Using Desktop Virtualization to Drive Digital Equality in Higher Education
Today’s Higher Education Environment

Today’s higher education environment is marked by changing student expectations related to their increasingly diverse computing needs. Higher education institutions are striving to create student-friendly IT infrastructures that support students’ desire to bring their own mobile devices to campus. Gone are the days when these colleges and universities asserted their control over students by regulating everything from computer lab hours to acceptable computing devices.
Seemingly overnight, student and school roles have done a 180-degree about-face, with students now dictating the terms of their envisioned user experiences, which include using a mix of mobile devices to access applications and data from their dorm rooms or anywhere at any time. To maximize their educational experiences, students want to work more efficiently and at their convenience, and that means having 24x7 IT support for any device at their disposal. All this is happening when higher education IT budgets, staff, and resources are constrained, which makes it difficult to answer help-desk calls, maintain computer lab hours, and ensure system security.

Make no mistake about it, this new breed of student is changing the face of higher education, and progressive schools are taking advantage of this transformation. For example, North Carolina State University has created a state-of-the-art computing environment that enables it to successfully recruit the best and brightest students by offering some of the most comprehensive and user-friendly IT access and policies. With the help of VMware® Horizon™ desktop virtualization solutions, higher education IT departments can satisfy the workstyle needs of students, faculty, and staff for a consistent, intuitive end-user experience that is easy to manage on any device.

Major Players—Their Roles in Meeting the BYOD Needs of Students

Instructors and Department Heads

Depending on the particular higher education institution, instructors and/or department heads are charged with working with CIOs to ensure that students have equal access to a wide variety of computing tools—from legacy applications to high-performance, 3D applications. Prior to desktop virtualization, students had to install and support each application. With desktop virtualization, the IT department can install an application on a single golden image and deliver that same image to all students in the class.

CIOs

In addition to helping instructors and department heads provide the right user tools, CIOs have a spectrum of responsibilities related to bring-your-own-device (BYOD), including:

- Demonstrating technical leadership to drive student recruitment and retention
- Holding down costs
- Enabling the IT department to leverage scarce resources to scale out desktop infrastructure and support
Using Desktop Virtualization to Drive Digital Equality in Higher Education

IT Directors

IT directors are tasked with doing more with less. They are expected to quickly and securely deliver applications and patches to any device—while protecting sensitive data. In addition, IT directors are responsible for reducing help-desk calls, centralizing management, and reducing remote onsite visits.

The Top Five Ways Desktop Virtualization Enables Digital Equality

The goal of digital equality is to create a consistent computing experience for all users regardless of device, time, or location. Digital equality provides:

1. Equal access to applications, computing power, and data from any device, while maintaining security and IT control. Students don’t have to install an application on their endpoint device; it’s already installed on their virtual desktop.

2. Intuitive, consistent user interface across all devices. This consistency streamlines IT operations and support.

3. Support for new personal mobile devices, including laptops, tablets, and smartphones. In the last four years, the average number of Internet-capable devices accessing institutional networks has jumped from one to more than three per student.¹

4. Support for legacy personal computing devices. Delivering the same user experience for people using older desktops and laptops is essential to enabling digital equality.

5. Access to computing resources during off hours. Enabling students to access applications or high-powered computer lab workstations anywhere and at anytime through desktop virtualization is a win-win for both the student as well as the computer lab, which doesn’t have to stay open as long.²

North Carolina State Builds a 24-Hour Ubiquitous Computer Lab

Schools like North Carolina State University offer virtual computer labs to their students and other members of their university communities. The NC State Virtual Computing Lab provides a remote access service that enables users interested in high-performance computing disciplines such as engineering, design, and architecture to reserve a computer with a specified set of applications—including 3D graphics—and remotely access it over the Internet. Students can use applications such as Dassault SOLIDWORKS with on-campus zero clients or from any device remotely.

According to Maurice York, Head of IT for the NC State University Libraries, “You can walk around anywhere in this space, and what you’ll see are students sitting at a workstation with a laptop on one side and another laptop on the other side, and their telephone and tablet also right there. All of that has to work together seamlessly. They’ve got to be able to access their storage and their services and their project environments. Creating that Horizon View environment where we could deliver the desktop service anywhere that we needed to on campus was a critical part of how we grow into this distributed environment and how we grow into the campus. What we want to do is provide an environment that delivers the compute power the students and the faculty need to leverage this facility anywhere they are, from any device, anywhere in the world.”
Desktop Virtualization: Key Benefits for Higher Education Institutions

Desktop virtualization can deliver six essential benefits. Desktop virtualization:

• **Centralizes management**: Desktop virtualization centralizes the management of local computer labs and devices at the data center for both the main campus, and for remote campuses, which saves time and money that would otherwise be spent on remote upgrades and other onsite visits.

• **Slashes help desk calls**: One of desktop virtualization's biggest benefits is its ability to dramatically reduce the number of help desk calls because students, faculty, and staff all have a consistent user experience—no longer ruled by different browser versions, Java versions, etc.—and the device platforms are compatible with all of the applications.

• **Future-proofs the technology infrastructure**: Desktop virtualization allows higher education institutions to future-proof technology by providing a framework to support new devices as they are introduced. For example, if a student comes on campus with the latest device (e.g., Google Glass) and wants access to their coursework, desktop virtualization allows them to just open a browser and access a Windows desktop.

• **Allows quick rollout of applications**: This is a positive capability for faculty because they can provide the latest and greatest tools with ease. For example, a new, updated version of CAD software might be available mid-semester with an advanced feature that the instructor is anxious to share with his or her students.

• **Enables high performance computing**: This is a great benefit to students that allows ubiquitous workstation-level performance and fast access to computer lab files during off hours. For example, a student in an architecture class could be working on a design that requires the power of a graphics-enabled workstation located in a 3D computer lab on campus. If the lab closes before the student's work is done, the student can return to his or her dorm room, use a laptop to access a secure, virtual workstation that is equipped with the necessary graphics performance, and then finish the job.

• **Reduces hardware and energy costs**: With a BYOD program, a student's smartphone, tablet, or TV can all be virtual desktops. This can save a higher education institution from having to create more computer labs. Zero and thin clients used with virtual desktops in computer labs also save money because they consume less energy than traditional PCs.
Higher Education Goals for Desktop Virtualization

These are dynamic, exciting times for higher education institutions as they are challenged to support digital equality and armed with desktop virtualization to achieve this goal. They are asked to transparently enable students’ individual work styles, giving them a comprehensive experience that allows them to continually add new mobile devices and apps without giving a second thought to installation or support.

Driven by the need to satisfy current students and recruit new ones, institutions are asked to eliminate the barriers they had formerly put in the paths of their students. They are staying focused on digital equality, using desktop virtualization, and future-proofing their technology. In doing so, higher education is providing invaluable educational opportunities for today, and setting the stage for even greater advancements in the future.

VMware and Desktop Virtualization—Key Differentiators

VMware has led the way in the virtualization industry, including desktop virtualization. Many higher education institutions are VMware customers, and as such, they view VMware as a trusted partner. They depend on VMware’s mature, reliable solutions, recognized quality, and customer support.

When considering desktop virtualization vendors, it is important to seek out other colleges and universities with scale and use cases similar to yours. Ask about the challenges they faced and the benefits they are receiving from desktop virtualization.
About the Author

Bruce Hoard is a freelance writer and editor based in Massachusetts. He has been on the cutting edge of technology for 30 years, covering such hot topics as virtualization, cloud computing, networking, and storage throughout their lifecycles. Of late he was the Editor-in-Chief of Virtualization Review, where he was responsible for all editorial aspects of the print magazine and a primary contributor to the publication’s website.

About Activate

Activate combines deep buyer insights with a content-led nurturing methodology to engage prospects and convert them to customers.

© 2014 Activate Marketing Services, LLC | activatems.com
© 2014 VMware

Sources


2. VMware presentation and Activate analysis