Microsoft Windows 7 includes multiple enhancements that can be valuable in a variety of IT environments—including the DirectAccess feature, which is designed to simplify connectivity for mobile users; the BitLocker™ and BitLocker To Go™ features, which are designed to secure data on hard drives and removable USB drives; and the AppLocker™ feature, which is designed to provide granular control over end-user applications. Additionally, Windows 7 offers energy-saving features as well as enhanced protection against malicious software through the User Account Control (UAC) feature.

The need to replace an aging fleet of legacy client systems, the potential cost savings when using Windows 7, and the eventual end of Windows XP support mean that IT departments should begin planning their Windows 7 deployments now. Organizations still running Windows XP can expect support from Microsoft and independent software vendors to gradually decline, and Microsoft extended support for Windows XP with Service Pack 3 (SP3) is expected to end in April 2014, with no updates or patches offered after that date. Assuming a 12- to 18-month timeline to prepare for and execute a major OS migration, IT departments that do not start planning soon risk running out of time before their migration to Windows 7 is complete.

Many IT departments may not have managed a major client OS refresh in over six years. During that time, applications, user data requirements, and IT complexity have grown significantly. The good news is that automation has also improved dramatically—and that IT departments can therefore avoid the old paradigms of manual deployment or simply waiting for systems to be replaced. Both of these approaches can incur hidden costs and inefficiencies, especially if IT staff and end users must invest a significant amount of time in the deployment process.

Following best practices and automating many of the migration steps can help organizations significantly reduce the cost of a Windows 7 deployment. However, many organizations are unsure about the steps to conduct a migration and how they can achieve these deployment cost savings. For this reason, they are turning to organizations like Dell, which offer deployment services and real-world expertise that combine best practices and optimized processes.

DEPLOYMENT CHALLENGES
A large Windows 7 deployment can involve hundreds or even thousands of client systems, with some in distributed and remote locations. Ideally, the entire migration should take place within a short period of time to help minimize the cost and complexity of managing multiple client operating systems. These factors introduce challenges across multiple areas:

- **Management:** Mass client and OS deployments are outside the scope of normal operations, so organizations may not be familiar with the intricacies of these projects. In addition, collecting the asset data necessary to support planning is challenging for organizations that do not already have a systems management infrastructure in place.
FEATURE SECTION: EMPOWERING THE EFFICIENT WORKFORCE WITH WINDOWS 7

■ Staging and logistics: In many deployments, organizations must stage images and applications near the destination clients—a process that requires planning, infrastructure, and labor—and must manage the rollout to help ensure that it occurs in an orderly manner. Strong logistics, similarly, demand careful planning, scheduling, and management. Bringing in outside expertise and help can greatly increase the efficiency of these processes. For example, some methods can eliminate the need for staging altogether, thereby helping reduce cost and complexity.

■ Image installation: Organizations traditionally store images on a network and install them from there, but this approach may not be efficient for a large deployment. Synchronizing the image repositories can be an ongoing challenge, and downloading multi-gigabyte images across a network to hundreds of clients can saturate the infrastructure even at primary locations. The problem is compounded in branch offices, among remote workers, and at global locations.

■ Application installation: Creating an application inventory, resolving compatibility issues, and repackaging legacy applications are intricate processes. Determining which applications should be installed on a particular system—and validating license entitlement—can be complicated, and automating their installation is an intensive process that often requires specialized tools and expertise. All of these elements can benefit from an experienced project management organization.

■ User state migration: User data and system configurations must be carried over to the upgraded OS—otherwise, end users are likely to make frequent calls to IT staff for help in restoring settings, resulting in lost productivity and increased support demands. Migrating user settings therefore helps increase end-user satisfaction and post-deployment productivity while also helping reduce support costs. However, migrating user state data to a network share presents challenges similar to image installation, including significantly increased storage costs, the introduction of data security risks, and consumption of bandwidth needed to run day-to-day operations. Latest-generation automation tools can help ensure that user state data is migrated successfully while also helping eliminate most or all storage and network bandwidth requirements.

■ Post-deployment user support: Support incidents generally increase significantly during a deployment project. Users are unfamiliar with the new computing environment, and often need the help of support technicians before returning to normal levels of productivity.

DEPLOYMENT BEST PRACTICES

When taking these challenges into consideration, it becomes clear that client deployments can be complex, costly, and disruptive, requiring multiple labor-intensive tasks. These tasks can often benefit from automation and adherence to best practices. To help reduce the costs associated with Windows 7 deployments, accelerate project completion, and minimize risks, Dell recommends multiple practices that it has developed from its past deployment work, including those shown in Figure 1.

The Dell approach is based on four fundamental principles:

■ Project management process: Enables organizations to focus on results that meet defined goals, helping to mitigate risks and control changes in scope

■ Project management system: Helps to control and monitor governance and progress of project activities

■ Phased project approach: Helps ensure that risks and issues are identified, addressed, and reassessed at key points throughout the project

■ Project organization and responsibilities: Identifies project team members and provides a clear understanding of their roles and responsibilities in achieving project objectives

ELEMENTS OF AN OPTIMIZED DEPLOYMENT

With an optimized strategy in place, organizations next need a way to carry out the deployment. To that end, Dell Services has developed patent-pending technology and processes that automate the client provisioning process. Using these services can greatly reduce the overall costs associated with Windows 7 deployments.

The Dell Automated Deployment (DAD) solution maps to an organization’s specific requirements and is based on best practices for program and project management. DAD can perform the complex tasks that occur during a deployment, helping to minimize technician intervention and time spent on the installation.

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**Figure 1.** Dell best practices for Windows 7 deployments can help reduce costs, accelerate project completion, and minimize risks

<table>
<thead>
<tr>
<th>Process design</th>
<th>Provisioning</th>
<th>Project management</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Consolidate schedules to help increase technician efficiency</td>
<td>■ Maximize technician multitasking</td>
<td>■ Adopt a central view of the deployment and a single point of coordination</td>
</tr>
<tr>
<td>■ Deploy after normal hours to help reduce impact on the organization and enable technicians to operate efficiently</td>
<td>■ Reduce network traffic</td>
<td>■ Develop site readiness plans based on time to deployment</td>
</tr>
<tr>
<td>■ Set up exchange rooms where end users can bring laptops for upgrade</td>
<td>■ Automate manual steps</td>
<td>■ Have an on-site technical project manager</td>
</tr>
<tr>
<td>■ Determine processes for transferring user data and applications</td>
<td>■ Monitor problems in real time and track problem resolution</td>
<td>■ Communicate the plan to end users and managers</td>
</tr>
<tr>
<td>■ Provide augmented post-deployment support</td>
<td></td>
<td>■ Plan staging and logistics to help ensure adequate space is available for new systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ Manage existing user data and application migration</td>
</tr>
</tbody>
</table>

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process; for systems that are not being replaced, the need for a technician visit can be eliminated altogether. Based on each organization’s deployment objectives and guidelines, Dell can deploy an OS image, configure the OS, join the domain, install the required applications, securely migrate user data and settings, and perform other necessary tasks within a single process (see Figure 2).

Some of the key DAD design principles can enable significant cost savings through decreased use of technician labor, accelerated deployment times, little or no infrastructure investment, and simplified logistics. Specifically, DAD does the following:

- Enables multitasking through streamlined automation to help lower overall deployment costs
- Reduces network dependencies to help minimize unnecessary infrastructure costs
- Allows customization late in the process to help simplify logistics and scheduling
- Automates manual steps in the process to help ensure a high-quality process
- Migrates data and settings securely to help ensure a consistent user experience
- Supports both local and remote users
- Collects and provides access to real-time deployment data to track deployment progress and status of work still to do
- Supports in-place upgrades and migrations

The bottom line is that DAD is designed to address the most important factors that determine the success of a deployment, including the challenges related to management, staging and logistics, image installation, application installation, user state migration, and post-deployment user support. By addressing these factors, DAD helps ensure a rapid and effective adoption of Windows 7.

**COMPREHENSIVE DELL SERVICES**

Dell offers a blend of hardware, OS software, and expert services that can make planning and carrying out a Windows 7 deployment smooth and successful for IT organizations of all sizes. Refreshing legacy client systems offers a key way to deploy Windows 7 while also gaining the productivity, performance, and efficiency advantages of latest-generation hardware. The Dell line of desktop systems includes models that can deliver the power needed by high-end users as well as models that can provide cost-effective computing for typical office workers; Dell laptops, meanwhile, provide the connectivity and features needed by today’s mobile workforce.

Organizations can take advantage of Dell’s real-world experience in deploying Windows 7 using its patent-pending deployment methodologies. From its work with the Microsoft Windows Vista® OS, Dell offers a solid knowledge base about Windows migration, application compatibility, and best practices. Additionally, its partnership with Microsoft and knowledge of the business applications software market allows Dell to provide help with application compatibility testing and remediation.

Dell offers additional services that can help across all phases of a Windows 7 migration and deployment. These services cover inventory and assessment, image development and management tools and services, application compatibility testing and problem remediation, and custom factory installation services. Dell Services has also created an engagement framework for organizations that want to leverage its optimization model for Windows 7 deployment. This engagement framework is designed to speed the adoption of new technology and simplify the ongoing maintenance and support of existing technology.

Reducing the cost of deployment can help significantly reduce total cost of ownership—especially in combination with cost-saving features in Windows 7. The optimized Dell deployment strategy offers a comprehensive approach to assessing the environment, designing solutions to transform processes and technology, implementing the deployment, and managing the environment once deployed to help accelerate and simplify Windows 7 adoption.