardware and software standards and begin moving toward a more manageable environment.

Siemens Business Services, Inc. is one example of a high quality vendor that combines mature best practices with a best-of-breed toolset for automated lifecycle support. Siemens Business Services (SBS) has migrated over one million PCs for enterprise customers in the U.S. alone, and has used this experience to continually refine its migration and management processes. Experience has shown that its automated Low Touch Migration* (LTM) methodology can reduce per desk migration costs by about 50% compared to a legacy (non-automated) approach. It can also lead toward a PC environment that is easier to manage and secure.

Siemens Business Services is quick to point out that no two migrations are alike. Transition readiness varies greatly between customers, and optimized tools must be combined with flexibility and sensitivity to specific business and technology requirements. For example, Siemens Business Services recently assisted Genzyme Corporation—a leader in the medical technology field—in migrating 2,300 diverse PCs onto a standardized core image. The PC requirements for individual users and business units varied widely for this high tech company, and certain infrastructure issues precluded the use of multicasting to install images efficiently over the network.

SBS collaborated closely with Genzyme’s IT organization to define standard application suites, determine the best operating system (Microsoft Windows® 2000 in this particular case), and develop an efficient distribution method using a mobile server cart. They also helped Genzyme establish formal application testing, which has since become a core element of the company’s PC management environment. Such expertise can be valuable in a complex migration, especially when combined with the flexibility to address the critical application and scheduling issues of individual business units. According to Denyse Densmore, Director of IT Client Services at Genzyme, “It was a living—not stagnant—project plan and the team constantly reassessed and revamped to keep us on the right track. We’re already using what we’ve learned through this project to save us time and effort in other areas.”

3. Actively monitor and manage all enterprise platforms to:
   - Improve enterprise security through efficient patch management, antivirus updates and configuration monitoring.
   - Reduce the number and complexity of support issues.

4. Optimize your PC refresh cycle. Intel's online PC ROI Analyst (see the sidebar, Understanding PC ROI), and similar tools from other sources, can provide a detailed financial look at the costs and benefits of PC upgrades in your environment. Work with your financial specialists to understand the relative benefits of leasing versus purchasing for new acquisitions.

5. Balance TCO considerations against productivity, security and agility when making key lifecycle decisions. Both tactical and strategic thinking are necessary to optimize the total value of the PC infrastructure.

For a more extensive list of IT best practices for PC fleet management, visit the Intel Web site at: www.intel.com/ebusiness/upgrade/reducen costs.htm

Conclusion

With automated management tools and best practices, most businesses can expect to reduce TCO for their PC fleet by as much as 30%, while improving security, agility and productivity. When optimizing tools and processes, be sure to consider the impact on the full PC lifecycle, and look for integrated support across multiple functions (e.g., an asset management application that can be leveraged by software distribution and help desk support teams). Plan PC lifecycles to balance cost, security and productivity requirements, and look for vendors and PC models that specifically target enterprise needs for standardization, stability and manageability.

Above all, think strategically when planning and upgrading your management processes and PC infrastructure. PCs are ubiquitous because they dramatically improve business efficiency by simplifying the creation, management and distribution of enterprise information. Keep track of key innovations—such as wireless mobility—that extend these core advantages. Work with business units to understand end-user needs, and to provide better access to accurate, real-time information when and where it is needed most. With careful planning and efficient fleet management, you can integrate these advances smoothly into your PC infrastructure, keep your total costs down, and deliver maximum value to your business.

More Information

The following vendors offer products and/or services for improving the efficiency of PC management.

- Altiris: www.altiris.com
- CA: www3.ca.com/Solutions/SubSolution.asp?ID=4569
- CSC: www.csc.com/solutions/itinfrastructureoutsourcing
- Dell: www1.us.dell.com/content/topics/global.aspx/solutions/en/openmanage?c=us&l=en&s=corp&a-tab=2
- EDS: www.eds.com/services_offerings/solution/solutionnews/soDesktop/index.shtml
- LANDesk: www.landesk.com
- Microsoft: www.microsoft.com/smserver
- Miramar Systems: www.miramar.com
- Novell: www.novell.com/products/zenworks
- PowerQuest: www.powerquest.com
- Siemens Business Services: www.sbs-usa.siemens.com/portfolio/ITInfraCons_LTMigrationServices.asp
- Symantec: http://enterprisesecurity.symantec.com/products/products.cfm?productid=3&EID=0
- Unisys: www.unisys.com/services/network_services/infrastructure_deployment/desktop.htm