

Extron XTP Systems Facilitate Active Learning at SU Whitman

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Mark Schnell
Senior Instructional Support Engineer
for Learning Environments (ITS)
Syracuse University

Originally established as the College of Business Administration in 1919, the Martin J. Whitman School of Management – WSOM at Syracuse University is the 16th business school in the nation to earn accreditation from the global organization, Association to Advance Collegiate Schools of Business. This tradition of excellence continues today. The school is proud of its reputation and current endeavors to combine innovative teaching methods and enhanced technologies at their 160,000 square foot (14,865 square meter) facility. Recently, WSOM teamed with elite integrator Audio-Video Corporation to upgrade the building's active learning spaces with Extron XTP Systems®, DMP 128 audio processors, and TouchLink® touchpanels.

“We wanted the building's AV installation refresh to be done right, and Extron equipment had already demonstrated high performance and dependability on campus,” says Mark Schnell, Senior Instructional Support Engineer for Learning Environments (ITS) at Syracuse University. “XTP Systems have the performance, reliability, and scalability that we require for our active learning spaces.”

The size of each active learning space within the facility varies. Classrooms range from 35 to 74 seats, and the auditorium seats 200. The project included event and conference rooms that received AV system upgrades as well. The existing CATx twisted pair cable infrastructure remained in place, saving installation time as well as labor and material costs for the university.



Extron Electronics
INTERFACING, SWITCHING AND CONTROL

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XTP Systems for Active Learning Environments

The WSOM team created two, flexible and expandable designs using XTP Systems. Schnell, a certified XTP Systems Design Engineer himself, selected the XTP CrossPoint 1600 matrix switcher for its modularity, support of local and remote devices, and its capability to integrate easily with the existing twisted pair infrastructure. "We worked with Extron on the overall design of the active learning AV systems," says Schnell. "With the tools I learned in my XTP certification training course, designing the applications was a smooth process."

Each XTP CrossPoint® matrix switcher is configured for the particular active learning space with an appropriate mix of XTP® HDMI and twisted pair input and output boards to support local sources, other rack-mounted equipment, along with remote devices. Within an instructional room, a combination of Extron XTP T HDMI and XTP T VGA transmitters installed at the Teacher Station provide AV signal extension for an HD document camera, Blu-ray player, and support for presenter laptops with HDMI or VGA outputs.

Existing room displays were also upgraded. Each room provides one or two 16:10 projection systems using HD DLP projectors, a ceiling-mounted 46" LCD display, and a monitor at the Teacher Station with annotation capabilities. An Extron XTP SR HDMI scaling receiver mounted at each display accepts signals from the matrix switcher, and ensures that video is output at the device's native resolution.

WSOM's default system setting sends the selected source material to all display locations. However, each learning environment's needs vary based on the instructor or the content of the class. The global presets available with XTP Systems accommodated for these future cases by allowing the system to save and recall I/O configurations with a single command sent via RS-232. Instructors can show source content on the room displays. They can also make or view notes on the annotation monitor while using the flat panel display as a confidence monitor.

Another option is to share annotation to both projectors or to either one for a side-by-side comparison. Whatever the I/O configuration called for, the global presets saved time in programming the control system to best suit the learning environment.

The versatility of XTP Systems also came in handy for convenient RS-232 insertion through the XTP CrossPoint matrix switcher's Ethernet port, enabling control of the projectors without requiring extra wiring. The matrix switcher was also capable of powering XTP transmitters and receivers over the same twisted pair cable, which further streamlined integration. "XTP Systems require very minimal amounts of engineering effort and labor to fabricate and commission on site," says Phil Pirkl, Applications Engineer at Audio-Video Corporation.

The equipment closet within each room contains a variety of resources in addition to the AV signal switching and distribution products. These include a digital/NTSC CATV tuner, an assistive learning system, a videoconferencing codec, an Echo360 lecture capture system, and an iRecord archive solution. The XTP CrossPoint 1600 conveniently enables communication and signal distribution with these local sources through the XTP HDMI input and output boards.

The integration team used XTP System Configuration Software to set up and commission the XTP installations. The support staff currently utilizes this same software to remotely monitor and control each location. "Everyone on the team loves the ability to make quick and easy changes to the XTP System," says Schnell.

DMP 128 Audio Mixing with Dante™ Network Connectivity

All spaces use at least one Extron DMP 128 Series digital matrix processor to mix program audio and live feeds. The processor supports various audio tasks and signal routing, including audio conferencing with Acoustic Echo Cancellation — AEC, mixing of wired and wireless microphones, distribution to an amplification system, and audio signal transmission to the room's other systems such as the videoconferencing and archival equipment. "Extron's DMP 128 has the versatility and provides the clarity of true stereo that is an expected part of the learning experience at Whitman," says Schnell.

The size of the room along with microphone type and quantity determined the number of processors needed in a given space. Up to four cascaded DMP 128 C AT Dante™-enabled processors support active learning environments with multiple ceiling and student desk microphones, while a single unit is capable of providing audio mixing and processing within a small to mid-sized room. Dante technology provides high-performance distribution of digital audio over the room's local area network.

Extron's DSP Configurator Software facilitates audio DSP management of the DMP 128 processors. The software also allows the support team to remotely route signals, manage gain structure, and optimize signals for live reinforcement, broadcasting, and archival storage. The fixed

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yet flexible graphical user environment of DSP Configurator simplifies the normally complex assignment of expansion routing, automatic mixing, and AEC. Visualization of the processing blocks and routing plus a Live Mode enable connection of as many as four processors via RS-232, USB, or Ethernet to immediately hear any changes made to the system in real time. "The flexibility of the DMP 128 processor enables us to make critical adjustments necessary for playback/public announcement processing as well as AEC needs," says Schnell.

TouchLink for User-Friendly System Control

A design requirement for each active learning space was to replace the existing programmed control system with a configurable solution. WSOM chose the Extron TLP 1000TV 10" Tabletop TouchLink Touchpanel for the Teacher Station, and paired it with a rack-mounted IPCP 505 IP Link® Control Processor. The touchpanel's user interface provides intuitive system operation, including source selection, volume control, and access to the annotation display. "As part of the design concept, we tried to keep the GUI similar to the former control system, making it an easy transition for our instructors," says Schnell.

To allow preview and monitoring of composite and S-video content on the touchpanel's full-motion video display, an Extron MAV AV Series matrix switcher sends these signals to an Extron TLP VIM TouchLink Video Input Module. The module extends AV signals up to 100 feet (30 meters) over the twisted pair cable infrastructure to the TouchLink touchpanel at the Teacher Station. This design element enabled content display, regardless of room dimensions and seating arrangement.

The support team is able to quickly and easily customize room control as well. "Rather than being held captive by the old control system that required a programmer, XTP and TouchLink allow us to reconfigure and manage an AV system on the fly," says Schnell. "We can also control any room from the Help Desk or an iPad using GVE."

Enterprise-wide Control with GVE

WSOM uses Extron's GlobalViewer® Enterprise – GVE server-based AV resource management software to remotely monitor and access the facility's AV systems. From the control room, the support team is able to view the entire enterprise in a single window, control each XTP System, set up scheduling, provide help-desk functionality, scroll through any room's usage data, and create reports for later analysis. The software also stores the authorized user logins, streamlining operations for the team. In case of a facility-wide network outage, each space's XTP CrossPoint matrix switcher, DMP 128 audio processor, TouchLink touchpanel, and IP Link control processor are connected to a network switch that isolates the room to avoid interruptions. The team reported GVE as being agile and easy to operate, whether using



An Extron TLP 1000TV 10" Tabletop TouchLink® Touchpanel at the Teacher Station provides user-friendly AV system operation.

one of the Help Desk computers or a WSOM iPad loaded with iGVE, the mobile version of GVE.

The iGVE app offers the same functionality as the server-based software, including AV system control, real-time monitoring of room devices, event alert notification, tree navigation, and login credentials storage. When reopening the app, it automatically recognizes and logs in the user. The app also provides an encrypted connection to the GVE software, which ensures secure communications between members of the WSOM support team.

Enthusiastic Response

The immense popularity of the test-case installation led to a scheduling quagmire, with many eager instructors simultaneously attempting to book the new active learning classroom. The upgrade fulfilled many long-time requests, such as extended desktop capabilities, a local monitor with annotation capabilities, and direct system control from the Teacher Station. The additions of HDMI connectivity and the marked improvement of image quality were also very welcome.

To solve the scheduling issues, WSOM gave the integrator a green light to upgrade the remaining 23 classrooms with Extron XTP Systems, DMP 128 processors, and TouchLink touchpanels. Audio-Video Corporation was able to commission the rest of the active learning spaces in under seven weeks. The facility was ready for opening day of the fall semester, which pleased both the instructors and WSOM administration. "Syracuse University and Extron were great partners on the Whitman project," says Phil Pirkle at Audio-Video Corporation. "I would have to say my single biggest takeaway with XTP is the ease of deployment. The XTP CrossPoint is very straightforward, both quick and simple to configure and deploy."

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