Out of the Box, Into the Cloud

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How A Virtualized Smart Classroom Strategy Can Free You From Proprietary Boxes

If you find your college or university's classroom technology system burdensome to manage, use, and expand effectively, a new class of technology may be the solution you are looking for.

What faculty member hasn't faced that moment of truth when their students disengage from a lecture and drift into a Facebook trance because, for some reason, the classroom's projector just isn't cooperating? What university CIO or CTO wouldn't welcome a campus-wide trend where system downtimes and support tickets decreased while classroom technology usage and satisfaction increased? What director wouldn't be glad to see the true convergence of AV, academic technology, and desktop technology, making it all more efficient and user-friendly?

Faculty would rather focus on teaching than spending time troubleshooting buttons, control panels, and AV switchers. It's not that they are adverse to the technology itself; it's more about having technology that makes it easy to teach the way they teach best, delivering a top-notch learning experience.

The days when a whiteboard and lectern were all the technology needed in any classroom are long gone. The day when instructors can simply walk into classrooms, plug in, then instantly and effortlessly use whatever combination of media they wish is rarely as easy as we know it should be.

The IT department in higher education organizations walks a fine line between challenging faculty with AV technology and creating teaching opportunities with the latest innovations. The trick to harvesting the collaborative and instructive benefits of technology in the classroom without annoying users and shackling the campus to expensive, inflexible, proprietary programs is as simple as making a paradigm shift from the Box to the Cloud.

Like the recent voice and data convergence, audio–visual is now moving to the network. Virtualized IT/AV is becoming more accessible through the use of open systems and standards that the internet uses. Taking advantage of this ubiquitous technology allows for faster and more flexible deployment, improved support and a host of features that can only enhance the educational experience for students and faculty. In this white paper, higher education professionals will discover what's coming next as IT departments virtualize their smart classrooms. This new paradigm allows higher education to deliver technology that supports new

learning modalities like distance and interactive learning and individual pedagogies from one simple platform on the IT network.

Why Many Schools Are Seeking a New Way to Use Technology in Smart-Classrooms

Limited budgetary resources, faculty resistance to various changes in technologies, and the pressure to adapt to newer innovations like tablets, and concepts like flipped classrooms are a few of the drivers encouraging universities and colleges to reexamine how technology, including AV, is used in the classroom. Students arrive on campus prepared with their high tech gadgets, ready to share and collaborate; they're acutely aware that modern technology in the classroom benefits their learning. Students expect a certain level of technology in their classrooms, and they desire maximum flexibility.

But how do you keep the faculty, IT/AV, and academic technology and facilities departments in synch and enthusiastic when new devices and applications seem to appear on a near-daily basis? Support staff already spend inordinate amounts of time troubleshooting a diverse array of hardware that varies by classroom. IT departments are vexed by the realization that, unlike the other technology on campus, the AV equipment and classroom AV systems as a whole, essentially become limited because of the proprietary programming that runs it, or the form factor that won't accept new inputs. As they wrestle with pouring more money into technology that will not easily grow with the campus' needs, administrators wonder how they will keep up.

The initial concept behind enhanced audio-visual in the classroom remains brilliant: transform the learning experience by adding technology and tools. The thought is that a robust AV environment adds new dimensions to lessons by engaging more of the students' senses during class while also allowing for better collaboration, interactive learning, and even distance learning. Unfortunately, departments tasked with making these new learning modalities possible find that the reality is, at least historically, it has been prohibitively expensive and extremely complicated. Rather than

being able to work from a single platform and add or remove equipment and other technologies with the click of a button, campuses have been chained by the limitations posed by the AV boxes in the room. It is this combination of bottlenecks preventing the full potential of classroom technology that is pushing CIOs, CTOs and directors of IT to find a better solution.

The Challenges of AV in Higher Education Settings

There are three primary challenges associated with the typical hardware-centric AV system in higher education settings: ease of use, expense, and adoptability.

Ease of Use, Enterprise-Wide Consistency

Faculty is understandably more interested in educating than wrangling with the technology. Given the short attention span of students, the likelihood of an instructor spending more than a minute to get a presentation loaded and visible on the classroom's AV system is slim. Even more frustrating is the fact that on many campuses, users have to figure out a whole new AV setup in every classroom they enter, because the system is not uniform. Even if many classrooms have a simple, fairly consistent system, there are classrooms that have enhanced technologies, or larger lecture halls, that have completely different user interfaces than standard, simple classrooms. The bottom line is that enterprise consistency is virtually unachievable in the proprietary box paradigm.

The challenge is not just a matter of people being change-averse. When faculty becomes resistant to using the AV equipment in the classroom because it is inconsistent and unwieldy; it is easier and more efficient to just stand behind the lectern and teach. After all, lecterns and whiteboards work reliably and require no training to use.

When users struggle with the classroom technology in place, a number of implications emerge, including:

- Classroom technology that isn't used being used effectively
- Decreased student perception of the school's level of innovation
- Lower levels of intra- and inter-classroom collaboration
- Reduced faculty satisfaction
- Greater demand on the AV department to come to the classroom and fix whatever isn't working – very often user error because the systems are not intuitive and easy to use.

The challenge is being able to create a system that can be deployed consistently across a campus, multiple campuses, or complete state-wide university systems, providing the flexibility needed to allow for new and different technology locally as it becomes available or is needed.

Expensive Proprietary Technology

Seeing the potential of using state-of-the-art audio visual to enhance the learning experience, many schools have invested heavily in the kinds of hardware that allows a well-trained user to produce a stimulating classroom presentation. Due to the proprietary nature of the control equipment, expansion and modification is costly and complicated because of custom coding requirements. Any changes needed as the school's needs change and expand require further financial investment in programming and a significant lead time.

The proprietary nature of most AV systems is not only expensive; it also leads to having a patchwork assortment of installations across campus. Different classrooms house entirely different AV systems. Operating without a unified campus-wide system is akin to having different departments in a business using different accounting software.

Another challenge with a hardware-centric solution is that the hardware itself becomes dated and obsolete. Budget for new capital equipment is always a tough sell and often would-be great academic technologies are passed over because the base AV system consumed the majority of the classroom technology budget.

Other important points to consider with a proprietary hardware solution include:

- The inability to be pro-active
- The requirement for custom built parts and supplies as well as facilities involvement
- A tendency to over-engineer as a means of being pro-active and planning for the future
- An overall lack of flexibility

Lack of Adoptability

Hardware-centric solutions make for unnecessarily complex AV systems. Most rooms have the basics – a projector, a local computer and a laptop input. Other technologies like PTZ cameras for distance learning and lecture capture, lecture capture itself, and ancillary devices like document cameras only add to the box-based matrix switching and form-factor control requirements. New technology developments mean more wires, buttons, touch panels, and user training. Add more as opportunity allows or need dictates, and suddenly what might have been a super-advanced system becomes very hard to use without specific training for that particular room. Monitoring and managing such a disparate jumble of pieces and parts becomes nearly impossible, and expensive equipment ends up sitting unused.

This problem is further exacerbated on campuses undergoing expansion or remodeling projects. Administrators are faced with the dilemma of whether to try yet another solution or to commit additional financial resources to AV systems that have not been fully embraced by the faculty, that are not agile enough to allow modification at will, and that are so heavily hardware-oriented that obsolescence is inevitable.

Other important points to consider with the adoption of new technology include the following:

- The technology should be transparent for best results
- Make user training as accessible as possible
- Consider user support to increase usage

The Solution: Virtualization allows Smart Classrooms to Move to the Cloud

To overcome usability challenges, needless expenses tied to proprietary AV solutions, and lack of adoptability, colleges and universities are turning to software-based virtual solutions that allow them to use their existing skills and equipment for deploying powerful presentation capabilities in the classrooms. No longer are there physical limitations to what is possible. In a fully-configurable system, AV switchers, buttons, and control panels become largely irrelevant. It's no longer about the hardware because it's all virtualized in the Cloud.

At its core, a network/software-based, AV over IP system makes it possible for faculty to walk into a classroom, plug in a laptop or other device, and easily control the entire classroom sharing all sorts of media. Students can do the same, simply logging in wirelessly to show their work. Likewise, collaboration between satellite classrooms becomes as simple as connecting to the network like they already do every single day.

Important Benefits

A number of significant benefits emerge when AV systems become virtualized. Moving to a network/software-based platform helps overcome the challenges and creates new opportunities in higher education. The benefits include the following:

AV will always be required. The audio visual equipment will always be required, but now it can leverage the network. You still need the speakers and projectors, but now you're connected to the infrastructure that makes all these things work together better, faster and smarter. That network connectivity is what provides the leverage to configure and provision new rooms in a matter of minutes rather than days.

Eliminating user frustration. A cloud-based AV system uses the same technology skills everyone is accustomed to using today. Because it's an open system, it uses internet standards; network connections, email technology, authentication technology, and browser-based functionality is common knowledge across all users—faculty, students, AV technicians, and the IT department—which makes it easier to use and faster to adopt. As faculty satisfaction increases, they find it possible to focus on teaching rather than the equipment in the room. They simply point, click, and collaborate with students.

A consistent classroom technology interface campus-wide means faculty can easily teach in any classroom. The ease of getting the equipment to work means instructors can teach the way they teach best, rather than being tied to one corner of the room or limited by which machines they know how to work.

Breaking the constraints of proprietary programmed systems. In this new paradigm, smart classrooms are delivered with standards-based provisioning rather than custom programming. An AV over IP platform is an open system, not built on proprietary programming that ties users to providers for as long as they employ the system. Changes in technology and equipment, as well as deployment of additional classrooms, become as easy as plug and play – with no additional expense. Parts and supplies used are commonly available rather than custom-made. Existing equipment seamlessly integrates, regardless of make or manufacturer.

Future-friendly. By shifting to a cloud-based platform, campuses achieve complete flexibility. Adding a room or changing its equipment becomes easy. Having the opportunity to adopt whatever technology comes next allows the campus to be forward-thinking and adaptable. A software-based smart classroom platform means possibilities are unlimited and the future is rich with opportunity to integrate the newest devices and technology quickly and effortlessly.

Campus expansions and redistribution of equipment have one less constraint, the classroom technology system's flexibility means it

will work wherever it is with whatever technology you want integrated. This transition to leveraging the IT network puts the power into the hands of all who touch this network. IT has the power to now make the complex simple.

With a cloud-based, virtualized platform, you enable a number of other significant operational benefits that are important:

- Flexibility, power, and reliability from leveraging the network
- Centralized, campus-wide or enterprise-wide control and configuration of the networked system
- Pro-active management and maintenance of all AV equipment and classroom technology on campus with real-time monitoring
- The ability to identify bottlenecks in any facility to make implementation fast
- Data reporting allows for asset tracking, and accurate assessment of platform and equipment usage as well as rich analytics
- A dramatic decrease in MTBF for equipment because it can be monitored remotely and powered off

What to Look for in an AV and Classroom Technology Strategy

AV is making a move to the network where it will be managed by software and computers—just like voice. After all—it's really just data. By adopting this ubiquitous technology, you further enable your existing hardware as well as faculty with better support and features. When looking for a strategy for making classroom technology work via a cloud-based virtual platform, it's important to consider the following requirements:

A win-focused strategy: Seek a solution that creates a win for all, one that takes into consideration the pedagogical nuances of each department and its faculty members. Rather than loading AV equipment into a room without faculty input, aim for a solution

everyone can get behind. The goal is buy-in, not just more technology. Whether it's desktop technology, lecture capture, document cameras, video conferencing, tele-presence, or online or distance learning, it's all possible, but you want your control system to bridge it all together and create opportunities you might not yet have even imagined.

Put the power in the hands of the user. The right solution should empower the college or university to control how it is used, how it grows, and what equipment is added. There should be a sense of the technology being designed to delight the users, not to enrich the provider through expensive proprietary equipment that becomes obsolete every few years.

Minimal complexity, maximum possibilities: Seek an open system solution that can be provisioned, configured, deployed, and modified simply. Users should find the system to be extremely simple on the surface; technical experts should recognize the genius of what lies below in how it functions and adapts to what comes next.

Allows use of existing or new hardware: To help minimize the impact of a solution, look for a strategy that integrates the equipment already in place. Because the system is cloud-based, when new hardware is purchased, it should integrate easily without requiring any special programming.

Built to be consistent from room to room: Look for a solution that makes it possible for faculty to simply walk into a classroom and use the system, even when they've never set foot in that room before. The best feedback from faculty is no feedback, because they are using the system so naturally they never give it a moment's thought.

Solves support issues immediately: The ideal solution should make support instantaneous with a real-person, real-time help desk using video chat. That person can remotely log in and see what's going on and solve your problem right then and there. The goal is

to solve issues remotely rather than having to physically deploy someone to the classroom.

Automates inventory and assessment: Choose a system with management controls and remote monitoring, so it is clear which pieces of your existing equipment are actually being used, and which ones are becoming obsolete. The system should be future-friendly so there is no need to replace hardware every couple of years. Personnel should be able to query the system and determine the status of every piece of equipment instantly.

Built for easy maintenance: Look for a solution with monitoring capabilities for pro-active maintenance and classroom planning. The system should work with simple off-the-shelf cables, and other parts, rather than requiring the hassle and expense of ordering custom or proprietary parts. The system should have built-in document management and be able to tell you which technologies within your enterprise are nearing the end of their warranty.

Extensive support: Try to find a partner who will stick with you for the long-term, even if you only deploy the system in a couple of classrooms at first. The company should provide consulting and implementation while also working with your staff or local integrator. They should also provide training and support as you retrofit your rooms at will, rolling out the platform campus-wide at your pace.

Market experience: Seek a partner that has been working with AV over IP for at least five years, has a substantial track record in technology, and has a notable portfolio of projects with customers you can communicate with to hear first-hand how the system is working on their campus.

Higher education prepares our young adults to be the thought leaders of the future and delivers opportunity that every student seeks when entering college. Technology creates the opportunity to deliver the highest quality learning experience while eliminating the boundaries institutions may be experiencing with black box classroom solutions.

THE UTELOGY PLATFORM ADVANTAGE

Utelogy puts "you" in control. Using standards-based and proven IT technology in every other aspect of our professional and personal lives should be proof enough that it can be successfully applied to your smart-classrooms.

Founded in 2009, the company is a provider of the premier enterprise smart-classroom control and management software platform that enables AV over IP solutions. Empower educators to teach the way they teach best, without struggle is first priority. Taking that platform and delivering value to all aspects of the enterprise is the leveraged power of this technology. Utelogy specializes in the design and deployment of advanced cloud-based AV solutions on college and university campuses.

The Utelogy platform provides the following unique advantages:

- **Unlimited options that align with your particular needs:** The Utelogy platform is limited only by your imagination. If you can describe what you want your classrooms to be able to do, it can be done. The platform is not about a bigger box of technology: it is about making the use of classroom technology effortless.
- **Technology that matches your vision for what could be:** Utelogy helps campuses use their existing hardware via an intuitive platform any faculty member can use with little or no training. We use open system technology to put control of your classroom technology into your hands.
- **Remote and on-site instant support:** During and after deployment, you have our full and instant support to enable troubleshooting. At the touch of a button, you can access the U-Help live support desk and reach a real person who can remotely fix most issues, or who can advise you of the simple steps you need to take on your end, such as plugging in a cable or flipping a switch.
- **More than a decade of experience in technology:** The principals at Utelogy prize the opportunity to work with proactive, forward-thinking academic institutions that value having a powerful network-based classroom technology to create endless opportunities for the future.

- **Proven track record of eliminating expensive, proprietary switching, programming, and hardware:** With a client base of universities and colleges that have deployed this virtualized platform, Utelogy can be trusted with the design and deployment of your cloud-based, virtualized smart classroom platform.

Some Innovative Schools that Have Adopted this Approach

University of Toledo

At the University of Toledo, classroom support was becoming an issue. Every time rooms were being used for distance learning, the organization had to send a technician in prior to class to set it up. In addition, the equipment was dated and starting to show its age with downtime.

Using AV over IP on the Utelogy platform, they were able to take a complex distance learning environment and create a virtualized smart classroom and deliver a consistent interface to make it user-friendly. With the virtualized solution, they were able to replace the old and broken hardware with a pure software solution. Not only did they get the functionality they desired, they also saved the additional $30,000 they would have spent on hardware.

Mount St. Mary's College in Los Angeles

Mount St. Mary's wanted to build an anatomy lab that allowed all student computers in the lab to connect to the display devices. This change was going to require some hardware as well as deployment of a touch panel for the wall and proprietary programming, with a total cost of approximately $100,000 for the whole solution. Working with Utelogy and SVSi (www.svsiav.com), equipment in the room was added to the network and the displays can now accept any internet standards-based signal from their campus cloud for approximately $65,000—a savings of $35,000. They now have a room that can also easily be used for distance learning or an overflow classroom.

Santa Rosa Junior College

Santa Rosa Junior College in Santa Rosa, CA, with 25,000 students, was preparing for a major campus expansion. Not only was the college preparing for several new buildings on its main campus, it was also planning a new campus 10 miles away and planning for upgrades to equipment on other satellite campuses. Russ Bowden, the manager of Media Services was looking for a next generation, truly IP-based control and management platform that would allow for room control and help desk support capabilities. In addition to saving several hundred thousand dollars in capital equipment spend over three years, the technical team at Santa Rosa Junior College can now "configure a room and deploy the *Dashboard* in a matter of minutes". And in cases of multiple rooms, 30 seconds per room thereafter – and all of that is done remotely.

Bay Path College

Bay Path College in Longmeadow, MA was finding the lack of consistency between classrooms was a challenge for both faculty and the technical support staff. Bay Path College deployed Utelogy's network-based AV solution with help desk functionality to solve this conformity challenge and make supporting a growing number of adjunct faculty easier. Satisfaction levels across faculty and technicians increased dramatically after just the first semester of use.

Additional information about other campus deployments is available by contacting Utelogy.

To start a conversation about virtualizing your smart-classrooms, moving technology control to the Cloud, reducing expenses, and empowering your campus for the future, give us a call at 714-699-2121.

You can see for yourself how Utelogy would work for you, with a web-based demo. Schedule yours now at **http://www.utelogy.com/utelogy-contact-us.aspx**