The Computerworld Honors Program

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Final Copy of Case Study

YEAR:
2012

STATUS:
Laureate

Organization name:
Ohio Dept. of Developmental Disabilities

Organization URL:
http://odmrdd.state.oh.us/Pages/default.aspx

Project Name:
Virtual Desktops at Ohio Dept. of Developmental Disabilities

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

The goal of the Ohio Department of Developmental Disabilities' Virtual Desktop project is to help employees be more responsive to the needs of 90,000 developmentally disabled state residents and their families. The intervention and services we provide often mean the difference between mere survival and the satisfaction of a truly fulfilling, productive life. With 90% of our desktops at the end of their five-year life cycle, we needed more than a PC refresh. A virtual desktop infrastructure (VDI) solution would centralize our desktops on data center servers for anywhere, anytime access, so tasks such as handling public records could be accomplished without taking laptops containing sensitive data out of the office. But the management piece was missing. We needed to support 1,500 users, including 10 development centers across the state, each housing 103+ residents. A varied user base included nurses, safety consultants, business analysts, administrators, office staff, IT, developers, executives and more, with many different application needs. Virtual desktops that were all the same would not do. We also had specific goals for reducing our operating expenditures within IT. Initially, our goal was 10%, but we ultimately reduced by 30% the cost of managing desktops, while giving users a more stable, mobile, and secure version of their PC work experience. Metrics used to measure success were: 1-year initiative to virtualize 1,500 desktops simultaneously with a goal of reducing gold images from dozens to one; centrally package and provision 65+ applications; reduce overall operating expenditures for the IT department by at least 10% ; reduce time to provision new desktops from current 8-hour cycle to under 1 hour; give some users a personal/customizable desktop

experience without higher storage costs; reduce the number of applications through standardization and minimize need for different desktop deployment/management tools.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

Our Microsoft Windows 7 desktops are provisioned by Unidesk virtual desktop management software on VMware vSphere, accessed by VMware View through HP thin clients, hosted on HP servers connected to Whiptail and Dell Compellent storage. The main differences between our virtual desktop project and others we've examined are: We support all use cases: persistent, non-persistent and semi-persistent desktops. We worked hard to determine who was who, in order to deliver the right desktop to the user. Unidesk was the only management platform we found to centrally manage all use cases for 1,500 users. Other tools promise to reduce gold images, but couldn't handle our desktop variance. Unidesk layering technology was the only solution to require only one gold image for all our desktops, even if they had different virtual machine configurations and applications. This single image management, plus the ease with which we could package all of our applications as layers, was key to easing administration for our desktop team and realizing our OpEx reduction goals. Layering technology is also key to storage reduction for all these different desktops. We found that layering only a single instance of the OS or an application gave us desktops in the range of 6-8GBs, which made high-performance storage like Dell Compellent and WhipTail SSD affordable and viable for virtual desktops. The greatest challenge was not technical, but sociological. Users resist change, so success would be almost entirely determined by user perception. We faced this reality head on. We started with select pilots, migrating 100 users per week, watching closely to see how they would scale. We worked hard to communicate which parts of user desktops would not work the same. We learned that no matter how good our technical design, user perception was everything.

Please list the specific humanitarian benefits the project has yielded so far.

Ohio DODD users must be able to access their desktops from many different locations with optimal performance and maximum security. Professionals want to spend their time helping clients and not waiting for PCs to boot, applications to be delivered, or problems to be fixed by the IT department. The main new benefit the virtual desktops offer our end users is that they can now have access to the same desktop from anywhere, without lugging laptops from center to center or headquarters, and without waiting for the IT department to catch up to their needs. Desktops can now be re-provisioned in about 30 minutes (previously 8 hours or more) and repair is sometimes instant because of new rollback functionality in the VDI layering technology. Our users have found that the new virtual desktops are much like their old PCs in that they can install applications (if approved), perform customizations to their desktops (again, if approved), and use all the software they require and have it delivered and managed centrally. For the IT department, the specific benefit has been that we have been able to evolve from being a task-oriented group to a more strategic operation. We have virtual desktop layers of over 65 different applications so our gold images are reduced to just one, which makes for almost zero running-around time for our staff. Because they are relieved of their time consuming desktop activities, administrators spend time on other equally important areas to improve service for our customers. As of 1/1/2012, 7 out of 9 of our desktop administrators have been re-assigned from desktop support to new job functions, with the remaining 3 now focused on layer building for virtual desktops.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

Previously, we had one staff member in each of our 10 dispersed development centers just to manage desktop computers. Now we have just three staff members to support all 1,500 of our virtual desktops. “We've deployed our IT personnel resources onto new strategic projects that more directly help our customers." - Bryant Young, CIO. “With virtual desktop infrastructure and new desktop layering technology, we've been able to turn an aging fleet of hard-to-maintain personal computers into more manageable, cost-effective virtual business computers." - Robert Murray, Network Services, State of Ohio DODD. The support manager reports: Applications are installed with configurations in place in minutes. New users are put online with needed applications within minutes. Licensing is easy to monitor now with reports of number of licenses used. When a user's profile becomes corrupt, it is repaired in less than 30 minutes vs. 8 hours. Malware and virus activity is caught and removed immediately with a repair vs. re-image. Equipment failure is much easier to replace, with no loss of data or customizations. Desktops occasionally blue-screen. We can now monitor those and restart before the user even reports to work rather than waiting for the user to report issues. Software updates are scheduled during non-production hours and all desktops receive the latest updates over one night vs. weeks of pushing out updates then "hands on" for those that we can't catch. From an end user: "Is there any way we can expedite the VDI process for the rest of the staff in my office? Their systems are extremely slow and they need constant access to their computers. When pulling up the Internet or flipping screens, it literally takes 40 sec. or more. It is not that way for me on VDI."