

# DELIVERING THE MOBILE WORKSPACE

Advanced capabilities are **enabling organizations** to deliver a consistent, satisfying experience to users – on any device, in any location.

## EXECUTIVE SUMMARY

Simply supporting mobility is no longer enough.

While organizations in most industries must incorporate mobile devices and applications into their operations to stay competitive, basic mobility deployments are not sufficient to create a competitive edge. Giving users access to email, calendar and a handful of productivity apps on their mobile devices was once a differentiator, but organizations are increasingly shifting toward true “business mobility,” a model characterized by moving core business processes to mobile apps and devices.

To support this next level of mobility, technology developers have begun offering end-user computing suites. Also known as “digital workspaces” or “mobile workspaces,” these bundled solutions bring the desktop and mobile environments together, creating a seamless end-user experience that combines the enhanced productivity of mobility with many of the security and management advantages of traditional computing.

This new model of end-user computing promises to help organizations transform the way they do business, overcome their operational challenges and achieve their mission objectives in new and innovative ways.

## What Is End-User Computing?

Over the past decade, mobile devices and apps have changed the IT landscape. Across virtually all industries, organizations are now equipping users with smartphones and tablets to boost their productivity, and enterprises that were once hesitant to invest in mobile solutions are now scrambling to catch up. But often, these organizations find that the landscape is shifting again, from one where IT departments support only the very basics of mobility for their users to one where enterprises incorporate mobility into everything they do.

In its November 2015 "State of Business Mobility" report, VMware outlines three levels of mobile maturity. At the first level, "individual productivity," organizations give their users access to basic productivity applications via mobile devices. Eighty-five percent of organizations, according to VMware surveys, have implemented this basic level of mobility. The next step, "team productivity," involves new forms of applications and services to empower teams as well as to increase collaboration and communication at the group level via mobile devices and virtual desktop infrastructure (VDI). This second step represents an improvement, but still does not take advantage of all the benefits that mobile technology has to offer.

To unlock these benefits, organizations must reach the third and final step of mobile evolution, which VMware refers to as "business mobility." This step, which the report calls the "ultimate goal" for organizations looking to leverage mobile solutions to make themselves more competitive, is characterized by shifting core business processes and operations to a mobile model. According to the report, this level of transformation "holds the greatest potential to make an organization more competitive, and thus more successful," but only 20 percent of organizations have successfully made this transition. Things are quickly changing, however. Nearly two-thirds of surveyed companies reported that they are re-engineering or have plans to re-engineer a core process to achieve business mobility.

As mobile deployments have evolved, so too have solutions for managing mobility resources. In recent years, the mobile

# 20% to 55%

The percentage increase in user productivity that can result from working remotely<sup>1</sup>

computing industry has moved from mobile device management (MDM) to enterprise mobility management (EMM) solutions, giving organizations greater control over the applications and content they deliver via mobile devices. End-user computing is the next step in this evolution. This approach not only helps organizations manage mobile devices, apps and content, but also does so in a way that is designed to optimize the end-user experience. The goal of end-user computing solutions is to give users a consistent computing experience across their entire range of devices, so that users are just as productive from remote locations as they are sitting at their desktops. At the same time, these solutions are designed to simplify management for the enterprise and tighten security. Essentially, a good end-user computing solution multiplies the benefits of mobility while also reducing risks and drawbacks.

New solutions are needed to manage and support increasingly complex mobility deployments. For all of the benefits of mobile devices and apps, mobility also creates a number of challenges for IT departments, many of which revolve around information security. Organizations also struggle with basic mobile management issues, such as how to deliver mobile applications and authenticate users. The presence of legacy applications within many organizations further complicates

## EUC and BYOD

Bring-your-own-device programs are attractive to both users and enterprises for a number of reasons. Users enjoy working with the devices that are the most familiar to them, and they appreciate not having to carry around both personal and work devices. Enterprises see both cost and productivity benefits, as BYOD initiatives boost efficiency with a minimal impact on IT budgets.

However, BYOD presents several challenges around management, security and privacy. Organizations often struggle to support multiple device types and operating systems, and they have understandable concerns about sensitive data residing on user devices. At the same time,

workers bristle at mobile device management solutions that give enterprise IT staff access to their personal data.

Mobile workspace solutions pave the path to BYOD by allowing users to employ their personal devices to access enterprise apps and data, without requiring that those resources reside on the devices themselves.

"If you have employees coming in with who-knows-what device, there are all sorts of infinite configurations," says Dan Cote, a product marketing director at Citrix. "Having a virtual environment that will run on any of those BYOD devices ensures a consistency of experience, and you're also securing the apps accessed by those devices."



matters, as these applications often prove difficult to optimize for mobile devices (while simply keeping them tied exclusively to desktops does little to enhance productivity). Users have their own concerns, especially regarding privacy issues that crop up when organizations deploy mobile management tools that allow them to track their workers' movements through GPS, or even erase workers' personal data. The ability to overcome these hurdles is often what separates the large number of organizations supporting "individual productivity" via mobile devices and apps from the small minority achieving true "business mobility."

End-user computing solutions help solve these problems by bringing together management, security, virtualization and authentication tools in one cohesive system. This process allows enterprises to create an efficient, effective and satisfying experience for users, no matter what device they are using, while at the same time giving IT departments the level of control they need to ensure that mobile deployments deliver value to the enterprise and protect sensitive data. Instead of piecing together sometimes incompatible tools, organizations with end-to-end mobile workspace solutions can securely deliver apps to their users, grant single sign-on access based on user role, support apps on a variety of devices and operating systems, and prevent data breaches.

### The Essential Components of the Workspace

To facilitate a computing environment that enables users to work seamlessly across devices and truly leverage the power of mobile devices and apps, organizations must bring together a number of different technologies and capabilities. Any comprehensive mobile workspace solution will include these essential components:

#### Application Delivery

Giving users access to the applications they need to do their jobs — in a secure and manageable fashion — is, in essence, the

entire point of end-user computing solutions. All of the work and expense associated with networking, device deployment and mobility management is undertaken with the goal of giving users the resources they need to be more productive and efficient on a day-to-day basis.

Delivering these resources to users creates a number of challenges, however, which mobile workspace solutions are designed to overcome. Data security, access controls, and device and application management are significant hurdles. So, too, is application compatibility, especially in BYOD environments. With users attempting to access enterprise apps via a host of different device types and operating systems, IT shops must find a way to deliver these apps without compromising usability.

Legacy apps, many of which have been used for years in desktop-only environments, create a special challenge. While organizations often lack the resources to rewrite these applications for a mobile environment, many still seek ways to provide mobile users with access to them.

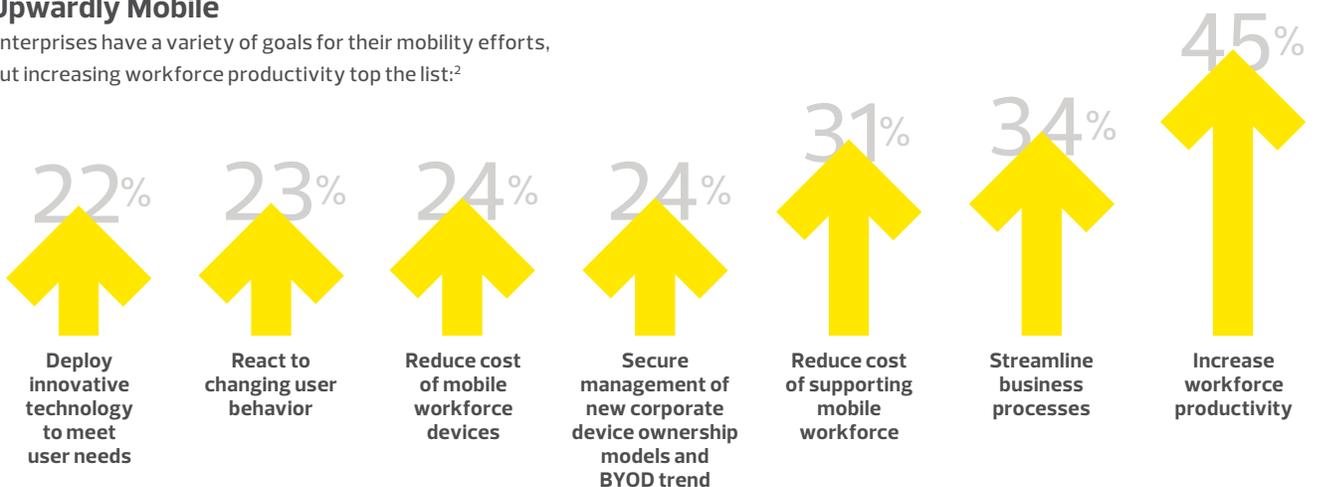
#### Client Virtualization

For years, enterprises have used client virtualization to reduce costs, improve security, boost efficiency, enhance compliance and bolster business continuity. Client virtualization solutions place users' desktops on virtual machines housed on centralized servers, separating them from the PC hardware where they have traditionally resided. This allows users to access their desktops from multiple physical locations.

In addition to enabling user access, client virtualization simplifies management for IT shops, allowing them to set up new desktops in a matter of minutes and instantly push out software updates and security patches. Because of these benefits, client virtualization has become increasingly common in enterprise computing environments. In a 2015 survey of 190 IT professionals, TechTarget found that 78 percent of respondents were planning to implement virtual desktop infrastructure.

### Upwardly Mobile

Enterprises have a variety of goals for their mobility efforts, but increasing workforce productivity top the list:<sup>2</sup>



While many organizations benefited from VDI even before the recent boom in mobile devices, mobility multiplies the advantages of client virtualization. Because desktop images are stored in the data center, IT staff is required to support only a single operating system, and users can access the same desktop images on tablets that they would on a high-end desktop machine. Challenges associated with VDI include high licensing costs, deployment and management complexity, and the requirement that users be connected to the data center, usually via the Internet. Also, VDI is often impractical for use with small screens, or with devices that lack a mouse or other pointing device.

### Application Virtualization

While desktop virtualization allows users to access their complete desktop image from anywhere, this level of access might not be necessary or even desirable for every user or every use case. In many instances, users simply need access to specific applications. Allowing users to download apps to their own devices is a simple solution, but it can create management and security problems. Application virtualization allows enterprises to avoid these problems by keeping apps, and the data associated with them, from residing on individual devices.

This model has obvious security benefits, and also allows

IT shops to minimize operating system (OS) integration issues. Application virtualization is not without its challenges, however. Not all applications can be virtualized with traditional application virtualization solutions. Also, while application virtualization

typically saves time on OS integration testing, organizations often end up spending extra time on functional testing, especially to ensure application-to-application communication and functionality.

In an October 2015 report, Gartner outlined two application virtualization trends. First, software vendors in the application virtualization space are focusing on delivering applications that are secure, regardless of device location and in a manner that is compatible with both centralized delivery architectures and hosted services. Second, application layering and the use of filter drivers are helping to remove compatibility obstacles,

while retaining management and delivery benefits.

### Server Virtualization

Enterprises have made a common practice of maximizing resource efficiency by dividing individual physical servers into multiple isolated virtual environments. Organizations deploying mobile workspace solutions are no exception.

Three popular approaches to server virtualization include the virtual machine model, the paravirtual machine model and OS layer virtualization. The virtual machine model, which is used by VMware, allows guest OSs to run on a virtual imitation of the hardware layer without modifications. In the paravirtual machine approach, the guest OS's code is modified to allow a virtual machine monitor (VMM) to sparingly utilize privileged systems. In virtualization at the OS level, hosts export operating system functionality to guests.

### Enterprise Mobility Management

Over time, MDM has evolved into EMM. This newer approach incorporates MDM functionality, but also includes capabilities centered around mobile application management (MAM) and mobile content management (MCM). As more business processes have shifted to mobile devices and applications, EMM solutions have become increasingly significant, as they give IT staff visibility into and control over how enterprise data is accessed and stored.

EMM capabilities are important not only for giving users initial access to applications and mobile content, but also for revoking this access when devices are lost or stolen, or when users leave the organization. While some early mobility management tools made it difficult for organizations to erase enterprise information on personal devices without also affecting personal data, today's EMM solutions allow IT shops to remotely wipe enterprise data



The percentage of IT professionals who plan to implement application virtualization<sup>3</sup>

### Networking for EUC

Mobile workspace solutions thrive in organizations with a networking infrastructure that is optimized for mobility.

Networking vendors provide the switching and routing capabilities to support mobile deployments, as well as state-of-the-art 802.11ac Wave 2 wireless access points. Many manufacturers also offer network management and visibility solutions, as well as identity and access management tools and app and content management systems.

These networking tools allow organizations to create environments in which mobile workspaces can thrive. Some enterprises are using network visibility tools to help them optimize real estate, and others are using network management tools to proactively seek out connectivity problems and fix them before they affect users.



alone — and even prevent this data from residing on personal devices in the first place.

### Identity and Access Management

Gartner defines identity and access management (IAM) as “the security discipline that enables the right individuals to access the right resources at the right times for the right reasons.” It’s no mistake that this definition repeats the word “right” four times. While just giving users access to mobile applications and content can be a simple task, IAM tools are needed to ensure that this access is given to users only on an as-needed basis (and to give enterprise IT shops visibility and control over this access).

Increasingly, IAM tools are also enabling single sign-on for users, allowing them to access all of the applications for which they are authorized, while requiring them to sign in only once.

### Data Security

The importance of protecting sensitive enterprise data is paramount, especially in highly regulated fields such as healthcare, finance and education. In fact, concerns about data security have led many organizations to delay mobile adoption for years. Eschewing mobile solutions is no longer an option for most organizations. But data security remains essential, and must be a top consideration in any mobile workspace solution.

## Workspace à la Carte

While several vendors offer integrated mobile workspace suites, enterprises can still mix and match products and capabilities in a way that best suits their needs.

This à la carte approach offers both benefits and drawbacks, says Robert Young, research director for IT Service Management and Client Virtualization Software at IDC.

Vendors typically give organizations a price break when they purchase solutions as part of a bundled suite, he says, and getting everything from one vendor minimizes the risk of interoperability issues. “If you go with one vendor, when they do an upgrade, the chances are better that it will work together with other products in the workspace,” he says.

However, Young notes that some small and midsized organizations might not be able to afford an entire mobile workspace suite. Other organizations may already be running different mobile workspace solutions from multiple vendors and not want to switch.

“There are some challenges with doing it piecemeal,” Young says. “It’s something that has to be thought out really well: What does my existing environment look like? What tools do I already have? Where do I want to host these desktops? There’s a lot to think about.”



## Integrating End-User Capabilities into a Solution

While some organizations cobble together mobile workspace environments using stand-alone tools from multiple vendors, many prefer to work with a single supplier to meet their end-user computing needs. VMware, Citrix and Microsoft offer bundled, end-to-end solution suites that incorporate elements such as virtualization, EMM and IAM into one cohesive system.

### VMware Workspace ONE

VMware’s mobile workspace suite brings together VMware AirWatch (an EMM solution) and VMware Identity Manager (an IAM tool), along with VMware Horizon 7, a cloud management program that delivers virtual desktops and customizes the user experience for different devices and OSs.

AirWatch enables IT shops to enforce policies and gain insight into their mobile deployments with a centralized management dashboard, giving real-time device information by platform, enrollment history and compliance status. Identity Manager delivers single sign-on and self-service app stores, and allows organizations to aggregate cloud software, native mobile apps and Windows 10 apps into a single catalog. And Horizon 7 gives enterprises deployment flexibility, allowing them to choose the right combination of dedicated desktops, shared desktops and hosted apps to meet the needs of the organization.

Workspace ONE was designed to be delivered with a cloud-first approach but also can be hosted on-premises. Rather than enrolling personal mobile devices in an MDM system, users download the Workspace ONE app from the Apple App Store, Google Play or Microsoft Store, and then log in to gain access to applications based on the policies set for those apps. The suite is licensed on a per-user basis, either through annual cloud subscriptions or perpetual on-premises licenses. VMware recommends the suite for a number of use cases, including organizations seeking to create an enterprise app store, better manage Windows 10, accelerate Office 365 rollouts or support BYOD programs.

### Citrix Workspace Suite

Citrix’s mobile workspace solution brings together a number of stand-alone tools to give users all-device access to the apps, data and desktops they need. Users working from home on a personal tablet, for example, can use Citrix to access their desktops (fully optimized for mobile devices), access individual apps or launch a secure email client. The email client opens attachments via a built-in secure viewer, rather than downloading files to the device, preventing sensitive documents from being stored on tablets and smartphones that are vulnerable to loss and theft.

Included in the Citrix suite are tools such as XenApp and XenDesktop, which allow organizations to securely deliver virtual apps and desktops to user devices. The XenMobile EMM suite allows IT teams to manage Windows, iOS and Android devices from a single platform, and configure shared devices for multiple users. It includes apps for email, calendar, note taking, document

editing and remote desktop access. ShareFile Enterprise, a secure enterprise file synchronization and sharing service, gives users data services across all enterprise and personal mobile devices. And NetScaler Unified Gateway provides a secure, cost-effective solution for remote access.

### Microsoft Enterprise Mobility Suite

In addition to other tools that support mobile workspaces — such as Surface tablets and other mobile devices, as well as Office 365 (the cloud software suite that gives users access to document sharing, video messaging, online storage, email and popular Office apps such as Word and Excel across all of their devices) — Microsoft offers the Enterprise Mobility Suite (EMS) to better enable end-user computing. This suite includes solutions such as Microsoft Intune, Azure Active Directory Premium and Azure Rights Management.

Intune provides MDM, MAM and PC management capabilities from the cloud and is designed to provide users access to enterprise applications and data from anywhere and on almost any device, while keeping information secure. Its capabilities include bulk device enrollment, secure document viewing and automatic deployment of profiles for certificates, Wi-Fi, virtual private networking and email.

Azure Active Directory Premium provides single sign-on access to thousands of cloud applications such as Box, Salesforce and Google Apps, as well as on-premises web apps. The tool manages authentication for all devices and applications and features multifactor authentication, holistic security reports, audits, alerts and access control based on device health, user location and identity.

The Azure Rights Management System (RMS) provides data protection at the file level. This tool allows IT administrators to set policies that dictate who has permission to access data, both within and outside of the organization, and enables encryption of files both at rest and in transit.

### Real-World Workspaces

While the cost, productivity and efficiency benefits of mobile computing in general — and mobile workspaces in particular — are very real, they can also seem a bit abstract. However, real-life case studies help illustrate the tangible benefits that enabling robust mobile access to IT resources can provide across a variety of industries.

#### Breakthru Beverage Group

A New York-based distributor of alcoholic and nonalcoholic beverages, the Breakthru Beverage Group, formerly Charmer Sunbelt Group, deployed tablets to a 2,200-person sales force to phase out a cumbersome, paper-based sales process. But first,

the company worked with a developer to create a custom mobile app that integrated five back-end systems. Before the mobility deployment, users arrived at sales calls with a 500-page binder full of product sheets for customers to flip through, and they used notebook computers to submit orders. Because inventory information wasn't updated in real time, sales staff could never be certain that the products ordered by customers were in stock, and the process was plagued by errors.

The new app, which allows sales team members to instantly pull up product sheets and access inventory data, has increased the company's fulfillment accuracy to 99.6 percent. The mobile deployment "makes it easier because you have everything at your fingertips," a member of the company's sales staff said.

#### Junior Achievement

In 2014, Junior Achievement USA, a nonprofit organization dedicated to educating K–12 students about workforce readiness, entrepreneurship and financial literacy, decided to shift one of its most popular programs to a mobile model. The program, called JA Finance Park, gives students hands-on experience creating personal budgets and making personal finance decisions. But the existing pencil-and-paper processes were leading students to focus more on math problems than

on the larger lessons about how financial decisions could affect their cash flow and lifestyle.

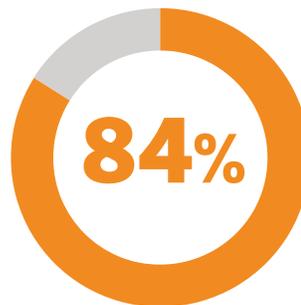
"We saw that technology could help enable a deeper conversation and critical-thinking and problem-solving skills," said Sharon Lents, a vice president at the organization. Junior Achievement developed a custom app that improved on the existing budget simulation exercise, allowing students to create avatars and see full-color pictures of cars and houses available for "purchase."

The app runs on Apple iPad devices and Samsung Galaxy tablets, and integrates with a cloud-based content management system

that stores information on digital personas that students can adopt, along with data on jobs, salaries, house prices, taxes, insurance and other budget considerations.

#### Tenneco

Before deploying iPad Air tablets from Apple, auto parts company Tenneco sent its sales representatives into the field armed with paper brochures. Often, this left them unable to answer product questions in real time, and they would have to respond to inquiries at the end of a business day, after they returned to their home office. The tablets, which connect directly to the company's customer relationship management (CRM) system, allow sales reps to access the product database, answer inventory questions and troubleshoot installation issues immediately.



The percentage of users who employ a mobile device during the work day<sup>4</sup>

"They no longer have to call back later with answers," said Susan Keshen, a business analyst for Tenneco's aftermarket sales automation group. "That's made a huge difference. Our customers are impressed." The tablets also save time and money by allowing sales staff to take pictures or videos of problems that customers are having with specific parts, and then email those files to the company's technical support department, rather than shipping parts back to the company. Additionally, the iPads are saving Tenneco \$10,000 a year in paper and ink.

### Jail Education Solutions

In 2014, Chicago-based Jail Education Solutions developed a tablet learning app called Edovo to help with programs to educate

inmates incarcerated in local jails. The company previously had tried to bring educational content to prisoners via television, but deployed tablets to improve efforts to track progress and provide individualized learning.

Under the original model, as many as 60 inmates would gather around a single 32-inch television screen, and often inmates couldn't even hear the learning content due to background noise. The Edovo app provides educational videos, reading material and audio lessons. Inmates can take courses in K-12 subjects, introductory college classes and nonacademic courses on topics such as parenting and the legal system. Jail Education Solutions uses AirWatch to secure devices and ensure that prisoners can't tap into wireless Internet connections or text or email each other on the devices.

## How Mobility Is Changing the Workplace



According to Citrix's "[2020 Technology Landscape Report](#)," numerous forces are driving workplace change. These factors highlight the need for mobility programs that allow users to boost their productivity and work from anywhere.

**Infotoxification:** Currently, as much as 30 percent of work time is spent on email, and some studies show that between a quarter and half of that time might be wasted. Better tools, including mobile apps, will be required to prevent workers from feeling overwhelmed with information (or, *infotoxicated*).

**Freelancing:** By 2020, 40 percent of the U.S. workforce is expected to be freelance. This creates challenges regarding access and security.

**Remote and flex work:** Approximately half of the U.S. workforce will be remote by 2020, and employers are increasingly implementing flexible work policies, such as allowing users to work four days per week instead of five, or giving them unlimited paid leave in outcome-based work environments.

**Productivity:** Interruptions and nonessential meetings cost users dozens of productive hours each month. Initiatives supported by mobility offer the ability to recapture some of that time and boost productivity.

Some observers believe mobility will drive a transformation of the way users conduct their work, enabling them to increase productivity, even from nontraditional workplaces such as home, customer locations or partner sites. Indeed, many users find an office environment (where they face interruptions and distractions) to hamper productivity. Users prefer to work where they can get the most done.

### Dowling Aaron

Attorneys at Dowling Aaron, a law firm based in Fresno, Calif., need to be able to connect to the office at all hours, whether they're working a case at a courthouse or catching up from home in the evening. Because users need access to highly confidential client information, management and security concerns are paramount. The firm issues desktop and notebook computers to its lawyers, but has also supported a BYOD program for years, with attorneys using Apple iPhones, Android smartphones and — increasingly — tablets to connect to corporate resources.

Security concerns became even more acute in 2011 when one attorney lost his personal tablet. At the time, the firm was using an email synchronization app to wipe devices remotely, but the performance was inconsistent. To gain more granular control, including the ability to erase corporate information on personal devices without removing users' own apps and data, the firm adopted AirWatch. "You don't know how much in future fees you may have lost if you are on the front page of the paper because of a data breach," said Darin Adcock, the firm's IT director. "It could be \$100,000 or \$1 million. More important is the impact on your reputation. You can't put a price on that."

### Senior Health

Many providers of healthcare to senior citizens are looking to wearable devices to help them manage and improve the health of the people with whom they work. Wearables can give these providers (and their patients) information about heart rates, exercise levels, nutrition and other wellness indicators in real time. Coupled with cloud-based analytics programs, data produced by wearable devices can reveal trends about patient health and enable doctors to detect problems earlier.

Masonicare, a nonprofit provider of senior healthcare and living facilities in Connecticut, deployed a cloud-based suite of wireless monitors, environmental sensors and applications to manage the health and wellness of seniors in its care in 2014. The system supports an array of services, including devices that can monitor residents' vital signs and alert staff if residents need assistance.

## CDW: A Mobility Partner That Gets IT

Users and customers expect easy access to the information they need, when and where they need it, on any device they choose. IT departments must deliver this information securely, and without hampering productivity. Armed with the deep knowledge that comes from helping numerous organizations across a variety of industries to implement business mobility, CDW's mobility experts can provide valuable expertise on all facets of mobile computing, including:

**Mobile devices:** Organizations working with CDW can choose from a wide selection of iOS, Android and Windows devices. CDW's mobility experts help enterprises hand-pick smartphones and tablets equipped with the feature sets they need, and can also simplify deployment and integration with services around activation, custom configuration and warranties.

**Management and security:** CDW's experts help organizations select and deploy the right tools to manage and secure endpoints, applications and data, enabling users to be more productive without putting organizations at risk.

**Applications:** Whether an organization is deploying off-the-shelf applications, developing custom apps or virtualizing legacy applications, CDW's experts can ensure that these apps deliver security, efficiency and an excellent user experience.

**Mobility partners:** CDW works with the industry's leading hardware and software vendors, giving enterprises unparalleled choice in selecting, deploying and managing mobility solutions.

## The CDW Approach



### ASSESS

Evaluate business objectives, technology environments and processes; identify opportunities for performance improvements and cost savings.



### DESIGN

Recommend relevant technologies and services; document technical architecture, deployment plans, "measures of success," budgets and timelines.



### DEPLOY

Assist with product fulfillment, configuration, broad-scale implementation, integration and training.



### MANAGE

Proactively monitor systems to ensure technology is running as intended and provide support when and how you need it.

➔ **To learn more about CDW's solutions and services to simplify mobile management and security, visit [CDW.com/mobility](http://CDW.com/mobility).**

## You and CDW



VMware® AirWatch® is a leader in enterprise mobility management (EMM). Airwatch enables end users with a seamless digital workspace, and empowers IT with a future-proof mobility platform that provides flexibility to manage multiple use cases, unified management of endpoints, end-to-end security, and seamless integration across enterprise systems.

The information is provided for informational purposes. It is believed to be accurate but could contain errors. CDW does not intend to make any warranties, express or implied, about the products, services, or information that is discussed. CDW®, CDW-G® and PEOPLE WHO GET IT™ are registered trademarks of CDW LLC.

All other trademarks and registered trademarks are the sole property of their respective owners.

Together we strive for perfection. ISO 9001:2000 certified

MKT11669—7/19—©2016 CDW LLC

