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WHITE PAPER

Desktop Optimization Using MDOP: Continued Investment Leads to Better Value

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EXECUTIVE SUMMARY

A well-managed environment consistently outperforms an inconsistent or poorly managed environment, and a well-managed environment will result in better uptime, lower cost of management, and fewer help desk calls. Fewer problems lead to happier — and more productive — end users. IDC research finds that companies investing in tools that allow a PC environment to be better managed and kept more secure and well prepared for a recovery — should it become necessary — have lower operational costs and can experience a significant return on investment (ROI) associated with their management tools.

Business Value Highlights

Microsoft MDOP delivers a three-year ROI of 532% with a payback period of 4.6 months.

Benefits include:

- Automating processes and providing management and visibility and quicker resolution to PC problems increased IT staff productivity, reducing the costs to support PCs by $194 per PC per year.
- End-user productivity loss from downtime, calls to the help desk, and self-troubleshooting was reduced by 63%, restoring to each user eight hours of 100% productive time and saving $290 per PC per year.
- Other cost savings, including the reduction in spending on third-party software solutions and better management of IT resources, totaled $23 per PC per year.

Such is the case when using the Microsoft Desktop Optimization Pack (MDOP), a primarily client-side management suite that offers six discrete solutions to help personalize the user experience, simplify application deployment, and improve application compatibility with the Windows operating system. In addition, MDOP includes products that help manage, monitor, and deploy key Windows features such as BitLocker and Group Policy. Using MDOP shifts desktop repair from reactive to proactive, saving time and removing challenges associated with troubleshooting and repairing system failures.

IDC found that a PC that uses all six MDOP solutions can realize annual IT productivity savings as high as $194 per year per managed PC, or a 36% reduction in annual cost, compared with a PC that is not using the MDOP suite. In addition, end users see a productivity gain, with a cost savings associated with improved user productivity calculated at an additional $290 per PC per year. Together with savings realized by the elimination of third-party software, hardware, and additional software licensing costs, operational cost savings can reach a combined total of up to $508 per PC per year.

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These cost savings and benefits are broken out into the following key areas:

- Cost savings associated with improved IT productivity and efficiency. This may include the benefit of accelerating routine tasks such as rolling out new PCs, operating systems, or applications and recovering failed systems. It also can include the reduction in recovery/repair activities due to more stable and reliable PC configurations. By automating processes and providing management and visibility and quicker resolution to PC problems, companies in this study were able to reduce the IT labor costs associated with PC deployment and annual support of PC operations, including help desk operations, by $194 per PC per year.

- Cost savings associated with improved end-user productivity. MDOP enhances end-user productivity by reducing the time users lose to problems with PC operations. End users experience less downtime, or when there is a system failure, they are able to recover and restore operations more quickly. This study found that downtime and help desk issues and instances of user self-troubleshooting were significantly reduced, restoring eight hours of 100% productivity to each end user and saving $290 per PC per year.

- Other cost savings, including the reduction in spending on third-party software solutions previously used by companies in this study. Better management of IT resources also led to reductions in the costs associated with hardware, software licensing, and deployment management support, which enabled companies to reduce third-party support. Savings in this area totaled $23 per PC per year.

- The cost reductions found by IDC's analysis led to a strong ROI story. On average, companies experienced discounted benefits of $1,220 per PC over a three-year period at a total discounted investment of $195 per PC. The investment yields an ROI of 532% over three years. Companies included in this study on average were able to pay back their initial investment in 4.6 months, making a strong justification for acquiring and deploying MDOP.

Summarizing the findings, IDC found a substantial and quickly recognizable payback associated with using the MDOP suite, particularly for organizations that embrace the technology and use at least several components included in MDOP. The study found that the greater the number of MDOP components that an individual customer deployed, the greater the overall benefit the customer experienced.

The only consideration for customers is that gaining access to MDOP requires a Volume License contract with Windows Client Software Assurance (SA) because MDOP can be purchased only by SA customers. But given that prerequisite, the relatively low acquisition cost of MDOP (a list price of $10 per PC per year) ensures substantial benefit from the incremental investment.

IN THIS WHITE PAPER

This IDC White Paper considers the operational experiences of customer sites that are using the Microsoft Desktop Optimization Pack to manage and maintain their PCs and calculates a total cost of ownership (TCO) and ROI model associated with using these products.

METHODOLOGY

IDC identified, screened, and qualified multiple end-user organizations and used the experiences of these organizations as a representative model of the effect of acquiring and deploying MDOP. As part of this work, IDC conducted a series of interviews with these companies about their use of MDOP and carefully probed customers about their experience with components within the MDOP suite that they are using. This analysis involved capturing the operational characteristics of their environment, including frequency of end-user problems, outages, help desk calls, and time spent by IT professionals to support PCs within the organization, both before and after their deployment of the MDOP suite.

This information is used to create a before and after model for these organizations depicting their operational costs and how those costs are affected by the use of one or multiple components of MDOP. This data is used to calculate TCO and ROI. For more detail, please see the Appendix.

STUDY DEMOGRAPHICS

The demographics for the organizations IDC interviewed are illustrated in Table 1. Median values for these organizations include 4,250 employees, 65 IT employees, and 3,875 PCs. The PC count being lower than the number of employees implies that these organizations are in a business vertical where there is some PC sharing or shift scheduled that does not mandate one PC per employee. This global study included interviews with organizations in Europe, Asia/Pacific, and the United States.

Being progressive organizations that carry Software Assurance on their PCs, it comes as little surprise that there is comparatively less Windows XP installed at these organizations than would be found industrywide because SA increases the potential for and lowers the expense of migrating to the newest version of Windows.

Windows 7 penetration is about where we would expect to see it, but Windows 8 adoption is far beyond what we see industrywide. IDC notes that the Windows 8 penetration rate was elevated studywide by one organization that had largely migrated its entire PC installed base to the most current Windows product (see Table 1).

TABLE 1

Interview Company Demographics

Employees (median)	4,250
IT staff (median)	65
PCs (median)	3,875
% of PCs by operating system	
Windows XP	22
Windows 7	48
Windows 8	21
Other (non-Windows)	9
% of PCs covered by MDOP	100
Average MDOP products in use per organization	3.4

Source: IDC, 2013

SITUATION OVERVIEW

The Windows desktop environment is entering a period of significant change, brought on in part by the introduction of Windows 7 and Windows 8 in a relatively short period of time. Further complicating things for IT professionals is the bring-your-own-device (BYOD) trend that is altering how users and IT departments interact now and in the future.

Never before has IT faced a more complicated and faster-changing challenge. If ever there was a need for sophisticated and efficient tools to manage this changing IT environment, it is now.

At the same time, these changing times create an ideal inflection point to move to smarter management tools that reduce the burden on IT posed by routine maintenance and support issues. The opportunities exist to improve application delivery, extend user state virtualization, and protect data on PCs even if the device should end up in the wrong hands. Desktop virtualization technologies are another dimension that not only improves the usability of existing PCs but also can help extend the application experience to BYOD users.

IDC research indicates that organizations that combine a greater emphasis on a consistent and standardized software stack on their PCs generally enjoy lower long-term operational cost thanks to that more consistent environment. The key to deploying — and maintaining — consistency is the use of management tools that make it practical to empower employees to be productive with their PCs but at the same time prevent systems from individually diverging significantly from the standard build of the corporate software environment.

What Is Included in MDOP?

The MDOP suite can be grouped into three broad functional areas: tools that help solve compatibility issues and make deployment easier through virtualization technology, tools that generally enhance IT management and security and boost IT and user productivity, and tools that speed PC recovery or proactively boost user productivity.

- **Microsoft Application Virtualization (App-V).** Using App-V, customers can stream an application to individual desktops on an as-needed basis, with those applications deploying in a virtualized environment aboard the PC, insulated from other applications.

- **Microsoft User Experience Virtualization (UE-V).** This relatively new component of MDOP incorporates some concepts that historically were associated with Windows but were not previously widely used by customers. The UE-V product enables user state virtualization, making it possible to deliver a user's personal Windows experience across multiple devices. This includes delivery of a consistent look and feel regardless of how Windows and applications are deployed. UE-V makes it possible to use multiple Windows 7 and Windows 8 devices and gain a consistent experience with each instance.

- **Microsoft BitLocker Administration and Monitoring (MBAM).** This technology makes administration of BitLocker implementations simpler and more practical for enterprise-level deployments. MBAM simplifies deployment and key recovery, centralizes compliance reporting and enforcement, and can lower administration costs associated with provisioning and supporting encrypted drives within an organization.

- **Microsoft Advanced Group Policy Management (AGPM).** Most customers running a Windows server infrastructure also use Active Directory and Group Policy Objects (GPOs) to manage the configuration and use rights on PCs. AGPM empowers IT staff to review and modify GPOs without affecting employee desktops and allows for greater control over how edits are made and applied, resulting in a much richer level of PC manageability.

- **Microsoft Diagnostics and Recovery Toolset (DaRT).** The DaRT product is a set of 14 individual tools that help diagnose and repair a PC that has failed — even if it won't boot into safe mode — remove malicious code, or recover deleted files.

- **Microsoft Enterprise Desktop Virtualization (MED-V).** This product is used to support applications that are incompatible with Windows 7 by continuing to run the applications within a Windows XP virtual workspace on a Windows 7 machine.

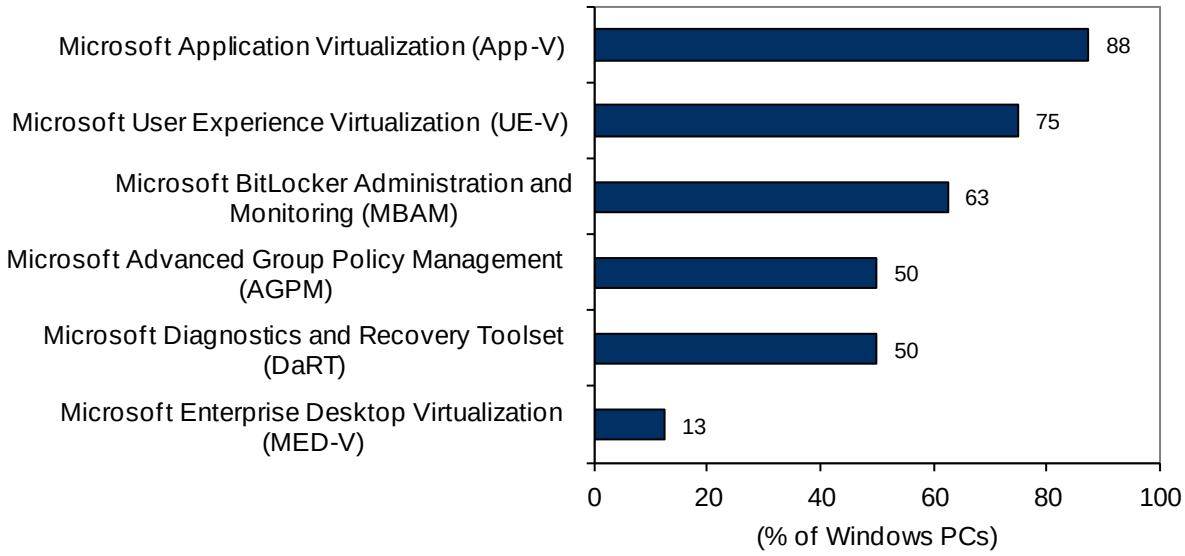
During the in-depth interviews that took place with customers, IDC captured information about which elements of the MDOP suite customers were using. Figure 1 highlights the usage of individual MDOP products on the PCs in use at customers interviewed for this analysis.

As depicted in Figure 1, the most commonly used solution was App-V, followed closely by UE-V. App-V usage is higher in this study compared with a previous IDC study, and it appears that this product has become the single most attractive solution for customers.

Another relatively new addition to the MDOP suite, MBAM is the third most widely used product at 63% of PCs. The least used of the MDOP products on the PCs in use within the survey sample is MED-V. Among mainstream end-user employees, MED-V is likely to see decreasing use as customers get further away from a hybrid Windows XP and Windows 7/Windows 8 mix of products.

FIGURE 1

Customer Use of Individual MDOP Products



Source: IDC, 2013

BUSINESS VALUE OF MDOP

IDC research takes a broader look at ROI and TCO and describes these metrics using the concept of "business value." Business value is an expansion of the basic value proposition offered by the acquisition and deployment of a product and extends that view to include the benefits realized by end users through better uptime and productivity, the avoidance of server downtime, and the resulting improved business agility that allows companies to deploy applications faster and more reliably.

With our research around the use of MDOP suite products, we use a business value metric to measure the annual TCO and ROI benefits associated with PCs that use MDOP compared with PCs managed without the benefit of MDOP.

Table 2 presents the cost reductions associated with the deployment of MDOP. Overall, cost reductions associated with IT productivity, when combined with end-user productivity gains and other cost savings, based on the presumed use of all six products included in MDOP, can lead to an average annual benefit of up to $508 per PC. Use of fewer than all six MDOP products will lead to a lower overall cost benefit.

This $508 benefit is composed of the following contributions:

- **IT productivity.** This includes routine tasks such as rolling out new PCs, operating systems, or applications and recovering failed systems. It also can include the reduction in recovery/repair activities due to more stable and reliable PC configurations. MDOP use leads to savings of up to $194 per PC per year, or roughly four hours per PC per year.
- **End-user productivity.** End users experience less downtime and fewer other PC issues that impact operations. When there is a problem, IT can recover and restore operations more quickly. MDOP use leads to savings of up to $290 per PC per year. This line item accounted for over half, or 57%, of the total cost savings that is attributable to MDOP.
- **Other cost savings.** This includes the reduction in spending on third-party software solutions and reductions in hardware costs and software licensing and deployment that enable companies to reduce third-party support. MDOP use leads to savings of up to $23 per PC per year.

TABLE 2

Annual Benefits of Using MDOP

	Cost Savings per PC per Year ($)	% of Total
IT productivity	194	38
End-user productivity	290	57
Other cost savings	23	5
Total	508	

Source: IDC, 2013

The Impact on IT Productivity

As depicted in Table 3, the $194 in annual productivity savings per PC for IT staff is a composite of cost savings in several common IT activity areas: annual management, PC deployment, help desk, and downtime (and subsequent recovery).

- PC deployment costs — IT staff time associated with new PC deployments such as staging and logistics, installing PC operating system images, installing or provisioning applications on new PCs, configuring disk encryption and other security measures to ensure long-term protection of corporate assets, and supporting PCs immediately after deployment
- Annual management costs — Ongoing PC management, including provisioning and/or installing additional new applications, updating/replacing existing applications, ensuring content is secure on laptops that may be lost or stolen
- Help desk costs — IT staff time to answer calls to the help desk and resolve PC issues such as software compatibility, access, and updates
- Downtime costs — IT staff time to respond to and resolve hardware and operating system failures and other system outages

As noted in Table 3, the biggest change on a percentage basis came from help desk cost reductions (65%) and downtime cost reductions (76%). However, in terms of absolute dollars, the more significant reduction was associated with annual management costs, which contracted by $106 per PC per year, compared with PCs not using MDOP solutions.

TABLE 3

IT Productivity Cost Savings per PC per Year Attributed to MDOP

	Before ($)	After ($)	Savings ($)	% Change
Annual management	356	250	106	30
PC deployment	94	69	25	26
Help desk	74	26	48	65
Downtime	19	5	15	76
Total	543	349	194	36

Source: IDC, 2013

Understanding User Productivity

Table 4 shows user productivity cost savings in the following areas:

- **Help desk:** Productivity loss associated with end users waiting on or working with help desk personnel to resolve a PC issue
- **Downtime:** Productivity loss associated with downtime when a PC is not available for use due to planned or unplanned downtime
- **Self-service:** Productivity loss associated with end users working to solve PC problems themselves (This could include searching for resolution to problems or time spent waiting for reboots or patch installation to complete in an effort to resolve a problem the user faces.)

As depicted in Table 4, the $290 in annual productivity savings per PC per year for end users is a composite of four areas. The single largest cost savings area, in terms of both absolute dollars and percent change, is the reduction in time spent waiting for help desk support. The cost savings is $140, or nearly half of the $290 total cost savings. This area realized an 85% reduction in costs, which dropped from $165 per PC per year to $25 per PC per year. The next most significant savings came from the dramatic reduction in time spent with self-service support. On average, MDOP is saving each PC user nearly 16 hours per year. Unlike downtime, which is a total loss in productivity, self-service activities result in less than 20% loss. The use of MDOP dropped loss from self-service troubleshooting from $190 to $79 per PC per year, a 59% reduction.

TABLE 4

User Productivity Cost Savings per PC per Year Attributed to MDOP

	Before ($)	After ($)	Savings ($)	% Change
Help desk	165	25	140	85
Downtime	49	10	39	80
Self-service	190	79	112	59
Total	404	113	290	72

Source: IDC, 2013

Breaking Down MDOP Savings by Product

MDOP products are available only as a suite — that is, individual products are not available on a standalone basis. However, typically customers do not use every product in the MDOP suite. Indeed, the customers in this study used, on average, 3.4 of the 6 products included in MDOP. Given that the incremental cost to add MDOP to an existing Volume License agreement with Windows Client Software Assurance is only $10 per PC per year, the use of a single MDOP product can more than offset that incremental cost, and the use of 3.4 MDOP products indicates a strong value proposition.

Use of MDOP products is likely to be more closely related to broader corporate initiatives to manage operational expenses rather than the exact savings associated with each individual product. Nevertheless, Table 5 breaks out the cost savings per PC per year for each of the six MDOP products.

As noted in Table 5, the largest contributors to cost savings were MBAM, with a $58 cost savings, or 30% of the overall $194 cost savings total, followed by App-V, at 26% of the overall total, or $50 in cost savings. Other contributors to cost savings were DaRT, at 19% of the total cost savings, and UE-V, at 16% of the overall cost savings.

TABLE 5

MDOP Product-Related IT Staff Labor Savings per PC per Year

	Value ($)	% of Total	Hours
Microsoft Application Virtualization (App-V)	50	26	1.2
Microsoft User Experience Virtualization (UE-V)	30	16	0.70
Microsoft BitLocker Administration and Monitoring (MBAM)	58	30	1.3
Microsoft Advanced Group Policy Management (AGPM)	9	5	0.21
Microsoft Diagnostics and Recovery Toolset (DaRT)	37	19	0.87
Microsoft Enterprise Desktop Virtualization (MED-V)	10	5	0.22
Total	194		4.5

Source: IDC, 2013

Cost to Deploy and Use MDOP

When it comes to reducing costs related to IT, rarely is there a free ride. To recognize a return on an investment, an organization must first make an investment. Initial costs include the server hardware and software needed to support the MDOP applications; the IT labor required to install the servers and deploy MDOP; and training for IT to use MDOP, which includes any training services and the cost of the time IT staff spend in training.

Annual costs include IT labor to support the MDOP applications and the servers and the annual license fees for Windows Client Software Assurance and MDOP. Table 6 captures this specific metric and introduces the costs that organizations interviewed in this study experienced to deploy and use MDOP.

The acquisition, deployment, and operational costs identified in Table 6 are amortized over a three-year period. These costs are used as one of the baseline values for the ROI calculations made in this analysis.

IDC notes that while MDOP costs $10 per PC per year, the requirement of having SA in place adds an additional $55 per PC per year, which leads to higher overall acquisition costs for organizations that do not currently have SA in place. Customers tend to not see MDOP on the basis of its standalone cost; rather, they see it as a component of a much larger investment (including SA), as indicated in Table 6. In reality, SA is not simply an MDOP prerequisite; it is a separate product that offers a value proposition that includes upgrade rights to the latest Windows client operating system version as well as a variety of training, support, and additional use rights that go beyond the standard licensing terms.

TABLE 6

Three-Year Investment Associated with Deploying and Using MDOP ($)

Hardware	11
IT labor install	2
Training	15
Cost per seat for MDOP	195
Ongoing FTE	1
Total	224

Source: IDC, 2013

ROI ANALYSIS

IDC uses the net present value (NPV) of the savings and increased revenue over three years in calculating the ROI and payback period for the deployment. The NPV of the savings is determined by subtracting the amount that would have been earned by investing the original sum in an instrument yielding a 12% return (to allow for the missed opportunity cost that could have been realized using that capital). This accounts for both the assumed cost of money and the assumed rate of return. The ROI analysis is shown in Table 7.

TABLE 7

Three-Year ROI Analysis per PC

Benefit (discounted)	$1,220
Investment (discounted)	$195
Net present value	$1,025
ROI = NPV/investment	532%
Payback	4.6 months
Discount factor	12%

Source: IDC, 2013

On average, companies identified discounted benefits of $1,220 per PC for a three-year period at a total discounted investment of $195 per PC. The investment yields a return of 532% over three years. Companies included in this study on average were able to pay back their initial investment in 4.6 months.

FUTURE OUTLOOK

Given the significant change sweeping over the industry today, the time has never been better to establish a secure and responsible approach to deployment and management of PCs. Microsoft has long encouraged customers to incorporate stronger PC configuration and management processes into their environments; deploying MDOP is one effective way to help reach that objective.

Unfortunately, not all customers can rationalize the benefit of an investment in management, and some customers, particularly smaller businesses, tend to use few management tools — sometimes none at all. IDC expects that the difficulty of client management will continue to decline over time, offset by new challenges caused by BYOD trends.

CHALLENGES/OPPORTUNITIES

Every product solution has a market segment where it has a best fit and yet may be challenged to be equally successful in other market segments. MDOP is no different. It has significant strength among large enterprise customers, but it is not nearly so successful among small and medium-sized businesses.

- **Challenge: Not all customers have SA.** The most common way for customers to gain access to purchase MDOP from Microsoft is to have a Volume License agreement with Windows Client Software Assurance. However, there are several other ways to indirectly gain access to MDOP, specifically for customers that acquire Microsoft Virtual Desktop Access (VDA) licenses or have a subscription to Windows Intune. Without one of these relationships in place, customers cannot acquire MDOP today. This means that for customers that do not have or do not plan to acquire a Volume License or VDA seats, MDOP is not a viable solution simply because it is not available.

- **Opportunity: MDOP is still relevant for virtualized client deployments.** Virtual client computing does not relieve an IT department from treating the virtual client instances as full Windows desktops, and much of the functionality included in MDOP applies to virtual clients just as it does to physical clients. A customer that chooses to use a Microsoft competitor as its primary client virtualization supplier still can benefit from the other five products included in the MDOP suite, as those products remain relevant and valuable even if a customer opts to not use MED-V.

CONCLUSION

A well-managed environment will consistently outperform an environment that has less sophistication, less consistency, or less lockdown — in terms of uptime, cost of management, help desk calls, and a variety of other metrics. Advanced management tools, when applied and used properly, offer a return on the investment required to deploy them that exceeds the original deployment cost over a period of three years.

IDC found that a PC that uses all six MDOP solutions can realize annual IT productivity savings as high as $194 per year, or a 36% reduction in annual cost, compared with a PC that is not using the MDOP suite. Further, end users see a productivity gain as well, with a cost savings associated with improved user productivity calculated at an additional $290 per PC per year. Full cost savings, including other miscellaneous costs that result from the use of MDOP, can reach $508 per PC per year.

IDC found a substantial and quickly recognizable payback associated with using the MDOP suite for organizations that embrace the technology and use at least several components of the suite. As organizations continue transitioning to Windows 7 and Windows 8, the timing could not be better to adopt a consistent PC deployment and management approach. MDOP can be an effective tool to reach that goal.

APPENDIX

IDC utilized its standard ROI methodology for this project. This methodology is based on gathering data from current users of the technology as the foundation for the model.

As part of this study, IDC identified, screened, and qualified eight end-user organizations and constructed a study group to be used as a representative sample of the industry. As part of this work, IDC conducted a series of interviews with these companies about their use of MDOP and carefully probed customers about their experience with components within the MDOP suite that they are using. This analysis involved capturing the operational characteristics of their environment, including frequency of end-user problems, outages, help desk calls, and time spent by IT professionals to support PCs within the organization, both before and after their deployment of the MDOP suite.

Based on these interviews, IDC performs a three-step process to calculate the ROI and payback period:

1. Measure the savings from reduced IT costs (staff, hardware, software, maintenance, and IT support), increased user productivity, and improved revenue over the term of the deployment.
2. Ascertain the investment made in deploying the solution and the associated training and support costs.
3. Project the costs and savings over a three-year period and calculate the ROI and payback for the deployed solution.

IDC uses the NPV of the savings and increased revenue over three years in calculating the ROI and payback period for the deployment. The NPV of the savings is determined by subtracting the amount that would have been earned by investing the original sum in an instrument yielding a 12% return (to allow for the missed opportunity cost that could have been realized using that capital).

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

1. Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings.
2. Downtime values are a product of the number of hours of downtime multiplied by the number of users affected.
3. The impact of unplanned downtime is quantified in terms of impaired end-user productivity and lost revenue.
4. Lost productivity is a product of downtime multiplied by burdened salary.
5. Lost revenue is a product of downtime multiplied by the average revenue generated per hour.

6. The NPV of the three-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.

Because every hour of downtime does not equate to a lost hour of productivity or revenue generation, IDC attributes only a fraction of the result to savings. As part of our assessment, we asked each company what fraction of downtime hours to use in calculating productivity savings and the reduction in lost revenue. IDC then taxes the revenue at that rate.

Further, because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.