



The Power of User Virtualization: Meeting Meaningful Use, Optimizing IT and Clinical Productivity

Although historically the healthcare industry has been slow to embrace information technology (IT), electronic health record (EHR) adoption has been steadily rising. Since the passage of the HITECH Act under the American Recovery and Reinvestment Act (ARRA) of 2009, however, EHR implementation has spiked, thanks to the federal stimulus funding for the “meaningful use” of certified EHR technology under the Medicare and Medicaid EHR Incentive Program.

Hospitals and health systems face many challenges on the road to achieving meaningful use of EHRs. IT investments can run into the millions. The timeframe for meeting meaningful use requirements is tight – from 2011 to the end of 2015. After 2015, Medicare eligible hospitals and critical access hospitals (CAHs) that do not demonstrate meaningful use will face Medicare reimbursement penalties. Healthcare providers are already burdened by workforce shortages, an aging population, an increase in multiple chronic diseases, healthcare reform that promises to bring millions of new patients into the system, reimbursement cuts and a spike in uncompensated care, as well as pressure to participate in new care delivery and payment models.

The Value of User Virtualization in Healthcare

Limited budgets and workforce are forcing healthcare IT departments to deliver operational efficiencies as they implement and upgrade healthcare IT systems and applications under rigid federal deadlines. Virtualization – the creation of a virtual rather than an actual version of something, whether it is of hardware, software, storage, data, memory or network – is enabling healthcare IT departments to improve scalability and workloads while driving down IT costs, just as it has done for many vertical industries for years. User virtualization, however, is the next evolution of virtualization.

User virtualization enables all aspects of a user, whether a clinician, IT manager or administrator, to be stored and managed independent of the accessing device. “This means that regardless of the device used (PC, netbook, iPad, tablet, PDA, and so on), the user experience is seamless, predictable, responsive and secure,” said Jason McGeough, regional manager for AppSense, the leading provider of enterprise user virtualization solutions. In healthcare, “you’re making sure the doctor is getting their information and applications in their work environment as fast and as consistently as possible,” he said. “User virtualization makes this possible, enabling people to use combinations of different devices and technologies, with their digital ‘personality’ following them across devices.”



“If you don’t have a good user virtualization platform – if physicians don’t have the same user settings from their PC to the thin client – all the different types of virtualization projects will fail because the user experience isn’t there.”

*Landon Winburn, Technical Solutions Architect
AppSense*

regardless of connection, desktop platform, delivery mechanism, location or device, has been the Achilles heel of many desktop virtualization solutions - until the introduction of AppSense’s user virtualization technology,” claims Roy Illsley, principal analyst for industry analyst firm Ovum. “AppSense is the first vendor to solve personalization of employee applications, a huge requirement for most users,” he said.¹ “By operating as a layer above core desktop virtualization technologies as well as across physical, shared server-based and cloud delivered desktops, user virtualization becomes the central node where desktop strategy is controlled.”

Meeting Meaningful Use

Kaweah Delta Health Care District (KDHCD), a healthcare provider based in Visalia, Calif., deployed the AppSense User Virtualization Platform to address both the improvement of its patient care and IT operational efficiency, according to Stephen Carnes, IT administrator – Server/Virtualization. When it comes to EHR implementation, “user virtualization absolutely helps with meeting meaningful use,” he said. For KDHCD, meaningful use means better outcomes and patient satisfaction, he said.

The healthcare provider had deployed thin clients managed with Citrix Systems’ solution for virtualizing applications, but

This is what makes user virtualization so critical to driving physician adoption of EHRs, said Landon Winburn, technical solutions architect at AppSense. “If you don’t adopt a user-centric approach to desktop management – if physicians don’t have the same user settings from their PC to the thin client to their mobile device – all other virtualization projects will ultimately fail or stall because the user experience isn’t there. User virtualization is the key that makes the thin client or the virtual environment feel just like the physician’s desktop environment,” he said.

“The ability to separate user from desktop and application, and house and manage all user-related information via a user virtualization platform to enable a ‘managed user experience,’

1. Roy Illsley, *AppSense User Virtualisation Platform* (Ovum Technology Audit, January 2011)

there was no way to customize the applications, he said. The implementation of the AppSense User Virtualization Platform allowed physicians to roam from desktop to home and office, without a change in their environment. Regardless of the device, physicians have the same experience. “The standardized environment allowed customization, which provides a better experience for the physician and the patient, and greater user and patient satisfaction,” Carnes said. “You can have any backend – Citrix, VMware or Microsoft – but that core piece – user virtualization – is central to tying the experience to the standardized interface to make physicians feel comfortable anywhere any time.”

User virtualization also helps hospitals and health systems comply with privacy and security mandates. The HITECH Act increased Health Insurance Portability and Accountability Act’s (HIPAA) data privacy and security requirements, and ensuring adequate privacy and security protections for personal health information is a Stage 1 meaningful use criterion for eligible hospitals and CAHs. With user virtualization, IT directors can control settings for application entitlement, thus users only have access to the applications they are given rights to and only have access to the applications from the endpoint or locations to which they’re assigned. For example, a user may only have access to the EHR application on the hospital laptop but not from his or her home computer. IT directors can also assign specific printers to users logged on to specific devices, ensuring that users don’t print patient information to the wrong printer or location, or to a printer in an unsecured area. “We can control any type of situation,” said Carnes. “To allow customization but have control over it is critical. The (AppSense) User Virtualization Platform is key to KDHC’s success of the application.”

“When it comes to EHR implementation, “user virtualization absolutely helps with meeting meaningful use.”

Stephen Carnes,
*IT administrator – Server/Virtualization
Kaweah Delta Health Care District*

Security in a hospital setting is very dynamic, with people accessing information all over the place – at the bedside, operating rooms, from remote locations by telecommuters. “Being able to dynamically assign different security parameters that are based off different conditions is very powerful,” McGeough said. “Being able to set a user experience for an Apple iPad user versus a Panasonic Toughbook user, for example, and do that on the fly, without having to have a user logoff and logon is very powerful.”

Ultimately, user virtualization “returns the business value to the organization” in terms of overall efficiency – increased productivity, faster implementations, greater utilization of existing IT staff and the ability to deliver different things to different people at different locations.

Jason McGeough,
*Regional Manager
AppSense*

Ultimately, user virtualization “returns the business value to the organization” in terms of overall efficiency – increased productivity, faster implementations, greater utilization of existing IT staff and the ability to deliver different things to different people at different locations, McGeough said. All of these capabilities improve patient-physician relationships, and physician and patient satisfaction, which in the end impact improving quality of patient care, one of the cornerstones of the meaningful use of EHRs.

Optimizing IT and Clinical Productivity

When KDHC built an additional 350-bed wing to its medical center facility in 2008, its original budget called for adding 100 new computers, said Carnes. Instead, the number grew to 350 computers but with no budget increase. KDHC’s challenge was three-fold: manage the additional devices without affecting cost, resolve the rising hardware failures created by the increased demand of servers by physicians and staff in the new wing and solve the problem of lack of standardization of the user environment – all with the same size IT staff.

By implementing the AppSense User Virtualization Platform, KDHC reached its goal of increasing the number of users per server to 140. Logon time dropped. While the time varies from department to department, some physicians enjoy two-second

logons, which is a decrease from approximately 30 seconds, when they launched applications remotely. The Emergency Department, which is the biggest department and has a full desktop, dropped its average logon time from 46 seconds to 16 seconds, Carnes said.

The implementation reduced upfront costs on the backend by half. Following an initial ramp-up and troubleshooting period, KDHCDC succeeded in trimming support time by 25 percent. In addition, KDHCDC saved on hardware and storage costs by increasing the amount of users per existing server.

User virtualization can also make hospital processes, which need to be documented and categorized, more efficient, said McGeough. Entering information into a centralized IT infrastructure enables near real-time availability to aid clinicians in decision support, which helps improve the quality of patient care. In addition, user virtualization makes the data itself efficient, and speeds the time in which the data can be used by different applications, he said.

Winburn points out that user virtualization will accommodate the rise in information access from multiple sources, such as laptops, smartphones, iPads and tablets. As these devices become ubiquitous in healthcare, ensuring that user settings can roam from one device to the next and the user's applications look the same from desktop to laptop is critical. "User virtualization helps bring all the different devices together so you can securely access your information or EMR application from any one of these devices, which supports the delivery of quality care," Winburn said.

Leveraging User Virtualization for Future Healthcare Challenges

As dynamic as the healthcare industry has been in the last few years, transformative changes such as more healthcare reform mandates, advanced stages of meaningful use criteria and conversion from ICD-9 to ICD-10 code sets will require healthcare providers' health IT assets to be flexible, scalable and interoperable in order to respond. "User virtualization gives IT the ability to react and react quickly without having to worry about what that user experience is going to look like," McGeough said. "The ability to have an infrastructure in place to deliver what the user experience should be and deliver it optimized adds to the efficiency of IT as a whole and IT's ability to move to the direction that the business dictates and to move fast and easily."

About AppSense

AppSense, the leading provider of user virtualization solutions, makes physical and virtual desktop deployment possible by ensuring a seamless user experience across all delivery platforms. AppSense accelerates multi-platform desktop deployments by eliminating costly user management tools, enabling single-image application delivery, and ensuring users have the same experience from any desktop. AppSense technology is used around the world by many leading healthcare organizations such as Banner Health, Kaweah Delta Health Care District, University of Texas Medical Branch, and WellSpan Health. AppSense is a Global Citrix Solution Partner and a founding member of the Citrix Ready Program, a Microsoft Gold Certified Solution Partner and member of the Microsoft System Center Alliance, and member of the VMware Technical Alliance Program. For more information, visit www.appsense.com.



Produced by MedTech Media Custom Group. © 2011

71 Pineland Drive, Suite 203 • New Gloucester, ME 04260 • 207.688.6270 • www.medtechmedia.com