Ending the Tech Refresh Nightmare

Virtualization is helping three universities keep campus technology up-to-date despite tightening budgets.

By Jennifer Demski
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Theresa Rowe, chief information officer for Oakland University in Rochester, MI, has a recurring dream—call it a bad dream—about the impact of the economic recession on her institution: “We don’t want to wake up five or 10 years from now and see this fossilized culture where all the technology is frozen in time and say, ‘Oh, 2008, that’s when the money ran out.’”

As higher ed budgets tighten in the ongoing recession, colleges and universities have found themselves questioning, lengthening, and even eliminating tech refresh cycles. Yet how deep an institution cuts into its refresh program can compromise its ability to provide an up-to-date and competitive computing environment for students and a solid and reliable information network for faculty and staff.

Forward-thinking CIOs have turned to innovative solutions when routine tech refresh cycles no longer fit into the budget. As Rowe puts it, “We have to keep moving forward with technology and be open to change on everything. We tend to get entrenched in IT—this platform works, or this server, or this vendor. We just have to be open to rethinking everything, even the rules by which we make decisions.”

Assessing the Necessities

Rowe and her staff have some experience with stretching dollars. Compared to universities in other states, Oakland has been operating on a tightened tech budget for a good decade. “Michigan has failed to grow higher ed budgets for 10 years now,” Rowe explains, “so we really have been gradually cutting over the last 10 years in ways that perhaps some schools in other states are feeling all at once.”

Over that time period, Oakland IT staffers have developed strategies for making their tech refresh budget work. By evaluating the life of their network electronics, they’ve found that many units are reliable past the standard three-year cycle, allowing them to stretch the refresh cycle to four or five years. They’ve also forgone across-the-board refreshes and instead base each refresh on a device’s use and reliability as well as how critical the device is to a stable computing environment on campus.

When Brian Young, CIO and VP of IT at Omaha, NE-based Creighton University, spoke with CT in 2009 (see “Tech Refresh in a Down Economy”; campustechnology.com/articles/2009/07/01/project-management.aspx), he and his team were evaluating whether or not Creighton’s standard four-year refresh rate could be lengthened to a fifth year. Since then, he has adopted the same process as Oakland for assessing tech refresh needs on a case-by-case basis.

“For us, whether it’s the economy or not, it’s just the smart thing to do,” Young says. “In some cases, extending the life of some computers up to five years isn’t a bad thing.” He points specifically to computer labs and kiosk locations whose primary purpose is “just a quick portal to the internet and e-mail” as prime candidates for maximizing the length of the refresh cycles. In other areas, he adds, “where we need to stay on top of the market of what students are bringing to campus, the refresh is a little shorter.”
Virtual Servers, Real Savings

Both Oakland and Creighton join Loyola University Chicago in realizing cost savings through the use of virtual servers. According to Dan Vonder Heide, director of infrastructure services at Loyola, the “timing was perfect” to tie the move to virtual servers to the school’s data center relocation in 2007. Since then, he reports, “we’ve not only seen improvement in our ability to fire up a server, bring an application online sooner, and have more robust business continuity because of virtualization, but we’ve also been able to see some significant savings with the cost of virtualization over a traditional blade or dedicated server.”

With the help of vendor CDW-G, Loyola has virtualized 65 percent of its campus servers and has seen a 70 percent reduction in costs on server hardware over the past three years. The move to virtualization has freed up money for other innovative cost-saving investments, such as Loyola’s recent implementation of an IBM System Storage SAN Volume Controller, which was largely funded from refresh savings.

Virtualization still requires ongoing investment, Vonder Heide notes, but on a much more manageable scale. “With virtualization, the software component has upgrades and new releases that we’ll try to stay current with,” he says. “In the last three years, we’ve seen one [release] with VMware that we’ve made an investment to upgrade to.”

Ultimately, the cost savings in a virtual server environment go beyond the initial investment, because the replacement of physical units happens on a much smaller scale. Vonder Heide notes that Loyola is still on the original boxes of the server platform, “but we plan to refresh those at a four- or five-year increment, just as we would with the traditional server.” He points out, however, that one “beefy” VMware server can host 35 servers. “So that’s replacing 35 blade servers or 35 stand-alone servers, but we’re only refreshing that one box.”

Peopole Make it Happen

As funds shrink and traditional computing transforms to a virtual environment, there’s one line item of the IT budget where the instinct to cut funding must be resisted. Remarks Creighton University (NE) CIO Brian Young, “In down economies, a lot of the time I’ll find my colleagues cutting things like travel and professional development, and that’s exactly the stuff you shouldn’t be cutting. You need your team to be well-schooled and well-trained. One of the things I ask my teams constantly in tight times is, ‘Do you have the tools and the skill sets that you need to accomplish the projects that we have in front of us?’ If the answer is ‘no,’ then we figure out how we’re going to get them. There are other ways to find savings besides trimming what I consider to be one of the core elements of any budget: professional development and the focus on people getting better and training in their jobs.”

Loyola University Chicago shares a similar attitude toward the critical function of staff training. Director of Infrastructure Dan Vonder Heide credits CIO Susan Malisch with elevating professional development as a budget priority. Since 2005, when Malisch joined Loyola, “we’ve made a significant investment in our professional development strategy,” Vonder Heide reports. “As we invest in newer technologies, such as virtualization, we’re going to make sure that people are trained and able to support our environment.”

If budget restraints do require staff cuts, professional development becomes key to continuing top-notch support on campus. In Michigan, where higher ed funding has been stagnant for 10 years, Oakland University CIO Theresa Rowe designates the professional development of her staff as a top priority, especially since budget constraints have limited the growth of her department. “That’s another way that budget cuts or lack of budget growth shows up—you end up with a small department,” she explains, noting that the upside to a small staff is that “you focus on making your people as talented, capable, and productive as you can. There’s no tolerance for dead weight around here. We have a tremendously talented staff that we invest in. As you re-bid things and change platforms and move around to get the
lowest cost of this or that, you’ve got to have very talented people who are with you making those changes. People make it happen.”

You Can Never Be Too Thin

As with server virtualization, Loyola and Creighton see the potential for the initial investment in thin client computing to pay off down the line, both in terms of savings and efficiency. Loyola is rolling out its first thin client student lab this summer, installing a Citrix thin client server and 25 Wyse workstations in its information commons.

“We first started looking at this with a green mentality,” says Vonder Heide. “But, like with the virtual server environment, there are clearly some cost savings associated with thin client solutions, both from a hardware perspective, as well as from the ability to maintain those lab machines for a longer term. We also think it’s going to open up some opportunities for us to manage some of Loyola’s remote sites more easily than we currently can.”

Creighton started on its thin computing diet in mid-2009, switching an entire health sciences lab over to thin client and cloud-based computing. The school is also using thin client solutions in its rollout of electronic health records in Creighton’s labs and clinics (which are located both on campus and around Omaha), pairing 140 HP thin client terminals with a Citrix server. The cost savings are significant: Each HP terminal cost around $600 to $700, and the cost of the Citrix server and its applications is spread over those 140 units.

“Using the thin client environment is certainly more effective than buying $1,800 PCs for each terminal’s location,” Young notes. “On the management side, I’m updating one virtual server. I don’t have to go out and send people to do break-fix or application support—it can all be done on the back end. Without question, there’s going to be a nice amount of savings there, even from soft costs.” Young expects the tech refresh cycle for the HP terminals to be about six or seven years.

Technologists at both Loyola and Creighton agree that the switch to virtualization, whether it be server virtualization or thin client solutions, is a measure that their departments would eventually implement even without the down economy. The imperative to save money in the current recession just hastened the switch. “From my perspective,” remarks Young, “virtualization was going to happen regardless of the economy. In fact, it’s just smart technology to be reflecting on. If you’re an institution and you’re not already involved in or seriously considering virtualization, you need to be. We’ve been at virtualization for some time now, and we’ve seen a tremendous savings since going from 200-plus servers down to 50 virtual units. Plus we have better flexibility, better control, better reliability, and better fail-over.”

For IT directors like Young, “the economy has just caused us to think smarter about every dollar, and some of these technologies come to the surface more easily for people because of the cost effectiveness—but they were going to happen regardless.”

Loyola CIO Malisch sees virtualization not as a quick solution to the economic crisis, but as the new standard for campus server and computing environments. “Just from an industry trending standpoint,” says Malisch, “I don’t think there’s any going back, regardless of our economic climate or if the budget changed.”