

## WHITE PAPER

# Improving Desktop Management with Microsoft Desktop Optimization Pack

Sponsored by: Microsoft

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## EXECUTIVE SUMMARY

Some of the most basic tasks that IT departments face deal with desktop management, yet managing internal IT users presents great challenges. These challenges include testing for application compatibility, maintaining end-user productivity, keeping track of assets, and securing desktops from unauthorized use. IT departments use many techniques to manage the desktop, including creating and managing group policies, setting standards, and allowing as few variations as possible on those standards. Software tools are available to help manage PCs over their life cycle within the enterprise, but success with these software tools depends on both the technology and how well IT organizations are equipped to use the technology.

Microsoft recently introduced a set of software tools to help address these desktop management challenges. The Microsoft Desktop Optimization Pack (MDOP) for Software Assurance is a set of five technologies — virtualization, asset management, diagnostics and recovery, group policy management, and error monitoring — combined in a single annual subscription. For this white paper, IDC surveyed 132 customers that currently use one or more of these solutions to determine the desktop management challenges they face and how they are addressing these challenges. Many Microsoft customers have realized significant benefits from using these solutions, and IDC strongly suggests that IT managers and administrators who face desktop management challenges consider these solutions for their IT departments.

## IN THIS WHITE PAPER

This IDC white paper examines key pain points and challenges associated with managing the desktop in the enterprise or division of a large organization. It discusses how IT departments address desktop management challenges today, key pain points, solutions used prior to adopting Microsoft technology, and benefits gained and expected from use of Microsoft Desktop Optimization Pack.

IDC's research for this document focused on evaluating Microsoft's market and product positioning of the MDOP solutions as well as the results of an online survey of Microsoft customers that are using one or more components of the MDOP solution (with the exception of the error monitoring component). The survey respondents are among those companies participating in Microsoft's Technology Adoption Program and may not be representative of all users. Nevertheless, the robust respondent sample, especially for two MDOP components, suggests that IT organizations, ranging from small companies to large departments of global enterprises, are realizing significant benefits with MDOP.

At the end of this paper, IDC has included a case study of a survey respondent: a manufacturer of ultrasonic equipment. The company was interviewed in-depth by phone, and its implementation of MDOP technologies helps articulate the qualitative value of these tools within the enterprise.

## SITUATION OVERVIEW

As IT departments move through the PC life cycle of purchasing, deploying, maintaining, upgrading, and retiring systems, the middle of the cycle — deploying, maintaining, and upgrading — is where IT managers and administrators spend the most time. The larger the enterprise, the more PCs must be upgraded and maintained. In maintaining and upgrading these systems, administrators and managers deal with many challenges, including application compatibility testing, application migrations, group policy change and control, maintaining OS images, recovering crashed systems, and securing desktops from unauthorized use. These challenges must be overcome to ensure that end users remain productive and are able to focus on their jobs rather than on IT tasks.

## Key Desktop Management Trends

IDC research has identified the following desktop management trends:

- Best practices use. The following key best practices have the greatest impact on reducing IT staff labor costs: centrally managed PC configurations, comprehensive PC security, and a standardized desktop strategy. Using common and interchangeable client hardware as well as tools for configuration, provisioning, and systems management leads to increased business agility as well as improved service levels. These best practices can leverage much of the existing infrastructure within many organizations.
- Automation and standardization. From small businesses to large enterprises, IT organizations that have IT asset discovery and inventory have a way to enable other IT solutions to begin automated, basic asset management to lower costs and improve availability. Multiple endpoints are being considered: appliances, virtualization, policy-based management, patch management, and so forth. Marbled within these technologies is a concern for overall system security, not just at the level of the desktop but all the way to the datacenter. Protecting the internal environment from outsiders while giving insiders needed access to specific corporate applications is key.
- ☑ ITIL/IT process standard adoption. With a strong focus on ensuring IT security, improving system availability, and meeting compliance requirements, IT organizations are moving toward more standards-based approaches to managing specific tasks and workflows within the IT department. This means implementing documented, repeatable approaches to tasks such as creating and updating images, rolling out patches, and undertaking a program to improve conducting these tasks over time.

# Introducing Microsoft Desktop Solutions

Microsoft recently introduced a set of software tools to help address these desktop management challenges. The Microsoft Desktop Optimization Pack (MDOP) for Software Assurance is a set of five products bundled together: virtualization, asset management, diagnostics and recovery, group policy management, and error monitoring.

The components of MDOP are as follows:

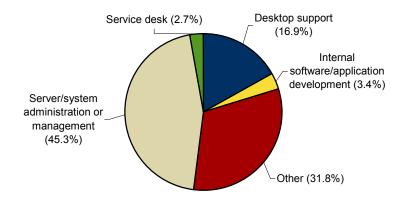
- Microsoft SoftGrid® Application Virtualization (formerly Softricity SoftGrid) delivers the virtual application solution. SoftGrid can make desktop administration simpler by combining a series of complex, time-consuming steps into a simpler automated process for distributing, updating, maintaining, and removing desktop applications. It also allows for rapid delivery of applications to a broad user community without the labor of installing and testing and, in turn, minimizes application conflicts, multiplatform packaging, and application-to-application regression testing.
- Microsoft Asset Inventory Service (formerly AssetMetrix) translates software inventory into business intelligence. Asset Inventory Service provides IT administrators with a detailed view of enterprise software inventory and an automated means to compile software asset information enterprisewide that can be updated continuously or as needed. It also reconciles enterprise data to provide IT administrators with an in-depth understanding of their software inventory.
- Microsoft Diagnostics and Recovery Toolset (formerly Winternals Administrator's Pak) can accelerate desktop repair. The Diagnostics and Recovery Toolset consists of six components that allow access to unbootable or locked out PCs to perform password resets and system restorations: a PC crash analyzer, a file restoration tool, a tool for analyzing Active Directory transactions on a local PC, a Hotfix uninstall tool, a partition recovery tool, and a disk volume deletion tool.
- Microsoft Advanced Group Policy Management (formerly Desktop Standard GPOVault) enhances group policy through change management. Advanced Group Policy Management provides an offline edit and store toolset and workflow support for management of group policies. This ability accelerates overall group policy object management tasks and improves quality of desktop standards definition and adherence to IT-defined policies. By providing versioning and rollback of group policy objects, the Microsoft system reduces the risk of widespread failures.
- Microsoft System Center Desktop Error Monitoring (formerly Agentless Exception Monitoring from Ops Manager 2007) provides IT with awareness of and insight into application and operating system failures that cause live PCs to hang or crash.

# **Overall Survey Results**

IDC's research for this project focused on evaluating Microsoft's market and product positioning of the MDOP solutions as well as the results of an online survey of Microsoft customers that are using one or more components of the MDOP solution (with the exception of the error monitoring component). IDC surveyed 132 individuals to determine their biggest desktop management challenges and how they are addressing them. These individuals were responsible for managing fewer than 100 PCs to more than 10,000 PCs. Respondents were from companies in a variety of industries and geographies, including North America, Europe, and Asia/Pacific. Figure 1 shows the respondents' top areas of responsibility; 45% of the respondents have responsibility for server/system administration or management.

#### FIGURE 1

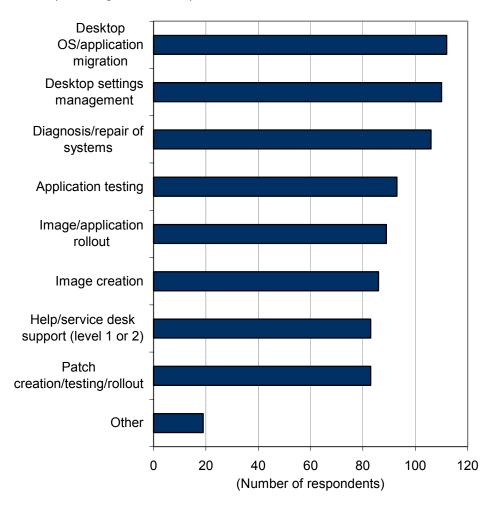
## Top Areas of Responsibility



Source: IDC, 2007

Figure 2 shows the specific desktop management tasks for which users are responsible. Desktop OS/application migration, desktop settings management, and diagnosis/repair of systems were the leading responsibilities.

Desktop Management Responsibilities



Note: The "other" category includes the following responses: all of the above, inventory, level 3, software licensing, recommend to clients.

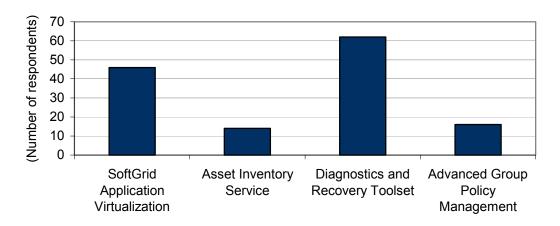
Source: IDC, 2007

Respondents were asked to rate the resource impact of various IT challenges on their organization. Application compatibility, OS migration and patching, and securing desktop applications from unauthorized use all scored high on the priority list and also require significant time and resources to execute. For application testing, for example, the number of full-time employees (FTEs) needed averaged just under 120 for an organization/department with more than 10,000 PCs. Diagnosis and repair of systems required an average of 157 FTEs for a similarly sized organization.

As noted in Figure 3, IDC surveyed IT administrators who were using one or more Microsoft technologies. The two products used most were SoftGrid (46 respondents) and Diagnostics and Recovery Toolset (62 respondents).

#### FIGURE 3

Use of Microsoft Desktop Optimization Pack Technologies Among Survey Respondents



Source: IDC, 2007

# Survey Results by Microsoft Technology

In addition to asking general questions of all respondents, IDC asked questions pertaining to specific Microsoft products as follows:

- Solutions in use before adopting Microsoft technology
- □ Challenges and pain points with prior solution
- □ Benefits realized from adopting Microsoft technology
- △ Anticipated annual cost savings from using Microsoft technology
- Anticipated annual IT labor savings from using Microsoft technology
- Assessment of performance of Microsoft technology

The next four sections discuss survey findings for the specific Microsoft technology components.

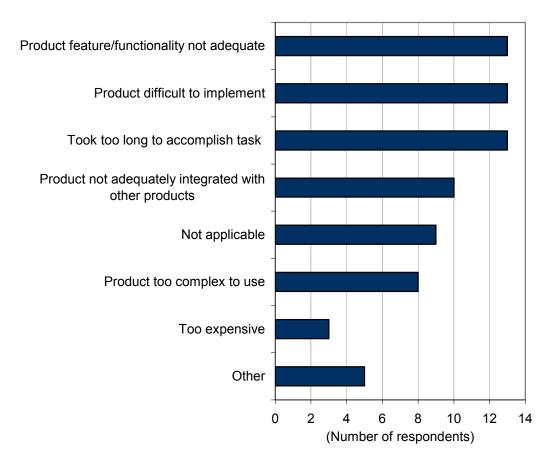
### Microsoft SoftGrid Application Virtualization

In the areas of application compatibility, customers were using a number of solutions to manage their desktops, including products from other vendors as well as Softricity (acquired by Microsoft). These solutions extended to application virtualization as well as management solutions. The majority of respondents used a number of products in their environments to support the desktop, but there were also multiple solutions used to support the applications.

Respondents to the IDC survey most often cited three areas as challenges prior to adopting SoftGrid: Product features or functions were not adequate for the task, the product was difficult to implement, and it took too long to accomplish tasks with the existing software. See Figure 4 for more details.

#### FIGURE 4

Challenges/Pain Points Prior to Adopting SoftGrid Application Virtualization



Source: IDC, 2007

#### Benefits of SoftGrid Application Virtualization

Respondents were asked to rate the extent to which they have achieved or expect to achieve the following benefits that have been cited from using SoftGrid. The number at the end of the benefit indicates the percentage of respondents that indicated "high achievement" or "very high achievement" of that benefit (4 or 5 on a scale of 1–5).

- □ Desktop administration is simplified from a series of complex and timeconsuming steps into simpler, automated process for deploying, patching, updating, and terminating applications (52%).
- Organizations will be able to reduce the number of IT resources dedicated to desktop administration tasks (43%).
- □ IT can now rapidly deliver applications to a broad user community without the labor of installing and testing, thus minimizing application conflicts, multiplatform packaging, and regression testing (56%).
- △ Management of the application lifecycle has been accelerated (52%).

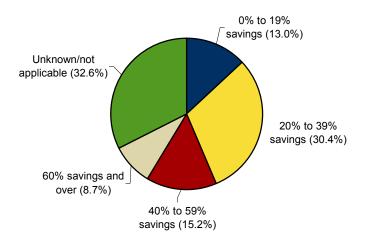
These responses suggest that users are quite enthusiastic about the benefits of using SoftGrid, especially in reducing help desk volume and call time.

#### **Cost and IT Labor Savings**

Respondents were asked to estimate the percentage of cost savings and IT labor savings that they expected to realize with the implementation of SoftGrid compared with their prior solution. Of those citing cost savings, 30% were in the 20–39% annual savings category, with an additional 24% of respondents at 40% or more savings (see Figure 5). For IT labor savings, 35% of respondents were at 40% or more savings (see Figure 6).

Annual Cost Savings Expected from Using SoftGrid Application Virtualization Compared with Prior Solution

Q. Please indicate anticipated annual cost savings (on a percentage basis) from the use of SoftGrid Application Virtualization technology compared with your prior solution.

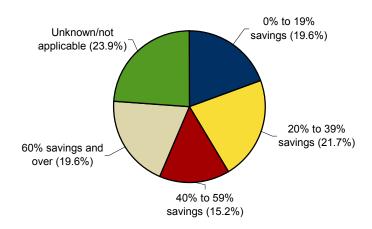


Source: IDC, 2007

## FIGURE 6

Annual IT Labor Savings Expected from Using SoftGrid Application Virtualization Compared with Prior Solution

Q. Please indicate time savings in IT labor (on a percentage basis) from the use of SoftGrid Application Virtualization technology compared with your prior solution.



Source: IDC, 2007

#### Voice of the Customer

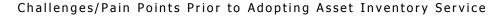
One enthusiastic SoftGrid user from the professional services industry relates the following: "I have only used the SoftGrid portion, but it is of huge value, allowing us to deploy applications to virtual machines without preinstalling those apps to the VMs. Furthermore, multiple versions of the same application can run on the same machine, which is just not possible any other way. I would be interested in trying the rest of the Desktop Optimization Pack."

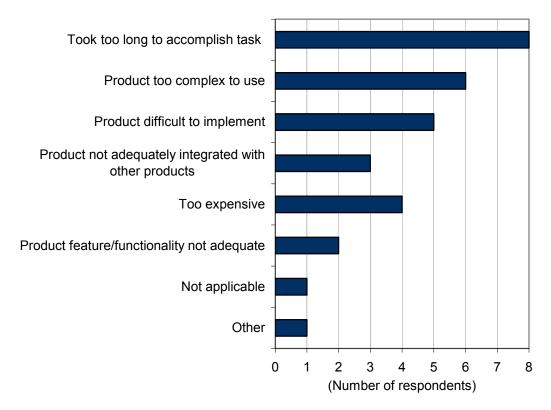
#### Microsoft Asset Inventory Service

IT administrators benefit when they have a complete view of software inventory and an easy way to gather and update asset information. Part of the requirement is simplification that comes from automating discovery and inventory of PCs on the network. And it is this automating and discovery piece that is discussed under inventory management.

#### Challenges/Pain Points

Respondents to this part of the IDC survey most often cited three areas as challenges: the existing product took too long to accomplish the task, the product was too complex to use, and the product was difficult to implement. See Figure 7 for more details.





Note: The "other" category includes the following response: hard to keep track of inventory. Source: IDC, 2007

## **Benefits of Asset Inventory Service**

Respondents were asked to rate the extent to which they have achieved or expect to achieve the following benefits that have been cited from using Asset Inventory Service. The number at the end of the benefit indicates the percentage of respondents that indicated "high achievement" or "very high achievement" of that benefit (4 or 5 on a scale of 1–5).

- Asset Inventory Service provides IT administrators with a thorough view of enterprise software inventory and an automated means to compile enterprise software asset information that can be updated continuously or as needed (79%).
- Asset analysis reconciles enterprise data to provide IT administrators with an in-depth understanding of their software inventory (79%).
- □ Inventory data is securely hosted by Microsoft, so there are no servers for IT to maintain (65%).

Close to two-thirds of respondents expect to achieve these benefits, which indicates a high degree of satisfaction.

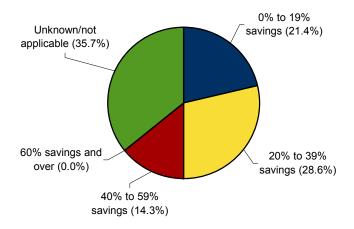
#### **Cost and IT Labor Savings**

Respondents were asked to estimate the percentage of cost savings and IT labor savings that they expected to realize with the implementation of Asset Inventory Service compared with their prior solution. As shown in Figure 8, for those who anticipated costs savings, the largest group, at 29%, was in the 20–39% savings category. For IT labor savings, shown in Figure 9, 36% of respondents cited 40% or more savings from the use of Asset Inventory Service.

#### FIGURE 8

Annual Cost Savings Expected from Using Asset Inventory Service Compared with Prior Solution

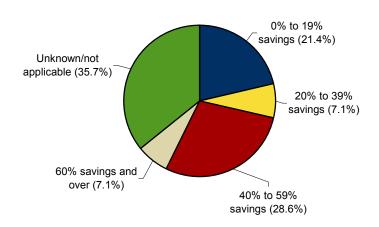
Q. Please indicate anticipated annual cost savings (on a percentage basis) from the use of Asset Inventory Service technology compared with your prior solution.



Source: IDC, 2007

# Annual IT Labor Savings Expected from Using Asset Inventory Service Compared with Prior Solution

Q. Please indicate time savings in IT labor (on a percentage basis) from the use of Asset Inventory Service technology compared with your prior solution.



Source: IDC, 2007

#### Voice of the Customer

An IT professional using Asset Inventory Service from the retail and wholesale industry notes the following: "The software asset management tool is worth whatever Microsoft decides. Your headaches will be far less if you use it."

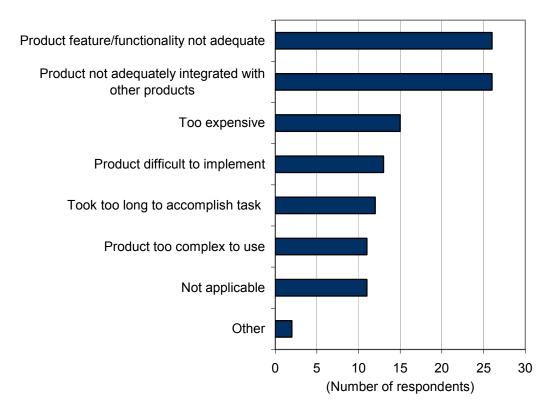
#### Microsoft Diagnostics and Recovery Toolset

One challenge cited for respondents as a whole was end-user productivity and satisfaction. This means not only keeping users up and running, but when a system fails, as a result of either user actions or other causes, troubleshooting quickly and effectively so that PCs can be operational again.

#### Challenges/Pain Points

Respondents to this part of the IDC survey most often cited either that product features/functions weren't adequate for the task or that their product wasn't adequately integrated with other products. See Figure 10 for more details.

Challenges/Pain Points Prior to Adopting Diagnostics and Recovery Toolset



Note: The "other" category includes the following responses: poor gateway support, driver integration.

Source: IDC, 2007

#### Benefits of Diagnostics and Recovery Toolset

Respondents were asked to rate the extent to which they have achieved or expect to achieve the following benefits that have been cited from using Diagnostics and Recovery Toolset. The number at the end of the benefit indicates the percentage of respondents that indicated "high achievement" or "very high achievement" of that benefit (4 or 5 on a scale of 1–5).

- ☐ IT has reduced the recovery time frame needed to troubleshoot and repair desktop problems, resulting in greater user uptime and overall business efficiency (49%).
- ☐ IT benefits from using a unified toolset that covers a diverse set of issues instead of multiple tools to fix common PC problems (56%).
- ☐ IT managers can recover failed systems faster, and end users will realize quicker, more accurate resolutions with minimal downtime (56%).

Scores of close to 50% or above for achievement of each of these benefits suggest a high degree of product satisfaction.

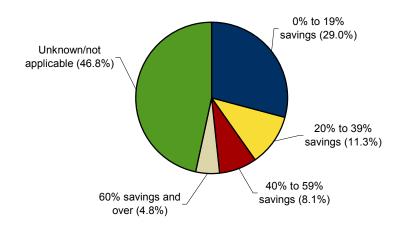
#### **Cost and IT Labor Savings**

Respondents were asked to estimate the percentage of cost savings and IT labor savings that they expected to realize with the implementation of Diagnostics and Recovery Toolset compared with their prior solution. As shown in Figure 11, for those who anticipated costs savings, 24% cited savings of 20% or more. This percentage is smaller than those for other technologies, suggesting that much of the cost savings was already realized with prior solutions. It is worth noting that 47% of respondents cited "unknown/not applicable." For IT labor savings, shown in Figure 12, 38% of respondents cited 20% or more savings from the use of Diagnostics and Recovery Toolset.

#### FIGURE 11

Annual Cost Savings Expected from Using Diagnostics and Recovery Toolset Compared with Prior Solution

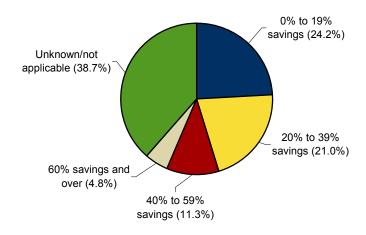
Q. Please indicate anticipated annual cost savings (on a percentage basis) from the use of Diagnostics and Recovery Toolset compared with your prior solution.



Source: IDC, 2007

## Annual IT Labor Savings Expected from Using Diagnostics and Recovery Toolset Compared with Prior Solution

Q. Please indicate time savings in IT labor (on a percentage basis) from the use of Diagnostics and Recovery Toolset technology compared with your prior solution.



Source: IDC, 2007

#### Voice of the Customer

An IT professional using Diagnostics and Recovery Toolset from the professional services industry relates that "the diagnostic and repair CD is one of the first tools we bring out to troubleshoot a system. It has some features not found in any other tools, such as being able to edit a system's registry and perform a system restore on a nonbootable system." Another user calls it "a great addition to my arsenal of tools."

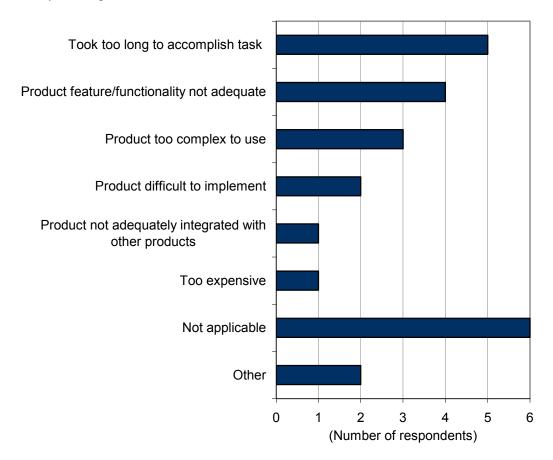
## Microsoft Advanced Group Policy Management

Securing desktops from unauthorized use brings together the discovery and inventory capabilities needed to ensure that PCs on the network are discovered in the first place. From there, administrators and managers are able to provide network resources as necessary to those PCs, as well as allowing the users of those PCs to have controlled access to corporate data.

# Challenges/Pain Points

Respondents to this part of the IDC survey most often cited either that the product took too long to accomplish the task or that the product features/functions weren't adequate for the task. See Figure 13 for more details.

Challenges/Pain Points Prior to Adopting Advanced Group Policy Management



Source: IDC, 2007

#### Benefits of Advanced Group Policy Management

Respondents were asked to rate the extent to which they have achieved or expect to achieve the following benefits that have been cited from using Advanced Group Policy Management. The number at the end of the benefit indicates the percentage of respondents that indicated "high achievement" or "very high achievement" of that benefit (4 or 5 on a scale of 1–5).

- Accelerates overall Group Policy Object management tasks and improves quality of desktop standards definition and adherence to IT-defined policies (94%).
- □ Reduces the risk of widespread failures by providing versioning and rollback of group policy objects (88%).

These figures, which indicate widespread agreement that respondents will achieve each of these benefits, are guite impressive.

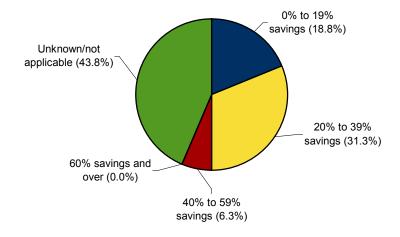
#### **Cost and IT Labor Savings**

Respondents were asked to estimate the percentage of cost savings and IT labor savings that they expected to realize with the implementation of Advanced Group Policy Management compared with their prior solution. As shown in Figure 14, for those who anticipated costs savings, 37% cited savings of 20% or more. It is worth noting that 44% of respondents cited "unknown/not applicable." For IT labor savings, shown in Figure 15, 50% of respondents cited 20% or more savings, with 12% of that group citing 40% or more savings.

#### FIGURE 14

Annual Cost Savings Expected from Using Advanced Group Policy Management Compared with Prior Solution

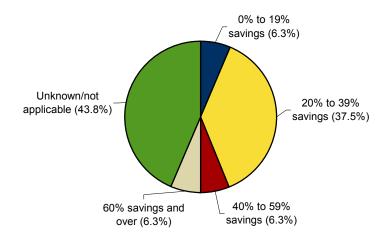
Q. Please indicate anticipated annual cost savings (on a percentage basis) from the use of Advanced Group Policy Management compared with your prior solution.



Source: IDC, 2007

Annual IT Labor Savings Expected from Using Advanced Group Policy Management Compared with Prior Solution

Q. Please indicate time savings in IT labor (on a percentage basis) from the use of Advanced Group Policy Management compared with your prior solution.



Source: IDC, 2007

#### Voice of the Customer

An IT professional from the healthcare industry notes that Advanced Group Policy Management "has allowed overburdened domain administrators to delegate management of resources to the local contacts while not granting them excessive permissions." Another user from financial services enthusiastically notes that "the tool is very valuable and significantly reduces complexity."

## **IDC** Analysis

Overall, the majority of IT administrators successfully used MDOP to achieve significant results in reducing monetary and IT labor costs while increasing productivity. Some user comments on the improvements that were cited are as follows:

- Provides value for the money
- □ Time savings/increased productivity
- □ Increased security

IT administrators also occasionally using custom desktop management packages have also seen increases in productivity, but they have come at the expense of time and money. Building a custom solution is a very expensive task and requires additional IT staff and time. In this regard, one of the benefits of using MDOP is that it is already a quality program that has the ability to yield immediate results, and Microsoft is committed to continual improvements and updates. Thus, developers can be freed up to innovate in other areas of strategic importance to their companies.

#### CHALLENGES/OPPORTUNITIES

Although most respondents were favorably impressed with the introduction of Microsoft Desktop Optimization Pack, not all respondents had positive comments. Some were disappointed by product performance; others were unhappy that the modules might require extra costs per user. Licensing policies were occasionally seen as too complex and confusing. Others cited that some of the functionality made available in MDOP technologies is rarely used and therefore not necessary. We anticipate that Microsoft will address these concerns as it rolls out its products to a larger target market.

#### CONCLUSION

An IT department's challenges across the PC life cycle cover all areas, from the deploying of applications and the system itself to upgrading, maintaining, and retiring the system. The importance of IT spending specifically for maintaining PCs is dependent on the nature of a company's business, but ensuring that PC users remain productive means that PCs have to be current and available.

The introduction of the Microsoft Desktop Optimization Pack for Software Assurance offers IT department administrators a solution to address a number of challenges associated with managing and maintaining PCs. IDC's survey of existing customers of MDOP components generally found value in the software solutions. IDC suggests that IT managers and administrators who need a way to automatically identify PCs on the network, distribute applications, diagnose and repair PCs, and administer PCs through Group Policy Objects consider MDOP for their organizations.

# Ultrasonic Precisions Inc. Gains Benefits and Competitive Advantages with MDOP

Ultrasonic Precisions Inc. is the largest manufacturer of industrial ultrasonic cleaning equipment for high-end commercial and military use in the United States. The company is located in Corona, California, and employs 2,400 people at 14 locations worldwide. An active member of the Microsoft beta testing community, Ultrasonic Precisions Inc. is an early adopter of information technology. The company quickly achieved measurable benefits from its deployment of MDOP earlier this year.

#### Why Microsoft Desktop Optimization Pack?

Under Windows XP, Ultrasonic Precisions Inc. experienced a substantial number of crashes, particularly in the areas of system file scans, command prompt, and the register editor. These problems, along with the need for technology to restore files quickly, were major drivers in the decision to deploy MDOP. "Search would cause crashes as well, and all of this has been resolved since we have installed the MDOP Diagnostics and Recovery Toolset," said Steven Fishman, the company's CIO.

"We needed such a product," Fishman continued. "There were a lot of issues with file crashes and ineffective reporting, plus we needed a virtualized solution. There were a lot of vendors out there, but I am scared to death of them because they only provide one piece of a big puzzle, whereas Microsoft comes in and provides the entire solution."

Ultrasonic Precisions Inc. has adopted the dynamic Microsoft Core Infrastructure Optimization Model, making the decision five years ago to move away from any legacy applications. As Fishman explained, "Everything we have and are going for is to make us a Microsoft shop 100%."

During the initial 30-day assessment period, each MDOP module was examined by groups of employees and tested on desktops, laptops, and virtual PCs running on XP and Vista. Full deployment of the newly released MDOP took place in April 2007. The following modules were implemented:

- △ Asset Inventory Service (formerly AssetMetrix)
- ☐ Diagnostics and Recovery Toolset (formerly Winternals Administrator's Pak)
- Advanced Group Policy Management (formerly Desktop Standard GPOVault)

"We thought it would take a month longer than it actually took. We also like everything under one management tool. It is functional, and the functionality is great," said Fishman. "We took it as an entire suite because we felt that every one of those modules had function and purpose for us. There was also a significant savings by getting the volume license for all five."

#### **Benefits and Competitive Advantages**

Recent company metrics show help desk costs decreasing 27% since the MDOP implementation, "which is considerable," said Fishman. Although no specific metrics are available at this time, early indications point to end-user downtime reduction of at least 50% to 60%, according to Fishman. The company plans to measure revenue and productivity improvements within the next six months.

Has the MDOP implementation given Ultrasonic Precisions Inc. a competitive advantage? "Absolutely, since we have been able to eliminate different problems. For example, in the SoftGrid area, we really think that we are being fully competitive there. A lot of our competitors simply do not have these functionalities. Virtualization, which is part of SoftGrid, has helped us achieve a clear competitive advantage," said Fishman.

He added that "IT budgeting will be extremely reduced" with simplified administration and MDOP's reporting capabilities. The company estimates that it will achieve savings close to 20% of the total IT budget thanks to MDOP.

Fishman was enthusiastic: "Because we can scan the inventory using Asset Inventory, that is another tremendous thing we can accomplish. The virtual footprints are part of the savings. We are also going to save money on the bandwidth that is being reduced. These are all hidden savings."

"There is an annual savings that is going to be sustained for our company from using MDOP over not using it. I know that," Fishman concluded. "At the end of the year, we will be able to provide those figures."

## Implementation Challenges

End-user training and employee technology adoption have presented some minor challenges. Issues such as how to use the reporting or how often to report were easily overcome through training and working with the company's Microsoft partners. "Providing real-time awareness of what to do with these critical errors, calculating the metrics too, like how to measure the benefits, has been a challenge," said Fishman.

## Conclusion

Ultrasonic Precisions Inc. is thrilled with its implementation of MDOP. "Excellent! On a scale of 1 to 10, where 10 is the highest, I would rate it a 10," said Fishman. The company is eager to deploy Context, an MDOP add-in, which is slated to be released within the next year or so.

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