

# THE TECHNOLOGY MANAGER'S GUIDE TO VIDEOCONFERENCING AND STREAMING

Featuring

- ▶ NEW CONFERENCING CAMERA TECHNOLOGIES
- ▶ DISPLAYS FOR TODAY'S COLLABORATION
- ▶ UPGRADING TO PRO-LEVEL PRODUCTION
- ▶ NEW PRODUCTS FROM TOP BRANDS

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from the editors of

**AVTECHNOLOGY**



## NEW VISIONS



With just two months left of 2020, many are anxious to see this year in the rearview mirror. The words “pivot, hybrid, remote, and zoom” have taken on new meanings, and the office and learning environments have changed forever. Despite the turmoil, these past eight months have proven our resilience and prompted innovation that will carry us into the future.

The Guide in the October issue of AV Technology focused on the importance

of audio in the new meeting and learning environments. In this issue, we turn to the role of cameras and displays.

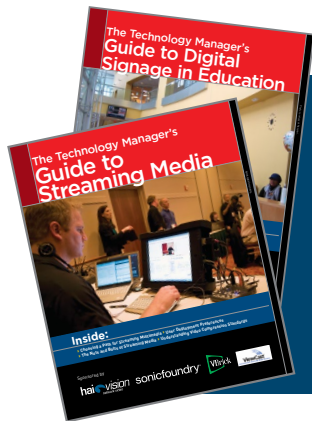
We put a lens on the cameras that make the video conference possible, from PTZs for various corporate meeting spaces to intelligent tracking and framing cameras for auditoriums and classrooms. We also explore the display technologies that are enabling distanced and hybrid collaboration.

Video production rooms used to be reserved for high-production-value broad-

casts of live events. But COVID has shined a light on the need for high-production-value streaming of all-hands meetings, town halls, and distance learning. We explore the equipment used to create the new production room.

We would love to hear how you have adapted and reinvented your meeting and learning environments that will take your organization into the future. Drop us a line.

Be well, and be safe.



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# Seeing Clearly

*New camera technology helps drive the videoconferencing revolution*

By Cindy Davis

During the pandemic, cameras and videoconferencing have kept remote participants connected. As classes resume and guidelines enable return to work, videoconferencing remains essential to include students and workers still at home.

"There has been a rush to install cameras in classrooms and corporate meeting spaces, but the needs are different now from before," said Rony Sebok, VP at 1 Beyond. Larger spaces where social distancing is possible need more robust cameras than what would be used in a huddle room. "These larger spaces need high-quality 20x optical zoom cameras. A single camera is not sufficient; it can't capture the presenter and audience or the entire space if it's a larger room. Automated camera switching is essential to give remote participants a view of who is speaking."

## Camera Technologies

Recent camera technology developments are more cost-effective than predecessors and are making it possible to outfit all meeting spaces with that experience. Tracking technologies provide close-ups of participants ePTZ (electronic PTZ) with auto-framing capability, and automated switching based on the active speaker improve presenter tracking using facial detection cameras that can locate a handheld microphone in an audience. Higher resolution cameras and higher network bandwidth provide detailed visuals near and far.

And AV-over-IP cameras are quick to set up and control.

"The best camera solution depends on the size of a given space and how it's used," 1 Beyond's Sebok said. She provides the following as a guide.

**Huddle Rooms:** 4K ePTZ cameras with a wide field of view capture the entire room and crop a portion of the image, imitating the experience of a moving PTZ camera.

**Small Meeting Rooms:** Smart PTZ cameras with longer optical zooms, such as the 1 Beyond AutoFramer camera, can provide quality auto-framing of participants at a greater distance.

**Training Room/Classrooms:** Presenter cameras use motion and facial detection for tracking. No operator is needed for smooth tracking with a 1 Beyond AutoTracker camera. To include audience Q&A, the new 1 Beyond AutoFinder camera automatically locates a handheld mic.

**All-Hands, Multi-Use, Town Halls:** Voice-activated switching solutions eliminate a production crew and auto-point cameras at whoever is speaking. The latest solutions switch between multiple cameras around the room and work in larger spaces.



## In Their Own Words

We asked executives from leading manufacturers to share their insights on videoconferencing camera technologies for today and the post-COVID environment.



### 1 Beyond Rony Sebok, VP

Previously, voice-triggered tracking solutions were limited by their technology (built-in mic arrays with two cameras mounted side-by-side) to smaller spaces with boardroom-style seating. Newer solutions, like the 1 Beyond Automate VX, take advantage of the mics and DSPs used for audio to aim the cameras, and can have up to 10 cameras located anywhere in the room. This enables using this technology in rooms





Diversified equipped Legendary Entertainment's new headquarters with videoconferencing, a screening room, a video effects room, and an IPTV system. Image: Diversified

where tracking was not possible before—exactly those spaces where people need it in now—the larger boardrooms, multi-purpose rooms, and classrooms.

Presenter-tracking solutions that relied on IR sensors or voice were not reliable. The newer technology (for example the 1 Beyond AutoTracker) uses facial and motion detection for smoother tracking with technology that has evolved and improved over the past decade. Automation enables hands-free operation—no AV personnel needed for operation.

An investment today will have payoffs into the future. Many who thought remote work could not be effective now see it's possible, and the technological innovations being introduced now will enable a hybrid mode of work and learning that many believe will continue after the COVID-19 crisis is over.

Equipping classrooms and meeting spaces with advanced automated camera solutions today will enable flexible work and learning environments into the future. The corporations and schools that adopt this technology will be the ones to attract students and workers.



**Atlona**  
**Adam Griffin,**  
**Regional Sales**  
**Manager, Northeast**

The general public working and learning from home today knows how conferencing platforms like Zoom and Teams are a daily part of remote business and communication. These represent the delivery methods we have all grown to rely on. As remote meeting and learning operations evolve into more perma-

nent scenarios, businesses and learning institutions are discovering that enhancing the endpoints will capture sound and picture in a professional and high-quality manner and improve the collaborative experience.

The commercial AV industry continues to see an evolution in PTZ camera technology to achieve these goals. The camera built into the home-office laptop is feasible enough for a standard conference call. Today's PTZ cameras bring greater value for more specific business purposes.

For example, cameras with dual-connectivity options continue to evolve to suit emerging applications in corporate videoconferencing and distance learning applications. One ideal configuration is a PTZ camera with an HDMI output plus a USB 2.0 interface to support a simultaneous video output. For corporate applications, the presenter can easily create a dual-monitor environment in

their home office. One connection supports the live presentation, and the second provides a confidence-monitoring feed to ensure that the transmitting quality is stable and optimized.

Distance learning applications also benefit from a dual-output scenario. For education purposes, an instructor can use one output for live instruction, and leverage the second to initiate lecture capture. The biggest challenge many educators face is ensuring that remote students can experience lessons and lectures in real-time. The instructor can benefit these efforts by using advanced camera technology, whether at home embracing a fully virtual instruction model, or teaching from the classroom as part of a hybrid learning initiative.

Inside the classroom, USB peripherals can further assist in moving camera signals around the classroom. These technologies help instructors not only move video from cameras, but also signals from USB microphones and other peripherals to soft-codec conferencing platforms and lecture capture devices.

As we grow more de-centralized as a workforce and embrace hybrid learning models, the technology will need to evolve to improve content sharing and presentation. The continued evolution of PTZ camera platforms will help businesses, schools, and universities more effectively achieve their goals of a higher quality collaborative remote meeting and learning experience.



**HuddleCamHD**  
**Paul Richards,**  
**Director of**  
**Business**  
**Development**

As the COVID-19 crisis shifted millions of formerly in-person students and workers online, it became incredibly clear how important body language and facial expressions are for effective communication. Camera technology must allow remote participants to discern individual reactions.

That is easy to accomplish for fully remote meetings, when everyone is seated at a desk in front of a webcam. Hybrid contexts, with some remote and some in-person participants, are more challenging. As the country returns to work and school, businesses and education facilities must challenge themselves to maintain an equal experience for the millions who remain at home.

Remote workers and learners deserve equity of voice with their in-person peers—that is, the ability to speak and hear on the same level as those in the room. In order to “hear” nonverbal exchanges, remote participants need to be able to see the whole room, focus on individual speakers, or change their field of view.

The burden for providing equity should not fall entirely on in-person staff. The workers, teachers, and students using cameras to collaborate are largely technological laypeople. Many enterprises are also charged with dramatically increasing their technological footprint without growing their support staff; in-room operators are a luxury few can afford.

Next generation camera technology fills in the gaps with smart tools, artificial intelligence, and platform integrations that empower remote participants. The smartest cameras make the technology disappear—allowing for natural interactions that mimic in-person communication. A wide field of view ensures everyone attending a socially distanced meeting is visible. Built-in array microphone technology ensures that all participants are not only seen but also clearly heard. Auto-framing makes it easy to focus on an individual speaker’s body language and expression, while remote camera control options can allow remote operators to refocus on a whiteboard or presentation area, or simply “read the room.”

When the pandemic eventually abates, hybrid learning and working environments and their attendant millions of videoconference users will remain. Camera technology needs to be smart enough to be user-friendly, and powerful enough to facilitate genuine human connection.



**Logitech**  
**Simon Dudley,**  
**Head of Analyst**  
**Relations and Sales**  
**Enablement**

Without a doubt, COVID-19 has significantly impacted our lives across the board—including healthcare, personal connections, and the workplace—especially when it comes to meetings. Historically, 75 percent of employees’ time has been spent in meetings, and this is still the case; the only thing that’s changed is where and how these meetings are held.

Prior to the pandemic, only 4 percent of meet-

**“Studies show that in-person and video interactions are equally as gratifying and productive.”**

**—Simon Dudley, Logitech**

ings were over videoconferencing, but now that’s grown to 60 percent. Given this shift, access to the right type of technology becomes crucial to the success of any virtual meeting.

Key technology, including software, headsets, and webcams, allow attendees—no matter where they are located—to track everyone’s physical nonverbal cues that are important for clear communication. In fact, studies show that in-person and video interactions are equally as gratifying and productive—scoring a 3.4 in satisfaction on a five-point scale. Meaning that with the right equipment, including the latest in video, interactions can be even more productive.

So, what will happen with video once we forge through this pandemic? Will we slowly see a resurgence of in-person communication and a decrease in videoconferencing? Absolutely not! Businesses now understand that remote productivity is possible, with many companies including Facebook, Twitter, and Slack now allowing their employees to permanently work from anywhere.

Organizations are seeing the increase in productivity that the internet promised but never delivered. People truly can chart a better future for themselves, their families, and society when distance becomes irrelevant.

With hybrid and fully remote environments on the horizon, video will become a permanent fixture in every company’s DNA—providing that lifeline and red thread connecting every employee from every location.



## Improve Hybrid Meetings and Classes with Automated Camera Switching



Using popular DSPs like Biamp, Shure, & QSC and the microphones in the room, the **1 Beyond Automate™ VX solution** switches to the active speaker.

Use with up to 10 cameras, including 1 Beyond AutoTracker™ camera for smooth presenter tracking.

Works with wide range of microphones, including ceiling arrays, desktop, & pendant mics.

Live stream, record and/or video conference with traditional or soft codecs like Zoom.



Traditional single camera view



With automated camera switching

### Works in any shape or size room including:

Classrooms & Training Rooms

Conference & Boardrooms

Council Chambers

Auditoriums & Lecture Halls

Multi-Purpose Spaces



Georgia Career Institute installed 16 Google Jamboards across its three campuses, enabling it to launch a new virtual program for its theory classes. Image: BenQ ECS



# The Big Picture

*New display solutions foster success in the new office and educational landscape*

By Cindy Davis

In March, universities were among the first of the large institutions to send students and faculty home due to the threat of COVID-19. For some, an early spring break provided a small window for planning on how to facilitate remote learning, en masse. As fall classes began, AV/IT directors, educational technologists, and instructors were ready for the hybrid classroom where some students would be in class while others would join via videoconference.

Educational institutions of all disciplines and sizes have geared up for hybrid and remote learning. While salons and beauty shops were closed due to the pandemic, the career training school Georgia Career Institute (GCI) in Conyers, GA, which prepares students for careers in hair, beauty, and wellness, needed to continue instruction.

"Our priority was ensuring ease of transition: whatever solution we chose, our teachers would have to learn it almost overnight," said Lauren Davis, regional director for GCI. Administrators began searching for an interactive display that would integrate well with the school's Google Classroom platform, and decided on the Google Jamboard, an all-in-one 4K UHD interactive display from BenQ and Google that is ready to deploy out of the box. "Jamboard supports what they already know: Google. It wasn't foreign, so they could get started right away without fear of moving into the remote model or creating a bad experience

for our students."

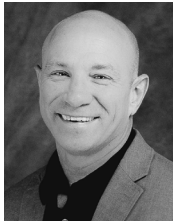
GCI installed 16 Jamboards across its three campuses, and in a matter of weeks, the institute was ready to launch the new virtual program for its theory classes. The familiar Google platform and tools allowed teachers and students to seamlessly share files without introducing new workflows. A videoconference is easily launched by tapping the onscreen app or the meeting reminder in the calendar, and the class connects virtually via the integrated Google Meet videoconferencing service.

"Our long-term goal is that I can have theoretical teachers in one location teach institution-wide," Davis said. "This would give us consistency across the board and allow us to work to our instructors' strengths and specialties."

An unintended result of incorporating a remote videoconferencing solution is that GCI can now expand the number of students without incurring additional real estate costs.

## In Their Own Words

We asked executives from leading manufacturers to share their insights on videoconferencing and collaboration display technologies for today and the post-COVID environment.



**Avocor**  
**Dana Corey, GM/SVP**

The impact from COVID-19 has put a spotlight on remote work and meetings and how they play a role in maintaining business continuity, now and in the future. As social distancing and COVID-19-related regulations allow for schools and companies to open, campuses and offices are facing new challenges as hybrid remote and in-person models take hold.

Digital transformation remains an untapped potential. Collaboration and unified communications technology are a critical part of business plans now and in the future to support distributed teams. Management teams across the enterprise and campus must be able to create in-person meeting and instruction settings that support the need to seamlessly bring together both hybrid teams, to support productivity and long-term success.

Collaboration technology, such as interactive displays, that provide touchscreen capabilities as well as integration with popular videoconferencing software such as Zoom and Microsoft Teams, provide the ability to easily connect and share ideas from wherever students and faculty are learning and working—home or office. They also provide the added ability to share and engage with cloud-based, real-time annotations from everyone in a class or meeting and then save and send as notes to access afterward—enhancing engagement and teamwork between hybrid groups.

To effectively bring teams together, companies and organizations will need to invest in technology, such as interactive displays, to support hybrid work and learning models now and in the future.



**BenQ**  
**Claire Lin, Senior Product Manager, BenQ Enterprise Collaboration Solution and Google Jamboard**

Before the pandemic, businesses were already seeking solutions offering wireless casting, collaboration, and conferencing that can be launched right from the screen. Since COVID-19, there has been a dramatic increase in demand for interactive flat panels (IFP) that enable productive meetings within a scattered workforce. Now, organizations are leaning heavily on these tools to streamline hybrid-remote meetings while maintaining social distancing.

One display trend that took shape in education a few years ago and is now being seen in enterprise is the need for contactless and germ-resistant surfaces. Displays such as BenQ's DuoBoard, which have a germ-resistant screen and air-quality sensor, help businesses balance health and safety with productivity. Furthermore, cloud-based tools and wireless casting, such as those offered within the EZWrite platform enhanced with InstaShare wireless presentation system, eliminate the need to touch the screen to participate and contribute. Remote and in-person users can interact from their own device—no matter where they're located. They can present videos, spreadsheets, and websites and annotate on them or take notes from the digital whiteboard option. Personalized account management tools allow participants to access and utilize network drives and cloud storage, such as Google Drive or Dropbox, to save and disseminate any work. For Zoom-centric businesses, BenQ's IFPs will be integrated with the Zoom platform out of the box.

The pandemic has also highlighted the need for robust, dynamic, and flexible displays capable of presenting multiple applications and documents from multiple devices simultaneously—regardless of operating system. Naturally with more participants joining meetings remotely, more screen real estate has to be devoted to videoconferencing windows and more applications. Screen capabilities, such as the DuoBoard's Duo Windows, permit two applications to be open concurrently, without having to click between applications. Comparing documents, writing notes during a videoconference, or searching the web while brainstorming can be done at the same time, effortlessly. While the pandemic has curtailed face-to-face meetings, the supercharged cloud-based IFPs that have come to market in the last few years are aligned and ready for the remote future.



**Crestron**  
**Andrew Gross, Director, UC Enterprise**

Before the pandemic, display technologies for collaboration and videoconferencing were common, but not ubiquitous. Audio calls were still commonplace, but now, videoconferencing has become a daily activity and digital collaboration is a necessity. Meeting spaces and lecture halls are being reimagined with technology as the centerpiece to connect teams from anywhere. In a survey of our corporate customers, 50 percent are doubling plans to add more videoconferencing in the next two years.

For example, Fishtech expanded its Crestron meeting room systems in its four offices with native Zoom Rooms to connect employees at home and in-office with a consistent user experience. Crestron systems are in other corporate facilities for Fortune 500 companies and higher education universities across the country. To suit the needs of today's office, we innovated wireless connectivity for less contact with display and videoconferencing system communal controls, which can simplify sanitation. Crestron ONE is a new solution allowing employees to control meeting spaces from their personal device by scanning a QR code on a touchscreen to access the controls to a personal device.

Universities and colleges had a different transition path: prior to the pandemic, they were a fully in-person or online-only format. Now, many are taking a hybrid approach and must rely on display technologies to bridge between the professors and students in classrooms with those learning from home. Crestron systems control projectors and other displays in classrooms and lecture halls, and we also created the Crestron Flex R-Series as a cost-efficient and easy-to-deploy mobile collaboration cart. Our clients have used it to rapidly equip any room with conferencing and collaboration—with native Microsoft Teams and Zoom Rooms.

The evolution of the workplace and learning environments isn't over, and universities and businesses will continue to be reliant on display technologies and systems that can allow them to adapt to support employee and student safety. With many existing solutions in place, Crestron listened to our clients to rapidly innovate new solutions to support both the work and home office, and we're not done yet.



***“We should expect to see more displays equipped with sensors to detect workspace environmental factors, such as temperature and humidity, that can help leaders determine how to make their spaces healthier.”***

*—Bob Madaio, Sharp*



**Epson**  
**Mark Roslon,**  
**Senior Director of**  
**Product Marketing,**  
**Commercial**  
**Projection**

COVID-19 has had a profound effect on how we interact in business, educational, and personal settings. Virtually overnight we all had to adapt to the widespread use of videoconferencing technologies and platforms for the purposes of instruction, learning, collaboration, and communication. As we progress through the ebbs and flows of the pandemic toward a “post-COVID-19” future, we can expect a continued need to maintain social distancing within meeting rooms and classrooms, and the ability to accommodate in-person and virtual participants. Large, cost-effective displays will become more important than ever to ensure that everyone can easily see not only all the content that is being shared, but also all the other participants. Anyone that’s been on a videoconference with a presentation and a gallery of four or more people on the screen will attest that a 65-inch display just won’t cut it. The new standard will be a display offering viewing area more than double that size.

Laser projectors are the latest display technology to enter the AV market, and are changing the

way people think about videoconferencing. Laser projectors can produce big, bright images up to 300 inches at superior cost to flat panels, while offering a similar lifespan and low maintenance. They also offer greater installation flexibility in a broader range of aspect ratios to fit a variety of display needs, such as a side-by-side of the presentation and the participant gallery.



**NEC Display**  
**Solutions of**  
**America**  
**Ryan Pitterle,**  
**Product Manager**

What we have learned during this pandemic is that flexible technology options will enable us to operate as necessary across learning environments and meeting spaces. For example, in the classroom, teachers can easily shift to hybrid learning models as necessary using projection hardware and software that already exists in the classrooms—including short-throw projectors, an interactive collaboration board, and software to share content. The ability to utilize these tools maximizes student engagement, collaboration, and information retention whether in-person or remote—or both. The pandemic has given educators and administrators the opportunity

to reimagine what the student experience looks like, and to truly lean into the technology that exists to create new collaborative learning environments for today and beyond.

Collaboration will happen from devices in students’ hands, displayed to the class through a projector. Ultra-short-throw projectors, such as NEC’s UM383WL, are mounted close to the wall and above the screen—reducing shadowing and maximizing visibility for in-room and at-home students. This enables students to feel like they are all in the same classroom, even when some students are remote.

Flexibility doesn’t stop at the classroom level. Board meetings and stand-ups will also benefit from flexible technology solutions in a post-COVID-19 world. As companies begin to start working from the office again in some capacity, integrating a solution that makes meeting quicker and more efficient for less face-to-face time is the ideal situation. Gone are the days of a meeting with nothing but action items. Using a flexible set of software and hardware solutions delivers companies the ability to collaborate with a large group—both in-person and remotely.

Utilizing technology solutions within the office has created the ability to facilitate faster decision making and increased productivity through real-time collaboration.



**Samsung**  
**Mark Quiroz,**  
**Vice President Sales,**  
**Marketing, Business**  
**Development**

Display technology is poised to play a critical role in the way students, teachers, and administrators begin their return to classrooms in a post-COVID world. As a leader in visual display, Samsung understands the demands and challenges that those in education face today and the heightened importance of providing technology solutions to ensure learning can happen from any location. As such, Samsung developed a complete ecosystem of display products, solutions, and partnerships optimized for all phases of the back-to-school approach, including remote learning and hybrid teaching models.

Institutions implementing hybrid and remote learning can install Samsung Pro TVs throughout their campuses to connect buildings and easily communicate system-wide updates. Teachers and

administrators can easily update messaging on the Pro TV with the Samsung Business TV app, which features 100 customizable templates that can be uploaded conveniently from mobile devices. Several new templates were recently added with education themes in response to the pandemic, which can be leveraged to display general facility updates as well as reminders on safety guidelines. Additionally, they can be used to connect students joining the classroom remotely by displaying students on the screens, so they are an integrated part of the lesson and to conduct parent-teacher conferences.

Now available in 85 inches, Samsung's Flip display is designed to meet the digital demands of modern education. Flip's large interactive display and web connectivity approach to the traditional whiteboard allows educators the flexibility to deliver lessons seamlessly to students within a classroom and those learning remotely. The Flip 2, 55- and 65-inch touch displays on portable wheel-based stands allow educators to transition from teaching an art class in a traditional classroom to a

locker room to build a coaching plan.



**Sharp Imaging and Information Company of America**  
**Bob Madaio,**  
**VP of Marketing**

With the increase in remote and hybrid work environments, COVID-19 has caused a shift in how we use many technologies, including displays. From conducting meetings in a corporate setting to teaching in a virtual classroom, the need for remote integration and collaboration has increased significantly.

As we return to the office, a critical business need is ensuring that employees have access to technology and applications they have become used to at home. We are likely to see businesses invest in video collaboration, simple connectivity, and quality cameras for a more seamless experience. Tools like Windows collaboration displays provide an interactive solution that is ideal for a remote or

hybrid setting—enabling productive collaboration. As BYOD becomes the norm and videoconference usage spikes with applications such as WebEx, Zoom, and Microsoft Teams, simplicity matters more than ever.

Businesses are also looking to implement greater mobility—ensuring anytime access to content on any device, and including sharing capabilities. Embracing mobility can ensure successful business continuity in the event of future disruptions. Another way in which businesses are looking for more flexibility is by moving toward more pay-per-use models—starting with leases and increasingly cloud-based subscriptions instead of direct purchases. Display manufacturers that adapt to this trend may see increased benefits as they demonstrate their versatility to dealers and end users.

Of course, health and safety are top-of-mind for all businesses at the moment. This has led to organizational leaders to look at display technologies as potential IoT end-points that can help access data about conference rooms to make smarter decisions about workspace usage. We should expect to

## Prepared to Flip

*In preparation for students to return for the fall school year, the team at Brentwood Academy knew they needed a flexible solution to be ready for in-person learning, while having the ability to quickly shift to hybrid or complete virtual learning.*

*"We took the time to reflect on the current conditions with COVID-19 while school wasn't in session," said Chris Allen, IT director. "We were exploring options for systems that would enable us to adapt to a changing climate—whether during a complete lockdown or if staff or students needed to self-quarantine."*

*"We put 65-inch ViewSonic ViewBoard displays in every classroom. They are the core of our hybrid-ready virtual learning environment," Allen said. "Along with the myViewBoard software, they connect all the pieces of the system together. Because they're agnostic, they are very open to other tools that our teachers use, like document cameras and even legacy VCR players."*

*Standardized around Microsoft 365 Education, Brentwood moved from Zoom to Microsoft Teams for video collaboration. The integrated ViewSonic ViewBoard audio was sufficient for each classroom. Intel NUC small form factor PCs power each classroom setup while cloud-based ViewSonic myViewBoard software delivers in-person white-*



Image: ViewSonic

*boarding capabilities and the ability to prepare materials and present from anywhere.*

*"The myViewBoard software combines everything we needed to teach under any circumstances," said Jeff Bryant, dean of academics, who worked with Allen to develop the new system. "From the first time I saw it I was impressed with the ability of the ViewSonic solution to provide interactivity between teachers and students at a really responsive rate and be adaptable to hybrid scenarios."*



see more displays equipped with sensors to detect workspace environmental factors, such as temperature and humidity, that can help these leaders determine how to make their spaces healthier.

Looking beyond the pandemic, many organizations are likely to maintain some sort of hybrid work environment. Effectively using collaboration technology within our new normal can help encourage teamwork—allowing users to easily connect and share ideas and information in a comfortable environment, whether they are working in a meeting space, home office, or anywhere in the world.



**Sony**  
**Rich Ventura, Vice  
President of B2B,  
Sony Electronics'  
Imaging Products  
and Solutions  
Professional Division**

Sony's technology is integrating into COVID-19 environments and positioning itself for use during and beyond the pandemic. As businesses and learning institutions adapt to touchless, remote, and hybrid environments, technology is helping to connect students and colleagues, and provide engaging and versatile working and learning opportunities. As we look to the future, we know that learning and collaborative spaces are already transitioning to rooms and spaces requiring the use of larger display technologies due to social distancing requirements, and we don't expect that to change anytime soon. That's why larger displays and sophisticated camera solutions are at the forefront and are increasing in importance in these hybrid environments. Dynamic imagery continues to support immersion, collaboration, and retention—no matter where an audience is situated.

Sony prides itself on delivering high-quality tools that enhance and elevate experiences. Our PTZ camera lineup offers a range of options, which can be operated remotely, to meet schools and companies' needs. From the detailed imagery of our 4K offerings, to flexible NDI integration, PoE, and a variety of form factors, these diverse cameras enrich presentations and help provide meaningful connections between audiences and presenters. Paired with our AI-based Edge Analytics appliance, users can select smart software enhancements to enable PTZ auto-tracking, handwriting extraction, and presenter overlay, as well as chromakey-less CG

overlay and focus area cropping.

Over the last few years, we've also renewed our focus on display technology. Our BRAVIA professional displays combine the latest technology—boasting 4K, HDR, and System on a Chip architecture, with powerful image quality that comes in a wide range of sizes to accommodate spaces of every size. Featuring an Android-P OS, and mirroring with Apple AirPlay 2 and Chromecast, users can feel confident and secure operating the display from their personal devices. Through alliances with other technology manufacturers, we've added even more capabilities and connections so users can select additional software options, including room solutions, cloud-based signage solutions, and integration with collaboration tools to meet their specific requirements.



**ViewSonic**  
**Jeff Volpe,  
President**

Educators are facing an unpredictable future, as debates continue over learning models during this unprecedented pandemic. Decision makers are looking at flexible options to pivot from classroom to remote and back again, as situations and environments change.

A hybrid learning model that combines a mix of in-classroom and online learning currently represents the most adaptable approach at this moment. Since there is no standardized approach yet, definitive decisions are not easy to find. However, the hybrid/blended model seems to be one that will likely be here to stay.

The hybrid learning model has shown educators the need for fully integrated collaboration tools that support an end-to-end, flexible learning ecosystem. These software and hardware tools must be reliable, scalable, and most importantly, easy to use to meet the needs of a constantly shifting classroom model—whether it's delivering lessons to students at home or in a classroom.

Schools have already incorporated emerging technologies into the classroom, which allows for more student engagement and innovative teaching. This pandemic has accelerated the pace of what many educators see as more independent learning in the classroom—allowing students to learn at the speed that works best for them.

This next generation of students is essentially the first digitally native generation; they have come

to expect virtual connectivity and digital learning. With this new digital landscape, we're looking at a type of "flipped classroom" environment where students consume content on their own, self-navigate, then ask questions.

With this possibility taking place now, ViewSonic developed a distance learning initiative with the myViewBoard ecosystem. It provides schools an easy and safe way to create an online learning environment. From organizing digital assignments to creating digital content, the myViewBoard solutions offer classroom interaction in a digital space. It allows teachers to reach students with a platform that provides a way for teachers to share and get feedback from students.

***“Large, cost-effective displays will become more important than ever to ensure that everyone can easily see not only all the content that is being shared, but also all the other participants.”***

***—Mark Roslon, Epson***

# Streaming Studios

## *Upgrading your presentation setup to professional caliber*

By Cindy Davis

During the first months of the pandemic, instructors and presenters were forced to broadcast classes and meetings using laptop webcams, sometimes a headset, almost always poor lighting, and in some corner of their home that wasn't fit for all to see.

We recently heard of a trend to outfit a classroom or meeting room with AV equipment that will deliver a higher-quality production, and where the instructor or presenter is live streamed to a completely remote audience.

We asked Matt Allard, senior product marketing manager at the Vizrt Group, NewTek, and Chris Wissinger, global strategic product marketing manager, professional AV at Roland to share their insights on the new production room trend.



**Vizrt Group**  
**Matt Allard**

Inexpensive cameras with incredible features are appearing with increasing frequency due to the explosion of valuable content that needs to be processed and delivered. For the education and corporate space, we see lecture capture software, graphics and editing applications, conference rooms, displays, projectors, video walls, and the internet all as viable distribution platforms in today's world. Thankfully, capabilities that formerly cost millions of dollars are now a few taps away on keyboards or mobile devices.

Pan-tilt-zoom (PTZ) cameras mounted in different positions around a filming location have become a staple for many types of remote learning and working environments. They are compact, easy to install, and offer extensive control functionality. Features like camera movement and autofocus are

nothing new, but these cameras are now available with advanced features like motion tracking and IP connectivity. Thus, cameras can be deployed easily with a single Ethernet cable using an IP protocol such as NDI. These devices use standard Ethernet networks with no specialized cabling. Some cameras even support Power-over-Ethernet (PoE)—eliminating the need for a nearby electrical power outlet.

While PTZ cameras are a standard production component for many programs, the use of cameras on devices is also rapidly increasing. The cameras found in various smartphones and tablets are dramatically increasing in quality and functionality. An ecosystem built around these types of cameras is growing—offering various mechanisms for mounting the devices or holding them in a stable manner while moving around. Software applications for the devices provide the crucial link to make the camera output available as live sources in production environments related to remote meetings. Through a Wi-Fi connection using NDI, the devices become inputs into a live production system, to be switched in real-time just like any other camera source.

For those organizations that can justify dedicated video cameras or specialized DSLRs, these cameras, typically mounted on tripods, will continue to be useful for some productions. In an environment using IP, there are converters for cameras to add them to networks.

This allows learning, meeting, and conferencing environments to leverage visual connections not just with expertise—but with ease.



**Roland**  
**Chris Wissinger**

The growing demand for videoconferencing post-COVID-19 requires solutions that empower people without production experience or high-end production budgets to achieve great results. All-in-one livestreaming production solutions like Roland's VR-series provide the video switching, audio mixing, and streaming interface that a single operator needs. With social distancing safety requirements in place, the more that can be done by a single operator, the better in most cases. Automation features—such as auto-mixing for audio, auto-switching based on audio cues, and integrated design—reduce the number of people required to produce a professional production.

It's also important for anyone looking to produce professional videoconferences to know that affordable HDMI cameras and smartphones with good lighting can achieve high-quality results that meet their needs without the expense.

Roland's V-series offers many solutions to increase production values while keeping setup and experience needs simple as well. The new V-1HD+ HD Video Switcher paired with the new UVC-01 USB Video Capture is an example. The UVC-01 allows users to easily convert the HDMI output of a V-1HD+ into a USB 3.0 webcam feed that is plug-and-play for HD livestreaming on Facebook Live, YouTube, Zoom, and other popular platforms. Together these two products can both enhance and simplify single-operator setups with benefits like versatile I/O and deep editing. Plus, with the UVC-01, no drivers or fussy setups are required.





## New Products

*The latest products for pro-quality video production and display*



### 1 Beyond Automate VX

The 1 Beyond Automate VX solution brings the full multi-camera studio experience in an automatic hands-free system to all-hands meetings, town halls, and classrooms. All the camera switching and movement is done automatically based on voice activation. The Automate VX system has built-in recording and streaming capability along with customizable multi-source layouts, which can include PC and iOS inputs, graphics, titles and up to 10 cameras. This provides enhanced viewing options for the far-end, like picture-in-picture or side-by-side with content, easily live-streamed or output to conferencing codecs such as Zoom.

[1beyond.com](http://1beyond.com)

### Atlona HDVS-CAM

Atlona has expanded its HDVS-CAM family of enterprise-grade PTZ cameras with two camera models purpose-built for HDBaseT and HDMI interfacing. The AT-HDVS-CAM-HDMI and AT-HDVS-CAM-HDBT join the original AT-HDVS-CAM (with USB 2.0 interface only) to provide integrators with flexible options for videoconferencing, lecture capture, distance learning, and other applications. The new models offer a similar feature set, including professional-quality imaging for video resolutions up to 1080p at 60 Hz, fast and accurate auto-focusing, and a quick pan-and-tilt mechanism with minimal noise.

[atlona.com](http://atlona.com)



### Avocor AVW-6555

Featuring an advanced interactive display, natural inking, and innovative IoT sensor technologies, the Avocor AVW-6555 Windows collaboration display is the world's only certified Teams WCD. Designed to enhance collaboration and accelerate teamwork, the Avocor AVW-6555 also provides meaningful analysis of meeting space utilization through the integrated certified Azure IoT sensors. Well suited for focus rooms, the AVW-6555 also includes full Microsoft Teams support, providing seamless integration with Teams video and audio conferencing capabilities immediately upon connection to a Teams-enabled computer. Access to the full suite of Microsoft Office 365 productivity tools supports sharing of content from anywhere, and teammates at every endpoint can instantly annotate to share ideas, support creativity, and solve problems in real time.

[avocor.com](http://avocor.com)





## HoverCam Solo 8Plus

HoverCam's Solo 8Plus is the must-have document camera for blended learning. Compatible with Zoom, Google Meet, Microsoft Teams, and Skype, it gives students a front-row seat to learning. Teachers don't have to wrestle with webcams, which can't effectively display content and demonstrations. Data shows students achieve goals with effective engagement. Solo 8Plus' embedded Flex 11 software delivers immersive and dynamic lessons with picture-in-picture, annotation, digital whiteboard, lesson recording, and more. The software is integrated with Zoom, allowing teachers to launch sessions from Flex 11. The portable, compact Solo 8Plus is designed for intuitive operation. Simply plug the USB into a PC, Chromebook, or Mac. No power adapter is required.

[hovercam.com](http://hovercam.com)

## NEC CB Series

NEC Display's CB Series, short for Collaboration Board, brings together a variety of software and hardware solutions to create the optimal collaboration space. The hardware creates an interactive whiteboard suited for education settings, including K-12 and higher education, as well as for corporate training environments. CB Series runs Mosaic Connect and Canvas software and features a responsive touchscreen display. Quickly and easily navigate through a clean, efficient workspace. An included stylus empowers easy annotation on the screen. Wirelessly share your work from up to four devices. [necdisplay.com](http://necdisplay.com)



## Panasonic PTZ

For many educators, superb video quality, interactive live streaming, and recording will play a big role in supporting their hybrid or remote classroom instruction. Professional pan-tilt-zoom (PTZ) cameras, such as Panasonic's AW-HE38 through the 4K/HD AW-UE150, feature high-quality imagery, a wide field of view, and optical zoom lenses to help replicate the in-class experience, and enable lectures to move freely around the classroom. The cameras' built-in auto-tracking software and ability to integrate with lecture-capture systems simplify camera operation—allowing instructors to focus on their content while the camera operates automatically. With IP connectivity, NDI support, and either PoE+ or PoE++, Panasonic PTZ cameras offer quality video and installation flexibility for streaming video.

[na.panasonic.com](http://na.panasonic.com)



## Crestron Flex MM

Crestron Flex MM is a compact solution designed to deliver best-in-class audio and videoconferencing to any office or newly converted home workspace. Crestron designed Flex MM to unify the call experience between the home and the office—delivering native support for Microsoft Teams and Zoom Rooms, with a consistent experience to start meetings with one touch. The 7-inch touchscreen features an ultra-wide-angle HD camera, and a mic with a 10-foot range, backed by remote management and enterprise-grade network security. Crestron Flex MM is easy to install and is available in both audio-only and videoconferencing models.

[crestron.com](http://crestron.com)



## Roland V-1HD+

The Roland V-1HD+ HD Video Switcher is designed for professional HD switching for live events, livestreaming, or both at once. A stand-alone video switcher and 14-channel audio mixer for single operators, it has the benefit of being compact and portable for fast setup, as well as having an interface that is quick to learn and easy to use. It has eight memory presets to recall visual layouts on cue, technology-assisted automatic video switching, as well as four layer effects and keying engine to engage audiences with graphics, lower thirds, and social callouts.

[proav.roland.com](http://proav.roland.com)



## NewTek TriCaster Mini 4K

The TriCaster Mini 4K is a complete, compact live multicamera video production system with features like Live Story Creator and LivePanel, designed to make the production of network-quality content easy for lone producers or small teams—whether they are novice beginners or seasoned video professionals. In addition to traditional live production capabilities, the TriCaster Mini 4K includes two channels of Skype input for simultaneous guest contributors to participate from their studios, laptops, or phones. TriCaster Mini 4K will also ship with two recently announced Spark Plus IO 4K60 encode/decode converters, enabling IP-based, NDI-first workflows using existing cameras.

[newtek.com](http://newtek.com)



## Poly Studio X30/X50

Poly's Studio X30 and X50 are all-inclusive video bars in sleek packages that work natively with Microsoft Teams and Zoom without a PC or Mac, and are engineered to support nearly all leading cloud video services for seamless collaboration in the workplace or classroom. Designed with Poly's signature NoiseBlock AI and Acoustic Fence to minimize background noises, advanced camera features such as speaker tracking and automatic group framing and wireless content sharing capabilities, the Studio X line is purpose-built and fits easily with displays for convenient videoconferencing and collaboration without cables and plugs.

[poly.com](http://poly.com)

## HuddleCam Pro/Pro IP

With today's virtual work, learn, and entertain movements, having the right videoconferencing equipment is important. The HuddleCam Pro (USB 3.0), certified by Zoom Video Communications, and the Pro IP (4K NDI) electronic PTZ webcams come with a handheld IR remote to control PTZ functions and feature 4K video with a dual-microphone array. The HuddleCamHD Pro and Pro IP webcams can clamp to a monitor, attach to a tripod, or mount to a wall—delivering a simplified videoconferencing and live streaming solution for any application.

[huddlecamlhd.com](http://huddlecamlhd.com)



## Sony Professional BRAVIA

Sony's Professional BRAVIA 4K HDR Display lineup—ranging in size from 55 to 85 inches—combines flexibility, connectivity, and ease of use with superior picture quality. The slim, energy-efficient displays offer increased picture performance and brightness, a more powerful processor, and both 2.4/5GHz WAP support. They also boast a SoC platform, Android operating system, and redesigned cosmetic features—including new terminal positions, a flat bottom bezel, and a reinforced structure that is optimized for the B2B market. Pro mode allows quick and easy customization to suit different environments, while One Step Setting optimizes display settings for signage and conference rooms.

[pro.sony](http://pro.sony)



## Vaddio RoboFLIP 30

Enclosed within its recessed ceiling-mounting case, the RoboFLIP 30 HDBT In-Ceiling HD PTZ Camera is designed for capturing events or videoconferencing where active video status is of critical importance. The RoboFLIP 30 HDBT camera fully rotates into its enclosure when in standby mode—allowing room occupants full assurance video feeds are not active. With its unique “flipping” design and Vaddio’s Tri-Synchronous Motion technology, the camera silently rotates, providing ultra-smooth, simultaneous pan, tilt, and zoom functions for natural camera motion. The RoboFLIP 30 HDBT is well suited for both security or design-conscious customers, yet maintains Vaddio’s high standards for performance, network manageability, and ease of use.

[legrandav.com](http://legrandav.com)

## ViewSonic ViewBoard IFP6550

The ViewBoard IFP6550 is a third-generation 65-inch 4K interactive flat panel. It features a 20-point touchscreen for collaborative and sharing capabilities. The IFP6550 comes preinstalled with myViewBoard annotation and ViewBoard Cast streaming software. myViewBoard allows users to write, highlight, edit, and transform documents and images on the screen in real time. The ViewBoard Cast software lets content be shared from any mobile device to the display. Powered by a built-in ARM quad-core processor with 32GB of storage, it provides annotation/multimedia playback without the need for a PC, and multiple devices can be connected through the various port options.

[viewsonic.com](http://viewsonic.com)



## Sharp Windows Collaboration Display

The Windows collaboration display from Sharp is a next-generation 4K Ultra HD 70-inch Class (69.5-inch diagonal) interactive display that enables better space utilization and more productive meeting room collaboration. It comes equipped with a built-in microphone array and 4K camera for videoconferencing for the highest-quality audio and video, and an IoT sensor hub for gathering room-based data. It is also Skype for Business certified and ready to extract maximum value from Microsoft 365, Microsoft Teams, and Microsoft Azure Digital Twins. Designed for the end user, simply walk into a room, plug in your device, and start working together immediately.

[sharpdisplaysolutions.com](http://sharpdisplaysolutions.com)

