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E-guide to Video Display Technology

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The Deal With Displays

The sheer number of options requires a carefully thought out purchasing strategy

By Carolyn Heinze

MOST OF US LIKE to have a lot of options—or at least we think we do. But the more we have, the more effort we need to invest into making the right choice. And herein lies the challenge when it comes time to purchase video displays.

Not only does this product category offer a vast selection, rapid technological advancements combined with increasingly com-

petitive pricing are making high performance equipment accessible to a widening range of churches and budgets. Such is the case with LED walls, notes Jason McKelvey, LEED AP and consultant at Idibri, a technology, acoustical, and theatre design firm based in Addison, Texas. “Last year, a majority of our projects were designed using LED displays, with the number

Laser projectors, which require little maintenance, are often a great solution when the projector **must be housed in a spot that's hard to get to.**

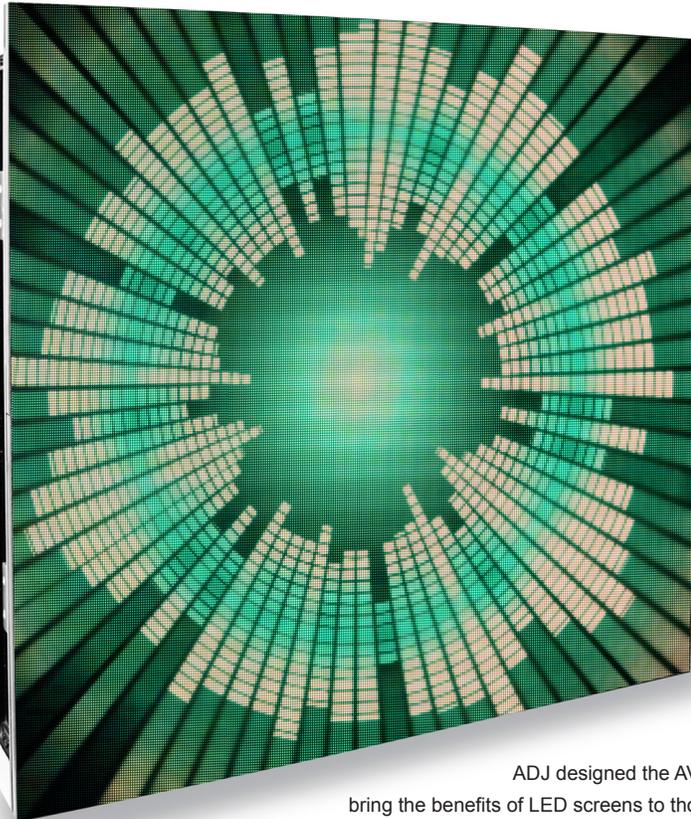
of projection systems declining,” he relays. And while his statement says a lot about large size of the venues Idibri tends to design, he notes that he started to observe this trend in his work with churches about three years ago. “I think part of that is because of the price drop—there has been a lot of competition coming out of China, and that competition has driven down the prices, and some of the early adopters have gone ahead and proven that it works.”

While LED displays are still more expensive than projection, McKelvey notes that this technology delivers a great contrast ratio in ambient light environments—a feature that is well suited to larger and more technically sophisticated church applications. LED displays

also offer a more attractive total cost of ownership in many applications: “If you’re looking at projection that [involves] very large projectors with very high-priced bulb changes, then over the course of the lifetime of the projector, what are you paying for in bulbs vs. an LED wall? When you look at the total cost of ownership over six, seven, eight years, you start to see that gap in price close.” But while one of the main advantages of LED displays is their energy efficiency, in order to reap that benefit there must be a way to truly turn them off when not in use, which, alarmingly is not a function that’s automatically designed into the system. The most efficient way of doing this, McKelvey counsels, is to put the LED wall power on motorized breakers that can be triggered by a control system.

Weighing the options

While LED walls may be all the rage, projection is often the better choice in small to medium applications, in retrofits and where budgets constrain the design. “If you’ve got [an existing] facility where it may not be feasible to put in LED, then projection would still be a viable solution,” McKelvey says. Environmental projection, as the term suggests, also requires projectors. “And if you don’t need a lot of brightness and you’re up against a budget, then often-



ADJ designed the AV6 LED panel as a break-through product intended to bring the benefits of LED screens to those with “real world budgets.” The AV6 has a .25-inch (6.35 mm) pitch with three-in-one LED sources producing total brightness of 1,200 nits.



While LED walls may be all the rage, **projection is often the better choice** in small to medium applications, in retrofits and where budgets constrain the design.

times projection would win out as well.” Laser projectors, which don’t require bulbs (and therefore, require little maintenance), are often a great solution when the projector must be housed in a spot that’s hard to get to.

Arguably one of the most difficult display-related choices to make these days is figuring out the best resolution. A lot of churches continue to operate standard definition video with good results, although new SD components are fewer and farther between. High definition remains an option, but if you’re doing a system overhaul, or starting out fresh in a new facility, is HD the wisest choice with 4K on the scene?

“Many churches are still making the move from 720p to 1080p, largely due to the continuing drop in cost of HD camera equipment and more robust data capabilities,” says Michael Bridwell, vice president of marketing and home entertainment at Digital Projection Inc., headquartered in Kennesaw, Ga. “Does a worship venue need 4K at the moment? For general content such as creative video content or imagery intended to complement the onstage presenter, my opinion is no.” He does make exceptions, however, if services feature content that includes text or fine detail that needs to reach all of the seats in mid-sized and large



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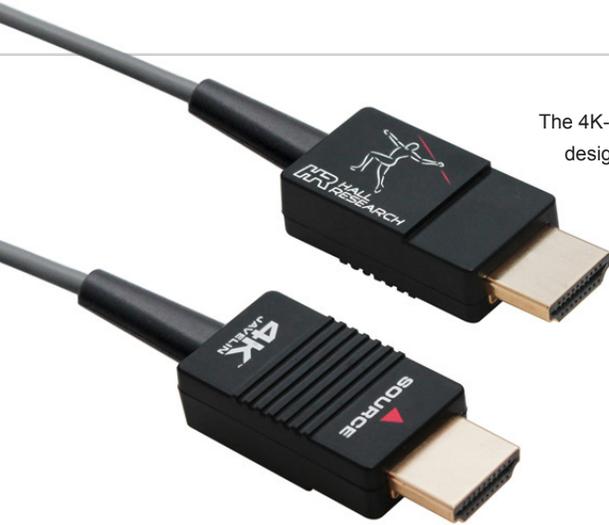
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worship spaces. “In these situations, the gain in image clarity will be immediately recognizable. At the end of the day, a facility has to weigh the benefits against the budget, as a jump to 4K oftentimes necessitates a substantial upgrade in data infrastructure and equipment.”

“You have to factor in that every piece of the signal chain has to support that resolution, or you’re ultimately going to have to bring the

system down to the lowest compatible resolution in the signal chain,” says Christian Delfino, vice president of sales and marketing for pro AV at Roland Systems Group in Los Angeles. If your scaler won’t bring content up to 4K, for example, then there’s not much point in having a 4K screen. “A lot of people think they can get a 4K screen and then, magically, everything is going to look better. That’s not necessarily true, because somewhere along the way, it’s just 1080p or 720p.”

For churches that are distributing video to other locations—either within the same facility, or via broadcast—Delfino runs through a number of considerations to make when it comes to switchers. “Are you going to set



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Photo: Miami Vineyard Community Church using ADJ Lighting



Church of the Highlands in Birmingham, Ala., hosts services at 11 campuses across the state, offers streamed and on-demand services for members across the country, and distributes content to more than a dozen correctional facilities. The church recently completed a major video upgrade that includes Sony HDC-2400 HD camera systems, multiple MCS-8M compact production switchers (see above) and a variety of Sony laser projectors, including 4,000 VPL-FHZ55 and the 7,000 lumen VPL-FHZ700L.

up separate cameras? Are you going to split your sources to go to two different switchers? Or are you going to find a switcher than can support both your screens in your sanctuary and also what you want to broadcast or stream?” he illustrates. There’s also the question of manpower: how many operators will you need—and how many operators can operate the same switcher at the same time? Delfino points out that Roland’s V1200-HD is capable of supporting two independent control surfaces, which means that one operator can be switching for the sanctuary screens, while another is overseeing the switching for the video that is going out to broadcast or the web, for example.

Because churches rely heavily on operators with varying degrees of technical know-how, Craig Harper, national manager at Sony Faith in Dallas, cites user friendliness as another factor to consider when selecting video switching technology. “Ministries often rely on volunteers to perform a range of functions

throughout the organization, including the operation and maintenance of technology, and Sony’s switchers are extremely user-intuitive,” he says. He lists the manufacturer’s AWS-750 Anycast Touch Live Content Producer, the MCS8M Compact AV Mixing Switcher, and the MVS-3000 multi-format switcher as well-suited for houses of worship, since they were designed with input from the church market.

Blackmagic Design, a video products manufacturer in Fremont, Calif., makes switchers that can be run via software exclusively, or with a hard panel. “A lot of people use the software, which is good because it makes it easy,” explains Bob Caniglia, senior regional manager for Eastern North America. “Younger kids like software and don’t like buttons—they’re used to it with iPhones and iPads, so software doesn’t intimidate them.”

While most LED display manufacturers produce two-by-two-foot panels, odd sizes are available for those seeking creative license.



However, McKelvey notes that because they're not standard, configuring them to achieve a 16:9 aspect ratio can be tricky. "If you can't get a true 16:9 ratio, it's better to have a board that is 16 by something greater than nine—so 16:9.5 or 16:10 is better than a lower ratio like 16:8," he explains. "This is because if you're doing video shots of IMAG and you've produced videos to play back on these things, you don't want to crop top and bottom because then you're affecting headroom and you're affecting lower third graphics. It's better to crop the sides of the image that's being displayed, because oftentimes you've got a safety zone to work with on the sides that's a little bit more forgivable to cut off."

Along with advancements in video gear is the evolution of video content in churches—no longer is it just a matter of playing back live or recorded material. These days, churches are incorporating swirling back-

grounds behind lyrics, digital scenery, as well as stock, and increasingly, original content, often at the request of the lighting designer. In this converged environment, content lives on media servers, many of which can be controlled by the lighting console and not just the video switcher. But when should the lighting console operator have control over triggering cues? For McKelvey, it depends on the people running the systems. "There are lighting designers who are really quick and picks things up and [who] will go in and start immediately writing cues to send to the video processor/server that's feeding your displays, and can then trigger that," he says. "In other situations, you'll have a video designer who is quick and can throw in the cues to send off to lighting." It also depends on the type of show you're doing, "because you can go in both directions via a LAN connection or a DMX connection between the lighting world



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and the video world, and really have either one of them trigger the other.”

Avoiding common mistakes

McKelvey notes that one of the mistakes many organizations—not just churches—make is related to expectations surrounding contrast ratio. He warns churches that contrast ratio isn’t just a specification written in the product documentation. “Say you buy a super-bright projector. On paper it looks super-bright, and then after putting in light brown carpet on the stage, and white walls all the way around, then it doesn’t seem as bright in person because you’ve got such a bright environment that the projector just can’t overcome it.” The

perceived contrast ratio, he says, is what matters most. “And that has everything to do with what is around the screen and what is going to be hitting the screen directly.”

This makes a good argument for investing in professional advice before making a purchase, something Caniglia counsels churches to do. “I think oftentimes many [organizations] are afraid to engage with a systems integrator, and while it might be a short-term savings, it could be a long-term problem because they don’t get everything they need, or they don’t do it efficiently,” he says. At a minimum, he advises churches to seek some professional consultation. “When you’re building [a system] for one church that’s one thing, but a lot of these integrators have done tens or hundreds of these facilities, so they have valuable ideas, and I think it’s worth it to engage with them.”

CAROLYN HEINZE is a freelance writer/editor.



Designed in partnership with High End Systems, the Elation Emotion is a hybrid moving light/video projector. Elation describes it as a plug-and-play DMX moving light with an on-board media server that can display a near infinite number of digital gobo patterns, logos, graphics and video.

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