



## PC BEST PRACTICES CASE STUDY

## 78 Percent Savings: Best Practices Give Healthcare Leader a Prescription for Lower IT Labor Costs

New PCs help save \$69 million over three years; with management and OS upgrade savings, the systems nearly pay for themselves

### Diagnosis:

#### A Headache Caused by Aging PCs and Decentralized Management

One of the world's leading nonprofit health maintenance organizations<sup>1</sup> (HMOs) offers an integrated health delivery service that provides or coordinates its members' care, including hospital, medical and pharmacy services, as well as preventive care. Information technology is crucial to the HMO's success, and the organization was an early adopter of solutions that helped it achieve economies of scale in healthcare delivery while providing the personalized, efficient care that's key to retaining healthy subscribers. But being a pioneer sometimes brings its own headaches. After years of developing and supporting a custom electronic medical records solution, the HMO was ready to deploy a third-party application that would eliminate its ongoing development and maintenance costs, improve the productivity of thousands of clinical care providers, and ultimately enhance patient care.

In planning the move to the third-party application, however, the HMO realized its aging base of 100,000 PCs and 10,000 notebooks, many of them running Microsoft\* Windows\* NT, lacked the performance and reliability to support such state-of-the-art, mission-critical applications. In addition to limiting business flexibility, the old systems were costly to manage. Running an aging operating system also heightened the company's exposure to security risks—a serious problem when patient confidentiality is at stake.

### Treatment Plan:

#### Manage the PC Environment, Achieve Dramatic Savings

The healthcare provider developed a treatment plan for its ailing PC infrastructure—a three-year managed workstation initiative (MWI) that would deploy a consistent set of tools across the organization's PCs and notebooks for:

- Asset management
- Automated software distribution
- Remote control

The provider was counting on the management initiative to streamline IT productivity, enhance the quality of IT services, reduce the cost of managing the PC environment, and make way for the new electronic medical records application. But before moving forward with the MWI, the HMO asked consultants from Intel® Solution Services and Microsoft Consulting Services to identify the initiative's likely cost savings. The resulting benefits analysis showed that, based on industry studies, the MWI could reduce the company's PC labor support costs by 56 percent over three years. The analysis also showed that upgrading to the Microsoft\* Windows\* XP operating system would deliver an additional 51 percent labor cost reduction, for total savings of 78 percent.

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<sup>1</sup>Customer wishes to remain anonymous.

The HMO's PC infrastructure was typical of companies that fail to manage their systems according to best practices. Rather than proactively replacing PCs on a three-year cycle and notebooks on a two-year cycle, the healthcare leader followed a "crash and burn" approach. As a result, the PC environment was extremely diverse, with aging systems, dozens of different hardware configurations, and more than 30 images.

Adding to the complexity, the company provided services across several states, had a highly distributed IT organization, and had not standardized its management tools and procedures. The environment's diversity made it difficult to utilize remote management tools, so security patches and other code enhancements were applied inconsistently or not at all. Asset management data was lacking, and the rate of help desk calls was high. The lack of standardized tools and platforms made problems more difficult to identify and resolve than they would have been in a more managed environment.

Not surprisingly, total cost of ownership (TCO) was high, and help desk and support costs were rising. End-user satisfaction was below average, and support technicians were frustrated at spending so much time on repetitive tasks and reactive problem solving.

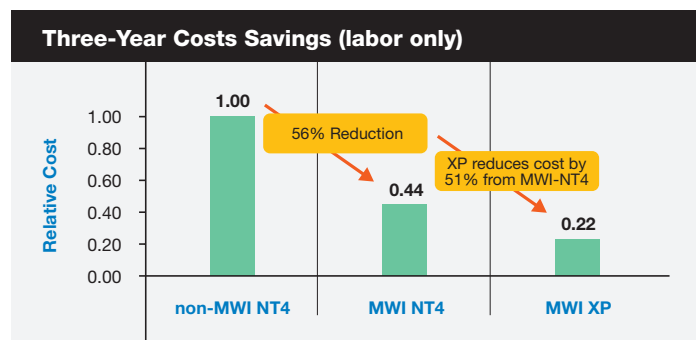
The managed workstation initiative would address these issues. And with 110,000 PCs and notebooks in an essentially unmanaged environment, the initiative would save the HMO millions of dollars in labor costs—the expenses of help desk, technicians, administration, maintenance and user support associated with the PC environment—over the three-year period of the MWI rollout.

**Effective Management Slashes Labor Costs 56 Percent**

Labor costs represent the largest expense category of ongoing TCO. Industry studies of PC best practices indicate the HMO would reduce its labor costs in the critical areas of assets and inventory management, support, and software distributions. These reductions, along with other savings from the MWI, would lower overall PC labor costs by 56 percent.

- Assets and inventory management—80 percent reduction in labor costs.** If it uses asset management software across the organization, the HMO can enhance the accuracy of its inventory database while reducing or eliminating desk-side visits to gather inventory data. With an up-to-date inventory, IT can determine which users have particular software packages installed, making it easier and faster to deploy new applications and avoiding overcharges on software that has a per-seat license. If a virus strikes a particular application or requires a particular patch level to reduce exposure, IT can quickly pinpoint which systems need to be patched.

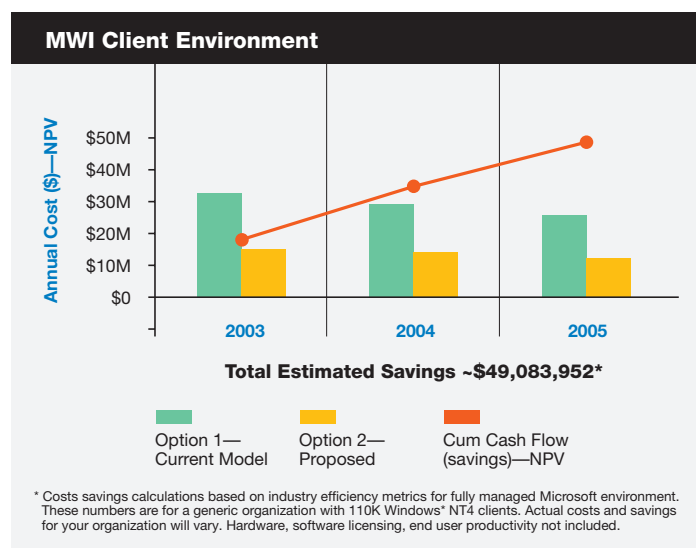
FIGURE 1. PROJECTED THREE-YEAR SAVINGS



A planned MWI would help reduce PC labor costs by 56 percent. Migrating to Microsoft® Windows® XP could produce a further 51 percent savings. The extensive savings would practically pay for the new PCs required for the upgrades.

- Support (help desk calls and desk-side support)—75 percent reduction in labor costs.** Tools for proactive remote management and remote control are well suited to the HMO's distributed work environment. Using these tools, the HMO's support staff can perform typical maintenance tasks over the network. When users encounter problems, help desk personnel can "see" the user's screen and "touch" systems remotely. Not only are there fewer help desk calls and desk-side visits in a well-managed environment, but calls are handled more rapidly, reducing user disruptions and enhancing IT and end-user productivity.
- Software distribution—58 percent reduction in labor costs.** Automated, down-the-wire software distribution produces dramatic savings by eliminating the need for manual, office-to-office distribution. Because it becomes much easier to install hot fixes and security patches, it's more likely such patches will be installed promptly. This enhances the robustness and security of the environment, minimizing end-user downtime and protecting important confidential information.

FIGURE 2. PROJECTED COST SAVINGS FROM THE MANAGED WORKSTATION INITIATIVE



\* Costs savings calculations based on industry efficiency metrics for fully managed Microsoft environment. These numbers are for a generic organization with 110K Windows® NT4 clients. Actual costs and savings for your organization will vary. Hardware, software licensing, end user productivity not included.

Over three years, the MWI is projected to save \$49 million in IT labor costs.

To measure the financial impact of the management initiative, Intel Solution Services' consultants created a baseline model that used industry data to estimate the labor-related costs of maintaining an unmanaged environment of 100,000 Windows NT-based PCs and 10,000 notebooks. Next, the consultants used industry-accepted operational efficiencies to determine the run rate for an MWI environment of PCs and notebooks. Figure 2 shows the cumulative savings of the managed environment compared to the baseline. The model reports savings in net present value dollars and assumes an annual discount rate of 15 percent.

### Migration to Microsoft Windows XP Brings Added Savings of 51 Percent

Industry best practices call for deploying the latest or fairly recent operating system version. By deploying Windows NT—an aging operating system and one for which Microsoft is phasing out support—the HMO is putting corporate data and patient privacy at risk due to security vulnerabilities. Even if the HMO is conscientious about patching PCs when flaws are identified, eventually new patches will cease as the operating system becomes unsupported. For that reason alone, the HMO contemplated a migration to Windows XP.

Beyond the general benefits that arise from standardizing the OS environment, Windows XP in particular offers a number of capabilities that contribute to lower labor costs and amplify the impact of PC best practices. For example, Windows XP provides features such as Plug-and-Play and Automated Software distribution by Active Directory\* that help organizations significantly reduce the number of images they must support, and manage and maintain those images more effectively. The Intel Solution Services consultants recommended ways the HMO could reduce the number of software images in its environment from 30 to 8, reducing complexity in the environment and generating significant savings on IT labor and other costs. Savings from image engineering and deployment features in Windows XP slashed labor costs by a further 51 percent. Other Windows XP capabilities that help reduce TCO include:

- **Less non-scheduled downtime.** Windows XP is 30 times more reliable than Windows 98 SE and significantly more reliable than Windows NT 4.0.
- **Centralized control of applications.** Software restriction policies allow administrators to block users from installing and running unauthorized applications.
- **Failure prevention.** Windows XP helps prevent most “blue screens” and allows quick recovery when a failure does occur. Side-by-side DLLs; code protection for important kernel components, device drivers, and system files; and enhanced device driver verification all contribute to a more robust and reliable system.

Again using industry studies, such as Rapid Economic Justification (REJ) studies conducted by Microsoft Consulting Services, Immedient Corporation, and NerveWire, and TCO studies with KPMG International, the consultants found an organization of 100,000 PCs and 10,000 notebooks could reduce its IT labor costs by an additional 51 percent. This brings the HMO's anticipated savings to a total of \$69 million.

The HMO is also interested in deploying Microsoft Office System\* 2003, which will provide additional value not factored into any of the preceding benefit analyses.

### PC Refresh Is Essential to the Cure

The HMO already knew its existing base of older PCs running Windows NT was inadequate to run the mission-critical medical records application it wanted to deploy. But when the company's IT organization began to deploy the managed workstation initiative on its existing PCs and notebooks, it encountered yet another reason to undertake a PC refresh: so many functionality and security issues arose that it was impossible to continue the MWI on the old, Windows NT-based PCs. Lacking management tools and plagued by incompatibilities and variability, the old PCs were not only inherently more expensive than new PCs to manage, but nearly impossible to manage effectively.

The company concluded that new PC and notebook platforms and an operating system migration to Windows XP were essential to run the new applications and cure the ills of its unmanaged environment. Rich PCs based on the fast Intel® Pentium® 4 Processor with HT Technology<sup>2</sup> deliver the performance to keep systems responsive even when users run several applications simultaneously, use demanding applications such as local rendering of complex medical images, or run foreground applications while IT runs background applications such as virus scans or file encryption. Notebooks based on Intel® Centrino™ mobile technology enable outstanding mobile performance, extended battery life, and integrated wireless LAN capability in thinner and lighter designs.

The planned PC refresh brought more good news: the TCO savings it enabled would nearly cover the cost of purchasing the new machines. The HMO projected its hardware cost for the PC/notebook refresh at \$100.5 million over three years. The cost savings expected from the management initiative come to \$49 million, and the Windows XP deployment contributes an additional \$20 million in savings. Applying those cost savings toward the purchase of the PCs and notebooks effectively reduces the purchase cost of 100,000 desktops and 10,000 notebooks to just under \$15 million—a 69 percent cost savings.

#### PURCHASE COSTS REDUCED BY SAVINGS

|  |                            |
|--|----------------------------|
| Projected original hardware purchase costs | \$100,433,365 <sup>3</sup> |
| Projected management savings               | -\$49,083,952              |
| Projected Windows XP migration savings     | -\$19,929,091              |
| <b>Projected net costs</b>                 | <b>\$31,420,322</b>        |

<sup>2</sup>Look for systems with the Intel® Pentium® 4 Processor with HT Technology logo which your system vendor has verified utilize Hyper-Threading Technology. Hyper-Threading Technology requires a computer system with an Intel® Pentium® 4 processor supporting HT Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See [www.intel.com/info/hyperthreading](http://www.intel.com/info/hyperthreading) for more information including details on which processors support HT Technology.

<sup>3</sup>All figures are calculated in net present value dollars.

## Final Word: The High Cost of Aging PCs

With 110,000 PCs and notebooks, a leading integrated healthcare provider wanted to deploy new applications to enhance organizational efficiency and patient care. It also wanted to manage its PC environment more effectively, and saw it could save millions of dollars by doing so. But its aging PCs stood in the way. Not only did they lack the performance, reliability, and security to run a new medical records application, but the environment was so non-uniform and the client systems had so many software incompatibilities and limitations, the company couldn't successfully deploy its managed workstation initiative.

By replacing its PCs and notebooks over the next three years, standardizing on the Windows XP operating system, and deploying asset management, remote control, and automated software distribution tools across the distributed enterprise, the healthcare provider is creating a robust foundation for continued business success. The company expects to reduce TCO an estimated \$69 million over three years and deploy new applications that will help it enhance organizational efficiency and patient care.

The company found the management savings enabled by the new systems will cover most of the cost of the new desktops and notebooks, in effect reducing the purchase price by 69 percent. Factor in additional benefits, such as enhanced productivity and the business value of a PC platform that will support a state-of-the-art electronic medical records solution, and it's likely the new systems will pay for themselves.

## Make the Most of Your PC Base

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Is your PC and notebook infrastructure capable of supporting next-generation solutions that can help your company fulfill its mission and compete more effectively? Intel Solution Services' Business Client Assessment Service can help you analyze your PC base, identify areas for improvement, and plan for change.

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