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The Business Value of Optimized Device Deployment

To demonstrate the potential impact for an organization leveraging the Dell ProDeploy Client Suite of services, IDC has created a hypothetical analysis that shows:

ProDeploy Plus can reduce deployment time by up to

56%

ProDeploy Plus can reduce deployment costs by up to

$792 Per PC

See the Potential Benefits of Dell ProDeploy Client Suite section of the document for assumptions and details.

IDC OPINION

Today's workforce relies on a dizzying mix of devices (from PCs and laptops to mobile phones and tablets) to work productively anywhere, anytime. Companies need the ability for these devices to be delivered and fully configured for users quickly, wherever those users work, with easy access to any existing data and applications. Users want minimal disruption when they get a new device, and IT departments need to maintain the system's fitness, security, reliability, and efficiency over the life of that system. Relying on partners to assist in this space may be a prudent option for companies looking to focus on their business and not on mundane IT tasks.

IDC found that organizations with the most optimized overall approaches (the dynamic level) to PC deployment across deployment activities incur lower costs associated with IT staff time and lost user productivity compared with those with the least optimized processes (the basic level) by:

- Relying on centralized processes to manage deployments and leveraging automation to deploy PCs in less time
- Giving users more control over applications and migration of files to new PCs
- Minimizing the frequency, duration, and impact of problems related to PC deployment

In analyzing deployment costs on a per-activity level rather than on an overall organizational level, IDC found that organizations achieve even more significant efficiencies for each deployment activity. Costs associated with IT staff time savings per deployment activity are in the 67–75% range as organizations make advances from basic to dynamic practices.

IDC believes that the Dell ProDeploy Client Suite of services provides a simplified way to help enterprises become more mature in how they deploy devices. IDC's analysis of costs by deployment activity suggests that an organization that is assumed to use Dell ProDeploy Plus

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to advance from the basic level for all deployment activities and reach the standardized, rationalized, and dynamic levels for various deployment activities could reduce the costs associated with IT staff time for deployment-related activities by 56%, a potential savings of almost $800, or 17 hours of staff time per device deployed.

IDC also found that organizations turned to outside vendors for deployment services for three key reasons: vendors have the expertise required, the service is more cost effective, and the service improves the user experience and the quality of the deployment.

SITUATION OVERVIEW

In today's digital economy, employees must be productive on any device, anywhere. Unfortunately, enterprises struggle to deploy, operate, and dispose of these assets efficiently and economically. Industries are looking for better ways to serve an ever-increasing mobile workforce, which is used for consumerization, automation, and self-service. The scale and scope of user demand are growing faster than ever, with each person using technology differently and with increasingly varied requirements.

Key Areas of Device Deployment

In terms of deployment and client management, enterprises should think of the following key areas:

- **Program management:** A very important aspect to deployment is that program managers will need to think about what systems are purchased and who gets what types of system. Equally important is how the company tracks those systems, not just through the deployment process but also throughout the life cycle of the device. Program management is not just about a onetime purchase and how the device is deployed. Enterprises must track systems throughout their life cycle until the next device must be procured and deployed. Robust policies and procedures that can follow devices throughout their life cycle are critical to end-user productivity and satisfaction.
- **Staging and logistics:** Being able to quickly get a system into the hands of a user is critical, whether an organization is onboarding a new employee, providing an existing employee with a new device, or repairing an existing user's system. A well-defined process for managing these systems can be a key time saver. Workspaces need to be clean, have plenty of power, and be able to image multiple systems simultaneously.

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- **Imaging:** With Windows 10, it is very important to vet any images properly. What works in a Windows 7 environment may or may not work in Windows 10, so testing those apps in the new environment is critical. Enterprises must also prepare for maintenance and updating of those images, so image maintenance becomes another piece of the puzzle.
- **User data:** One of the most critical pieces for the best customer experience is making sure systems are returned to users with all the data and user preferences intact. Organizations need to think about what is the best way to back up and migrate user data. All user data and settings must be available on the new computer the first time users boot it.
- **Applications:** Additional applications and new virtual operating environments should be available on an as-needed basis, incorporating tutorials and training if needed. One possibility is creating an application store that users can access on an as-needed basis.
- **Client fitness:** Remote access should be available to continually support the device over time. At the time of deployment, tools should be installed on the device to provide remote management and support capabilities.

All deployment activities have an overarching theme of security. Security standards (patches, updates, and tools) must be applied before the device arrives onsite. These features must secure the user data and protect the data from threats, ranging from malware and hackers looking to infiltrate new devices on a network to being able to remotely wipe or track systems after they have been compromised.

The prime mission of optimizing device deployment is to have the system ready for use as soon as end users receive it, with zero downtime. Further, end users should be able to fire up the new device and go right back to work.

IDC and Dell collaborated to develop an "optimized deployment model" to help companies understand and evaluate the maturity of their PC deployment practices and learn how they can improve their practices. Table 1 provides six specific activities defined by the PC-optimized deployment model.

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TABLE 1 Overview of the PC-Optimized Deloyment Model

	Basic	Standardized	Rationalized	Dynamic
Program management	No centralized deployment, planning or tracking	Deployment status manually tracked through general office software tools	PMO aggregates deployment task status into centralized monitoring tools	Automated deployment monitoring and reporting with proactive issue resolution
Staging and logistics	Multiple legs for warehousing and staging	Buffer stock warehousing only	PCs shipped directly from OEM to campus locations	PCs shipped directly from OEM to remote users
Imaging	Centralized image applied in the field	Image loaded as part of the PC build process	A dynamic cross-platform image loaded in factory	Extend onsite PC management to factory for imaging, domain join, and security updates
Applications	<25% of apps and updates automated and successful	50% of apps and updates automated and successful	90% of apps and updates automated and successful	Applications available in a self-service store
User data	Files stored locally on the user's PC	Files stored locally; automated migration to new computers	Files stored locally; regular snapshots backed up to the network	User data lives in a secure cloud and is available to the user on any device
Client fitness	Systems management <50% successful at maintaining IT standards	Systems management 75% successful at maintaining IT standards	Systems management 90% successful at maintaining IT standards	Integrated and proactive protection of devices, data, and identity

Source: IDC and Dell, 2017

BUSINESS VALUE OF OPTIMIZING PC DEPLOYMENT

IDC surveyed 500 organizations located around the world to understand the impact of optimizing PC deployment activities. These organizations were roughly evenly distributed by size (firms with 100–249, 250–999, and 1,000+ employees) and region (North America, EMEA, and APAC) and represented the experiences of a variety of industry verticals. For additional details about the survey sample, see the Methodology section. All interviewed organizations deploy PCs to employees on a regular cadence of at least one deployment per year.

Given the importance of PCs to everyday work and the resources devoted to ongoing deployments, the importance of making deployments efficient, timely, and seamless is self-obvious. IDC's analysis considered the following in evaluating the cost to organizations of deploying PCs:

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- IT labor staff time costs involved in deployment activities (refer back to Table 1)
- User productivity costs calculated based on time that a user cannot use the PC because of deployment activities, including deployment-related problems and changes required

Deployment Cost Analysis by Organizational-Level Optimization

IDC's top-line analysis informing this study is based on categorizing the level of optimization each organization has achieved for deploying PCs given how they carry out PC deployment activities. This analysis reflects the fact that survey participants maintain a variety of practices regarding PC deployment and are often more mature or optimized in certain deployment activities than others. Table 2 shows where these organizations fall in each of the deployment activities per their self-reported practices for each deployment activity, with certain activities having a higher relative percentage of organizations falling in the "dynamic" grouping.

On the basis of respondents' reported practices for each deployment activity, IDC classified all surveyed organizations in terms of overall level of optimization: "basic" (least optimized), "standardized," "rationalized," and finally "dynamic" (most optimized). Table 2 shows that about three-quarters of organizations were classified as either standardized or rationalized, with about one-fifth and one-tenth of organizations being classified as basic and dynamic, respectively.

TABLE 2 Organizational-Level Optimization Distribution Overall and by Deployment Activity (%)

	Basic	Standardized	Rationalized	Dynamic	Total
Program management	11	35	35	18	100
Staging and logistics	18	29	43	9	100
Imaging	22	36	34	8	100
Applications	13	34	46	7	100
User data	16	33	36	15	100
Client fitness	20	34	34	12	100
Average	18	45	29	9	100

Source: IDC, 2017

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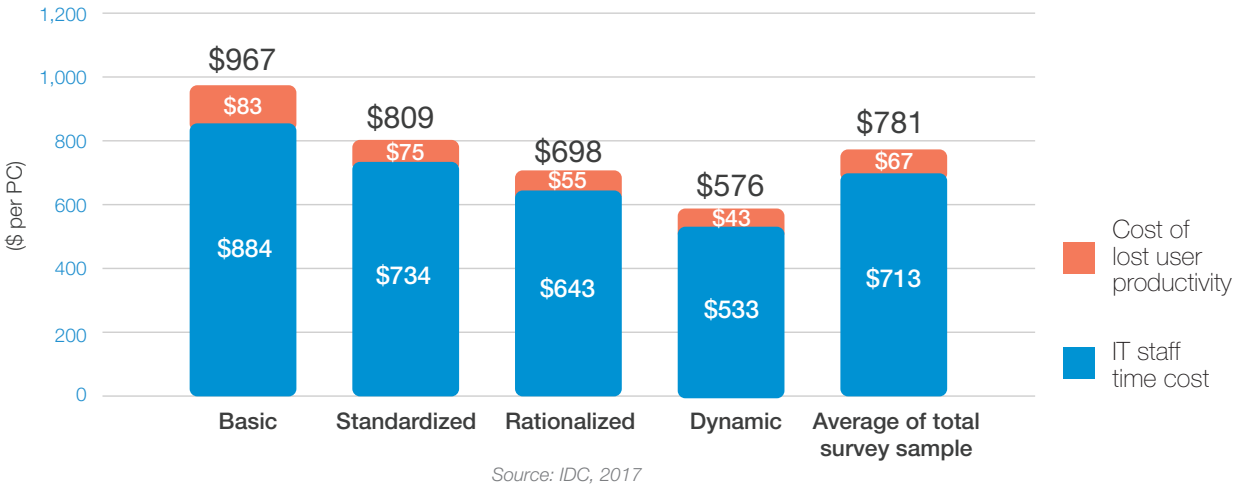
IDC's research shows that organizations that optimize the execution of more steps related to PC deployment incur much lower costs associated with IT staff time and productivity losses. These efficiencies tie back to increased use of automation, leveraging centralized processes, and being able to give users effective and secure participation and/or control over more steps in the deployment process. As a result, the PC deployment process for more optimized organizations has fewer staff touch points and is less prone to error, thereby reducing the amount of productive IT staff and employee time required to complete PC deployments.

Figure 1 shows how organizations, as they move from the more manual basic level of maturity to the more automated, process-oriented dynamic level on a weighted basis across deployment activities, reduce the cost of deploying PCs. IDC's research found that a company at the basic level incurs an average cost of $967 per PC in terms of IT staff time and lost user productivity. Companies moving to the standardized level can reduce that cost to an average of $809 per PC, which then falls further to $698 per PC for companies in the rationalized group and $576 per PC for companies in the dynamic group (with an average total cost of $781 per PC across all maturity levels). In total, this represents a 40% lower cost associated with IT staff time for companies at the dynamic level compared with companies at the basic level. This analysis is based on assessing the overall level of maturity (i.e., basic, standardized, rationalized, and dynamic) for each organization across all PC deployment activities and then assessing the average total cost of IT staff time and lost user productivity for organizations grouped within each level of maturity (refer back to the "Average" row in Table 2 for the overall split by maturity level at an organizational level). As evidenced in Figure 1, costs associated with IT staff time constitute most of the overall costs associated with PC deployment at all optimization levels, reflecting the various activities IT staff must carry out to effectively deploy PCs.

FIGURE 1 PC Deployment Cost by Organizational-Level Optimitation



Source: IDC, 2017

Note: Because of weighting and optimization groups with different numbers of organizations in each group, the total average number does not equal the average of PC deployment costs presented by organizational-level optimization in Figure 1.

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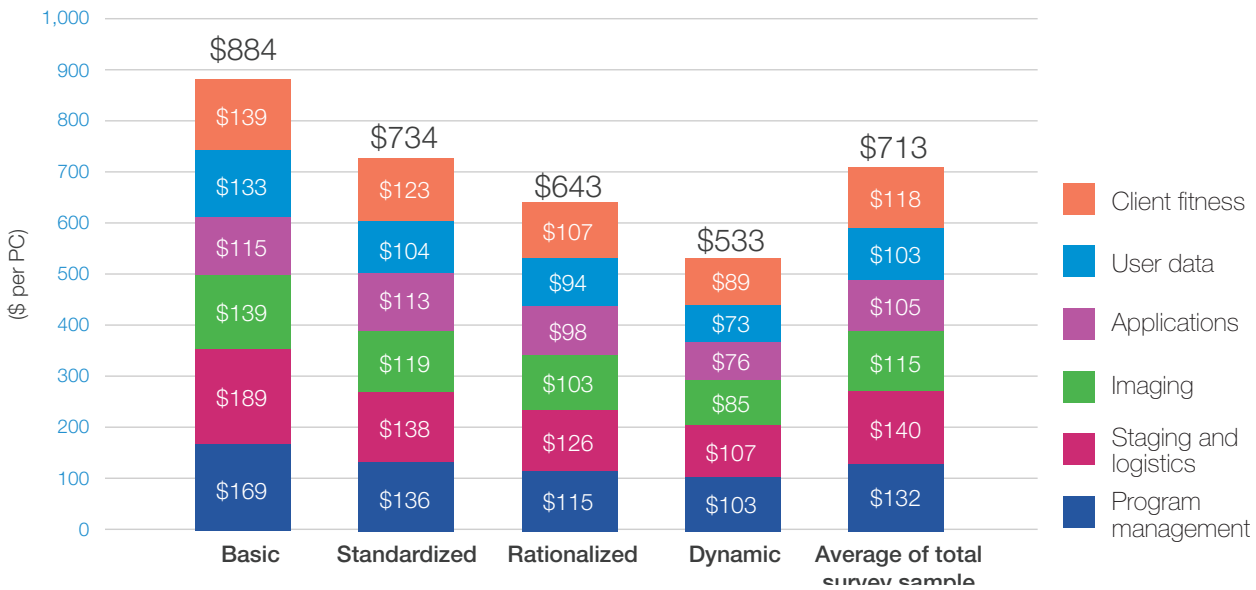
Figure 2 offers insight into the distribution of costs associated with IT staff time related to PC deployment activities covered in this study by organizational optimization level. As previously explained, this analysis is based on assessing the overall level of maturity for each organization across all PC deployment activities and determining average IT staff time costs for organizations in each category of maturity. IDC's analysis reveals both a relatively even distribution of costs associated with IT staff time for handling these activities and consistent efficiencies across activities as organizations optimize their PC deployment capabilities. Costs associated with IT staff time were 40% lower for companies at the dynamic level than for companies at the basic level ($533 per PC in the dynamic level versus $884 per PC in the basic level). This underscores the extent to which organizations can take advantage of automation, centralized processes, and greater end-user involvement to minimize the burden of delivering PCs to users.

FIGURE 2 IT staff Cost to Deploy per PC by Organizational-Level Optimization Achieved



Source: IDC, 2017

Note: Because of weighting and optimization groups with different numbers of organizations in each group, the total average number does not equal the average of PC deployment costs presented by organizational-level optimization in Figure 1.

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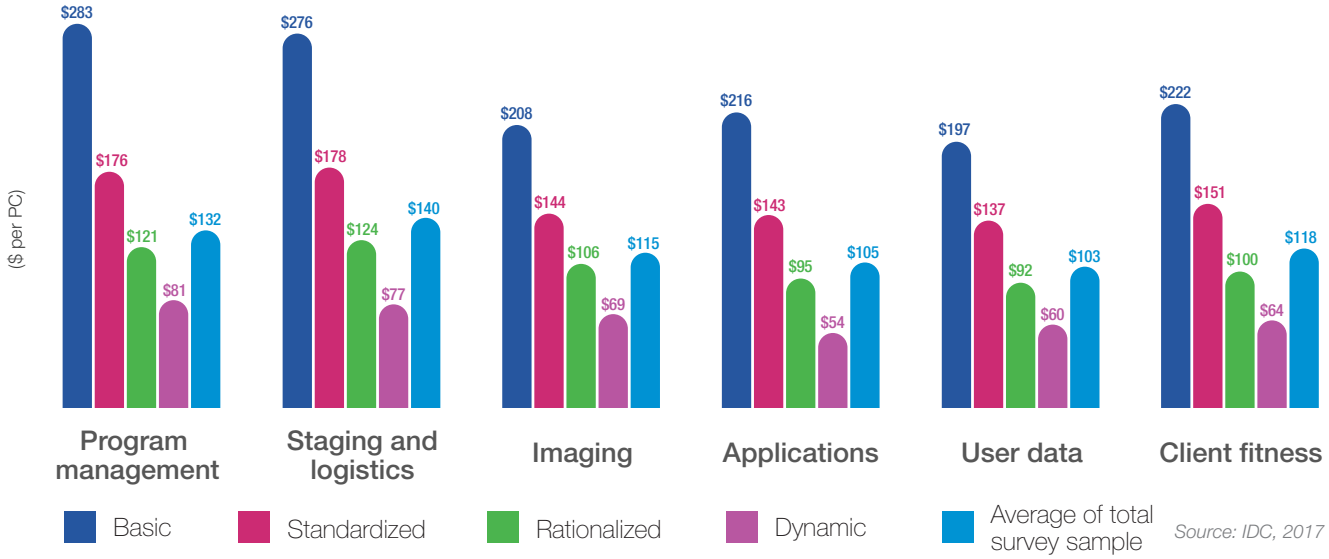
Deployment Cost Analysis by Optimization Level for Each Deployment Activity

IDC also analyzed the impact of increased optimization by deployment activity (see Figures 3 and 4). This analysis is based on assessing the level of maturity (i.e., basic, standardized, rationalized, and dynamic) for each organization for each deployment activity and then assessing the average IT staff time cost for organizations grouped within each level of maturity for each activity (refer back to Table 2 for the breakout by maturity level at a deployment activity level). This reflects the costs associated with IT staff time related to activities based on the optimization level achieved for each PC deployment activity. As such, this analysis differs from the previously discussed organizational-level analysis (refer back to Figures 1 and 2) because it does not consider overall per-company deployment costs for each survey participant.

The per-deployment activity analysis demonstrates that organizations achieve even more significant efficiencies as they optimize their processes. Figure 3 shows the extent to which leveraging automation, standardized processes, cloud-based storage, and self-service capabilities can reduce human touch points required for these activities and thus lower costs associated with IT staff time. In turn, based on averages of costs by activity, the cost associated with IT staff time related to deployment is reduced from an average of $234 per PC at the basic level to $68 per PC at the dynamic level. As a result, based on these averages, an organization that has reached the dynamic level for all six deployment activities would spend $405 for IT staff time compared with $1,402 for a company at the basic level in all activities.

FIGURE 3 IT staff Cost to Deploy per PC by Optimiztion Level Achieved per Deployment Activity



Source: IDC, 2017

Note: Because of weighting and optimization groups with different numbers of organizations in each group, the total average number does not equal the average of PC deployment costs presented by deployment activity optimization level in Figure 3.

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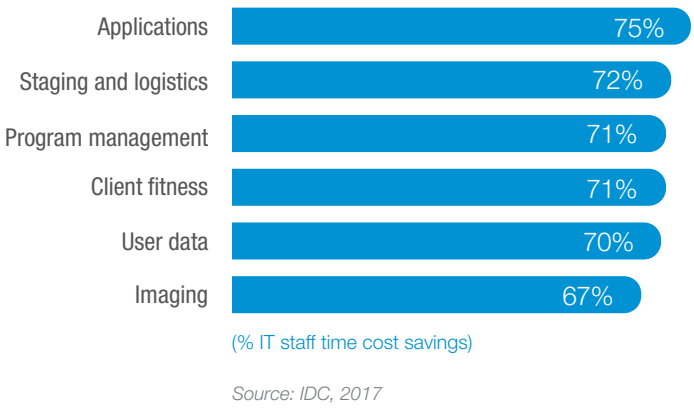
Figure 4 shows the relative cost efficiency in terms of costs associated with IT staff time as organizations move from the basic level to the dynamic level in each of the measured deployment activities. More advanced deployment practices have a noticeable impact across all activities tracked for this study, with organizations realizing cost savings associated with IT staff time ranging from 75% for application-related activities to 67% for imaging-related activities. This demonstrates the extent to which organizations benefit in these PC deployment activities by taking advantage of automation where possible and leveraging standardized and centralized processes rather than relying on siloed approaches.

FIGURE 4 IT Staff Time Cost Savings by Moving from Basic to Dynamic Optimization Level per Deployment Activity



Source: IDC, 2017

Potential Benefits of Dell ProDeploy Client Suite

To demonstrate the potential impact for an organization of adopting more streamlined and efficient deployment processes by leveraging the Dell ProDeploy Client Suite of services, IDC has created a hypothetical analysis based on the analysis presented in Figures 3 and 4. The assumptions for this analysis are:

- An organization is at the basic level for all deployment activities before beginning to use Dell ProDeploy Plus.
- An organization advances with Dell ProDeploy Plus by deployment activity to the standardized level for client fitness and user data, the rationalized level for applications, and the dynamic level for imaging, project management, and staging and logistics.

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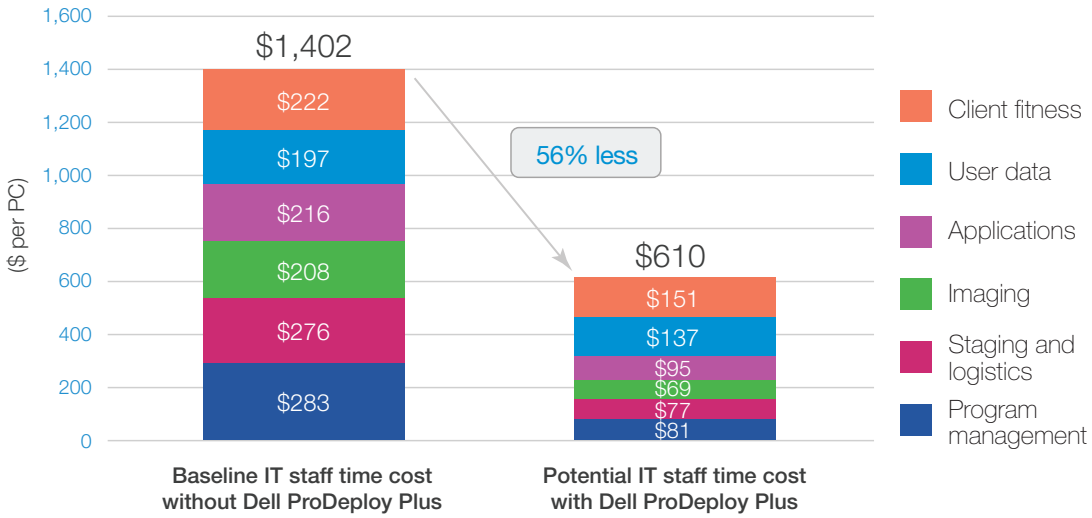
Using Dell ProDeploy Plus, an organization would potentially reduce its costs associated with IT staff time by 56%, or $792 per device (going from $1,402 per device to $610 per device, equivalent to reducing staff time from 29.9 hours to 13.0 hours) (see Figures 5 and 6). This would represent a substantial potential savings that could change the economics for this organization of device deployment, especially if these savings were to be realized across hundreds or even thousands of devices deployed per year.

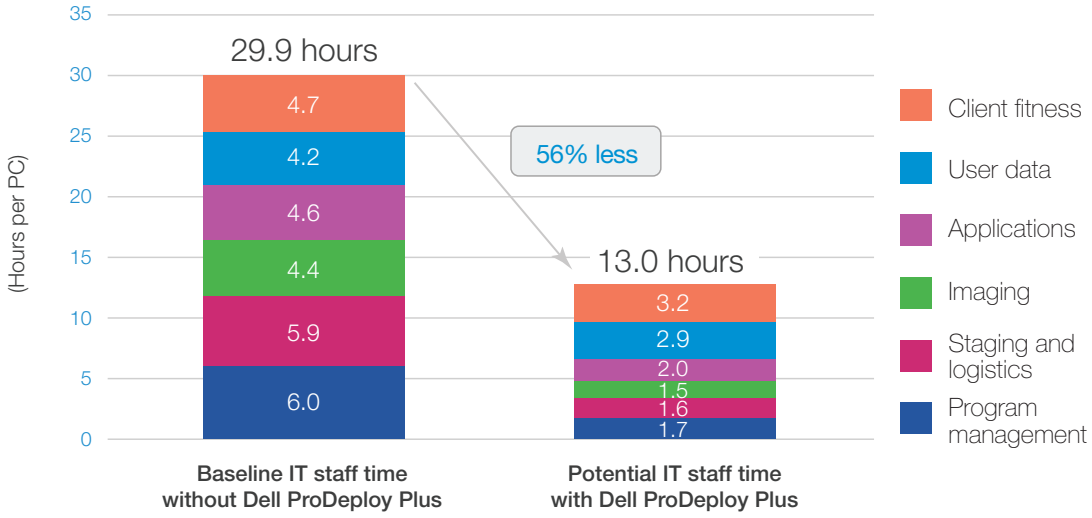
FIGURE 5 Potential IT Staff Time Cost Savings with Dell ProDeploy Plus



Source: IDC, 2017

Note: See the Potential Benefits of Dell ProDeploy Client Suite section for assumptions used for this analysis.

FIGURE 6 Potential IT Staff Time Savings with Dell ProDeploy Plus



Source: IDC, 2017

Note: See the Potential Benefits of Dell ProDeploy Client Suite section for assumptions used for this analysis.

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Deployment Cost by Organizational Optimization Level: Segmented Analysis

IDC also investigated costs associated with IT staff time for PC deployments by region and company size. Table 3 shows that the overall trend of significantly lower costs associated with IT staff time for more optimized organizations holds by both region and company size. Relative savings for companies at the dynamic level compared with companies at the basic level by region are 36% for North America and 44% for APAC and by company size 25% for companies with 100–249 employees and 52% for companies with 250–999 employees. By region, the absolute differences in costs associated with IT staff time relate back to some extent to North America having the highest average labor costs, while the differences by company size may tie back to the smallest organizations finding it more challenging to leverage automation and centralized processes to create greater efficiencies.

As shown throughout this document, the more dynamic the deployment solution a company can create, the more efficient the company becomes in delivering PCs to its end users. To that end, Dell solutions can enable customers to become more efficient and effective at delivery of PC assets.

TABLE 3 PC Deployment Costs by Organizational-Level Optimization Achieved by Region and Company Size ($)

	Region			Company Size			
	North America	EMEA	APAC	100-249 Employees	250-999 Employees	1,000+ Employees	Average (%)
Basic	997	810	680	885	748	1,036	884
Standardized	849	656	527	865	633	686	734
Rationalized	790	543	512	732	609	609	643
Dynamic	642	469	379	667	361	564	533
Average	871	664	565	807	641	720	713
Basic to dynamic (cost difference) (%)	36	42	44	25	52	46	40

Source: IDC, 2017

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Dell Solutions

Dell has developed the concept of the frictionless user experience, based on trends in what IT leaders are asking for, which include the following:

- Companies expect simplified, global, mobile, and remote deployment of PC assets.
- Companies expect that asset delivery will be flexible and have self-service capabilities.
- Companies want to eliminate end-user disruption during PC deployment.
- The experience of getting a new PC should be fun and exciting for end users.
- Utilizing a partner enables IT staff to stay focused on business improvement, not on mundane IT tasks.
- Companies want to increase internal employees' customer satisfaction with IT by providing the best user experience.

Given the efficiencies and cost savings noted throughout this document, it makes business sense to use a provider such as Dell when deploying PCs and other IT assets. IDC believes that third-party deployment services should be used to help enterprises create an easy and cost-effective deployment process. Dell's offerings can help enterprises stay focused on the most important business operational tasks and realize a cost-effective deployment strategy.

Figure 7 shows the Dell ProDeploy Suite of services. These services can help enterprises improve their PC deployment practices and move toward "dynamic" in all of the categories in the optimized deployment model.

Dell offers end-to-end deployment and life-cycle services that are designed to provide optimized deployment and optimization of PC assets. Comprehensive life-cycle services that include additional deployment, support, and asset resale and recycling services are also available. Dell's deployment and life-cycle services are managed by a highly experienced project management office, providing additional support to enterprise IT staff. The Dell ProDeploy Client Suite enables businesses to work faster and accurately and with minimal disruption to the IT staff. The process of seemingly overwhelming tasks such as data migration, data transfers, imaging, and setting changes can be done quickly and correctly when utilizing Dell's deployment services. IDC believes that the methodology used behind the deployment process proves to be strategic and cost effective for many enterprises. By employing the Dell ProDeploy Client Suite to move PC deployment practices along the maturity spectrum (progressing to standardized, rationalized, and eventually dynamic levels), IT organizations can dramatically improve the PC deployment process for their demanding end-user customers.

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For enterprises seeking further assistance to achieve "dynamic" PC deployment maturity practices, Dell provides consulting services to determine how to further optimize the deployment process. This helps customers save up to 67% and even 75% for those that are currently operating at a fully basic level.

FIGURE 7 ProDeploy Client Suite: Feature Comparison

		Basic Deployment	ProDeploy	ProDeploy Plus
Pre-deploy	Single point of contact for project mamagement	●	●	●
	Self-service portal for system configuration control and updates	●	●	●
	Deployment engineer develops implementation plan		●	●
	TSM engagement via ProSupport Plus			●
Deploy	Factory distribution point for SCCM and MDT configuration			●
	Load an ImageAssist image	●	●	●
	Load a static image: WIM, Ghost, or ISO	●	●	●
	Configure BIO settings	●	●	●
	Asset tag applied to each system	●	●	●
	Standard asset reports	●	●	●
	Onsite Installation of client systems available 24x7		●	●
	Project documentation with knowledge transfer		●	●
	User settings & data migrated to new system			●
	Data sanitization on retiring client systems			●
Post-deploy	30-day post-deployment support			●
	Training credits for Dell EMC Education Services			●

Source: Dell, 2017

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CUSTOMER INTERVIEW

IDC recently spoke with Marko Jarymovych, director of IT, and Corey Lear, IT services manager, Division of Recreation and Intercollegiate Athletics (DRIA), University of Pennsylvania, Philadelphia, Pennsylvania. The DRIA manages a complex mix of IT services across the student athletes in Intercollegiate Athletics and the entire University of Pennsylvania community of students, faculty, and staff in Recreation. The IT organization was faced with updating its processes and offerings to focus its expertise on initiatives that are specifically tailored to improve the DRIA customer experience — whether by broadcasting games and live events, making it easier for student athletes to keep up with coursework, or improving the overall student experience at the recreational facilities.

The key challenges identified by Jarymovych and Lear at the DRIA include:

- Updating the DRIA's IT governance model to focus on strategic initiatives and operations
- Prioritizing the time and resources of the IT organization to provide the right mix of IT services specifically designed for the needs of the DRIA community
- Delivering value and a superior customer experience to an inherently mobile and active customer community
- Maintaining and expanding IT services in an environment of complex physical infrastructure, with historically preserved spaces that require special attention

To help address these challenges, the DRIA wanted to establish a consistent life cycle for client computers. "We knew these services were available to us, and we were looking for a commodity service we can leverage to improve our efficiency," said Jarymovych. "Setting up client computers isn't something we do very often, but when we do, it's very time consuming and tedious. We needed a model that wouldn't disrupt our current process but would give us a more efficient way to deploy new machines for new and existing users."

The DRIA chose Dell ProDeploy Plus, and the on-premises component was a big benefit for the project. The ProDeploy Plus process helped the team standardize PC deployment with a consistent image and a consistent model throughout the process. "Working with Dell ProDeploy Plus allows us to have a dynamic image that we can update throughout the year," said Lear. "It also helped manage the data migration process and give all of our customers a 'clean start' on their machines. Now our team can focus on managing and optimizing going forward and evolving services for our customers."

The DRIA expects to work with Dell as a technology partner, as well. "We're the experts in what our Athletics and Recreation customers want, and Dell is the technology expert," said

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Jarymovych. "We need constant improvement and change management to stay current with the real needs from our end-user customers. We need to work together with our technology partners to make sure the technology is relevant to the application across our user community."

ESSENTIAL GUIDANCE

New Asset Life-Cycle and Consumption Models

With the rise of machine learning and cognitive computing, devices will become more aware — which will make intelligent asset life-cycle management more automated and simplified for users. Enterprises should make investments to take advantage of these new capabilities. Enterprises will have to consider if they should invest significantly in these initiatives themselves or if they would be better served looking for service providers with a full suite of capabilities.

Consumption models are also changing. Recent IDC data shows that companies want to procure devices in an "as a service" manner, with a monthly utility fee that incorporates hardware, software, and services. IDC expects PC as a service (PCaaS) and device as a service (DaaS) to extend this utility model across many regions and into all company sizes and verticals. These service models help reduce the enterprise's exposure and may be more cost effective than owning or leasing the asset. As straightforward as the offering sounds, there are many moving parts that need to be sorted out before an offering of this complexity can be brought to the market. Among the most critical factors from an IT supplier's perspective are the implications for sales and channel partner compensation as well as the impact on existing maintenance/support/migration service revenue streams. The offering itself is very straightforward: package the system/device with software and services for a fair (predetermined) monthly fee. Dell will be well suited to offer this service because of its robust relationship with ISVs and their services capabilities.

CHALLENGES/OPPORTUNITIES

Dell faces two challenges with its services offerings. The first challenge is convincing customers of the value — the benefits of the offerings are cost savings resulting from reduced time demands on IT staff, which customers tend to value less than "hard" cost savings. In recent years, companies have taken a broader view of value when considering the benefits of upgrading technology. With millennials in the workforce on the rise and companies looking to provide users with a better IT experience, IDC sees value shifting from not just cost savings but also

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experience-related benefits. This means that Dell will need to continue to emphasize not only IT resource efficiency but also a better overall PC experience.

Dell's second challenge is continuing to meet and exceed customer expectations. With all services offerings, if customer demand increases dramatically, providers face the risk of not being able to deliver to expectations because of a shortage of resources. Dell has positioned itself well to be able to meet this challenge by automating much of the process. This automation should be valuable if Dell can convince a wide range of customers to adopt its offerings.

CONCLUSION

When deploying assets, organizations face many technical challenges as well as significant cost issues, many of which are not readily apparent. Enabling companies to upgrade systems with less technician time invested and lower costs overall is what Dell wants to accomplish. These services help not only reduce costs but also improve the chances of a successful deployment and ensure that companies make the most of their scarce resources while adopting new systems and capabilities.

The Dell ProDeploy Client Suite is predicated on the idea that having a robust deployment strategy — backed by highly automated processes — can help organizations dramatically reduce their deployment costs and time. This is exemplified by Dell services through which customers can reduce the amount of time required to successfully deploy new PCs and use less skilled labor to conduct deployment activities. For example, IDC's analysis shows that a hypothetical Dell ProDeploy Plus customer, based on the assumptions outlined in Figure 5, could realize cost savings associated with IT staff time of 56% by reaching higher maturity levels in each deployment activity analyzed for this study.

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METHODOLOGY

The research provided in this document is based on surveys conducted in February and March 2017, with 500 organizations from North America, EMEA, and APAC. Table 4 provides the details regarding the sample's splits in terms of company size, country, region, and industry. Companies were asked for information specific to their deployment of PCs. The research was designed to test Dell's IT optimization model for PC deployment that IDC and Dell collaborated on to determine the impact of optimized practices on the cost of deploying PCs.

TABLE 4 Study Participant Firmographics

	Detail
Company Size	
100–249 employees	150
250–999 employees	200
1,000+ employees	150
Total	500
Country	
United States	200
France	50
Germany	50
United Kingdom	50
Australia	50
China	50
India	50
Total	500
Region	
North America	200
EMEA	150
APAC	150
Total	500

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TABLE 4 Study Participant Firmographics

	Detail
Industry	
Banking	35
Broadcast and communication services	20
Construction	21
Consumer and recreational services	8
Discrete manufacturing	34
Education	19
Government	16
Healthcare	24
Insurance	36
Life sciences	12
Oil and gas	11
Other	5
Process manufacturing	34
Professional services	35
Resources industries	13
Retail	42
Securities and investment services	30
Telecommunication services	16
Transportation services	24
Utilities	34
Wholesale	31
Total	500

Source: IDC, 2017

IDC quantified costs related to deployment in two ways: the cost associated with IT staff time for carrying out deployment-related activities and the cost of lost end-user productivity from deployment-related outages and other problems ("costs related to lost user productivity" throughout this study).

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IDC used the following fully loaded annual salary assumptions for quantifying the value of IT staff and user time:

- **United States:** $100,000 per year for IT staff; $70,000 per year for other users
- **Australia:** $111,000 per year for IT staff; $77,700 per year for other users
- **China:** $44,900 per year for IT staff; $31,430 per year for other users
- **India:** $44,900 per year for IT staff; $31,430 per year for other users
- **France:** $92,000 per year for IT staff; $64,400 per year for other users
- **Germany:** $95,000 per year for IT staff; $66,500 per year for other users
- **United Kingdom:** $93,000 per year for IT staff; $65,100 per year for other users

This results in weighted average fully loaded salaries across all surveyed organizations of $88,080 per year ($46.85 per hour) for IT staff and $61,656 per year ($32.80 per hour) for end users.

IDC assumes 1,880 hours of working time per year (47 weeks x 40 hours).

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

APPENDIX A: ADDITIONAL INFORMATION ABOUT ANALYSIS

The results presented in this study are based on two interconnected but separate analyses, both of which are based on the data gathered through a survey of 500 organizations about their activities surrounding the deployment of PCs.

Analysis by Organizational-Level Maturity

For this analysis, IDC assessed the overall level of maturity (i.e., basic, standardized, rationalized, and dynamic) for each organization "across all PC deployment activities" and then assessed the average total cost of IT staff time and lost user productivity for organizations grouped within each level of maturity. As such, this analysis provides the average IT staff time cost and cost of lost user productivity for organizations that have reached a certain level of maturity across evaluated deployment activities (e.g., organizations that have reached the rationalized level of maturity across all deployment activities incur an average IT staff time cost of $115 per PC deployed for program management–related activities).

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The key findings from the analysis include (refer back to Figures 1 and 2 and Table 3):

- IDC's research found that on average, a company at the basic level incurs cost of $967 per PC for IT staff time and lost user productivity. Companies moving to the standardized level can reduce that cost to an average of $809 per PC, which then falls further to $698 per PC for companies in the rationalized group and $576 per PC for companies in the dynamic group (with an average total cost of $781 per PC across all maturity levels). In total, this represents a 40% lower cost associated with IT staff time for companies at the dynamic level compared with companies at the basic level (for more details, see the Deployment Cost Analysis by Organizational Optimization Level section and refer back to Figure 1).
- IDC's analysis reveals both a relatively even distribution of costs associated with IT staff time for handling these activities and consistent efficiencies across activities as organizations optimize their PC deployment capabilities, with the IT staff time cost being 40% lower for companies at the dynamic level than that for companies at the basic level ($533 per PC in the dynamic level versus $884 per PC in the basic level (for more details, see the Deployment Cost Analysis by Organizational Optimization Level section and refer back to Figure 2).

Analysis by Activity-Level Maturity

For this analysis, IDC assessed the level of maturity (i.e., basic, standardized, rationalized, and dynamic) for each organization surveyed for each deployment activity and then calculated the average IT staff time cost for each activity within each level of maturity. As such, this provides the average IT staff time cost for organizations that have reached a certain level of maturity for each deployment activity (e.g., organizations that have reached the rationalized level of maturity for program management–related activities incur an average IT staff time cost of $121 per PC deployed).

The key findings include:

- Costs associated with IT staff time savings per deployment activity are in the range of 67–75% as organizations make advances from basic to dynamic practices (see the In This White Paper section and refer back to Figure 4).
- IDC's analysis of costs by deployment activity suggests that an organization that is assumed to use Dell ProDeploy Plus to advance from the basic level for all deployment activities and reach the standardized, rationalized, and dynamic levels for various deployment activities could reduce its costs associated with IT staff time for deployment-related activities by 56%, a potential savings of almost $800, or 17 hours of staff time per device deployed (refer back to the In This White Paper section).

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- Based on the average costs by activity, the cost associated with IT staff time related to deployment is reduced from an average of $234 per PC at the basic level to $68 per PC at the dynamic level. As a result, based on these averages, an organization that has reached the dynamic level for all six deployment activities would spend $405 for IT staff time compared with $1,402 for a company at the basic level in all activities (refer back to Figure 3).
- More advanced deployment practices have a noticeable impact across all activities tracked for this study, with organizations realizing costs associated with IT staff time savings ranging from 75% for application-related activities to 67% for imaging-related activities (refer back to Figure 4).
- Organizations that make advances with Dell ProDeploy Plus would potentially reduce their costs associated with IT staff time by 56%, or $792 per device (going from $1,402 per device to $610 per device, which is equivalent to reducing staff time from 29.9 hours to 13.0 hours) (refer back to Figures 5 and 6).

APPENDIX B: PC DEPLOYMENT ACTIVITIES

The PC deployment activities are discussed in the sections that follow, and IDC asked the survey respondents to choose the best definition for how their companies deliver each of the activities.

Program Management

For program management, survey respondents were asked whether they used centralized deployment planning or tracking and whether processes surrounding deployment status tracking were more manual or automated in nature.

Staging and Logistics

For staging and logistics, survey respondents were asked about the shipment of PCs to users and warehousing practices.

Imaging

For image loading, survey respondents were asked about when imaging was conducted in the deployment process as well as the integration of security updates in imaging.

Applications

For application loading, survey respondents were asked about the levels of automation and success of application deployment and updates and the availability of self-service.

User Data

For user-state migration, survey respondents were asked about where user data resides and how it is migrated to new PCs.

Client Fitness

For post-deployment support, survey respondents were asked about their levels of success at maintaining IT standards and their ability to protect devices, data, and identity through integrated and proactive steps.

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