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Video Projector Repair or Replace?

So, your video projector has been around for a while now

You've properly maintained it, cleaning the filters regularly, changing the lamps before they degrade to the point of exploding or, perhaps not?

Either way, at some point it's worth considering replacing rather than maintaining that aging projector. How can you know when it's time to consider replacement of that important piece of technology?

There are two reasons why you might want to replace your projector.

The first is when the projector has, or is about to die.

"There generally isn't an obvious sign that your projector is about to fail," says John Linden, managing owner of Provision Audio Video Solutions in Wake Forest, North Carolina. "If it's an LCD projector, you may start to get discoloring around the corners or edges, caused by the film starting to detach from the LCD panel. On a DLP projector they might start to make a little bit of a noise before they go, but usually they just die."

The second reason is more about functionality.

"The best question to ask is, is the device still letting you communicate what, and in the way, that you want to?" asks Linden. "Have people's expectations changed? Has the environment in which your projector is used, changed?"

That being said, the decision process for either situation is similar. In the case that your projector has died, the only difference is that your decision has become immediate, and your price point of whether it makes sense to replace has just become clearer. "If we do have an older projector that has failed," comments Branden Pendley, president at Pendley Productions, "it's often better to just upgrade, instead of repair, to get more brightness and better features. It can also be hard to find parts for older units, so you need to decide how much time you want to be down, while you're waiting for replacement parts to come in." Even if your projector isn't failing, there can come a time where replacement is worth considering.

"We always look at the function of the device," comments Linden. "Communication is the goal have people's expectations changed?

In the case of a projector, do you need to provide video that's easier to read, for example? Is there new functionality needed? Have your needs changed? People need to take stock of what they are doing with projection every few years. When you originally installed your projector, perhaps you were just doing high-contrast PowerPoint slides.

Have you now added video or graphical backgrounds to what you are doing, and the projector doesn't do it justice?" In the case of projectors in classrooms where teachers may want to connect their own laptop to the projector, you may start running into issues of connectivity. "With new projectors, there's new connectivity options," says Pendley. "Long gone are the days of VGA and component connectors, both on projectors and laptops. It's SDI, HDbaseT. HDMI, and DisplayPort that are the interface types now in use.

Some newer projectors don't even have VGA or component video connections anymore." Video formats have changed as well over the last ten years. "We're seeing the end of the 4x3 video format," says Linden. "People want to do 16x9 or 16:10 now." While connectivity and video formats matter, perhaps the biggest change in video projectors is the advent of laser- phosphor lamp-sources replacing traditional projector lamps. "Laser-phosphor lamps have a typical lifespan of 10,000-20,000 hours before they are down to half-brightness.

If you're a church that uses the projector for three hours a week, the extra cost of going to a laser projector might not be worth it. However, if you're using your projector for more like 20 hours a week the laser projector starts to pay for itself really fast." And if getting access to your projector is difficult and requires renting scaffolding or lifts, it may be well worthwhile to invest in a laser-phosphor projector to eliminate that high-effort work load.

Linden also notes that laser projectors generate less heat, and thus don't need to move as much air through them. Therefore, these projectors are quieter than traditional lamp-based projectors, which can be a big factor if your projector is positioned out over the heads of your congregation. Pendley adds, "Lamps don't fail when they are turned off during the week.

They fail when they are on, which is during the service. A laser-phosphor projector can greatly reduce the potential of mid-service failures." Another thing that one should consider when replacing a projection system is whether it's worth looking at LED video walls.

However, these only make economic sense in spaces with large amounts of uncontrolled ambient light. It's been stated that the cost of a projector bright enough to overcome the ambient light plus the first year or two of lamp changes equals the cost of a video wall. Both Linden and Pendley believe that laser-phosphor technology has swung that pendulum back in favor of projectors some, as the lamp changes are now eliminated when you compare costs.

While perhaps not as fast-changing as lighting and audio technologies, video projector technology has improved over time. As Linden commented, it's always worth reviewing your needs and the ability of your system to meet

Terminology

SDI: Serial Digital Interface. This is a professional-quality way to transmit video signals up to about 300 meters over co-ax cable.

HDbaseT: This is a way to transmit HD video signals over CAT5E/CAT6 Ethernet cable.

HDMI: This is the consumer level of cabling for connecting HD components together, such as a Blu-ray player to a television.

DisplayPort: A cabling mechanism developed by Dell and standardized by VESA. It's primarily been adopted by computer manufactures.

Laser-Phosphor Lamps: This is a fairly new lamp technology in which blue laser diodes are used to excite phosphor. The combination of the blue light from the laser and the light from the phosphor is passed through the imaging chip. This is a low-heat and low-maintenance method of creating light.

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Question: What challenges and/or needs have you experienced lately in the house of worship market in terms of projection?

Pitterle: House of worship often presents unique challenges from an installation perspective. Due to high ceilings, large unconventional rooms and an abundance of obstructions it can be difficult to find a place for the projector. Of course, projectors that support optional long and short throw lenses along with lens shift and HDBaseT capability will provide installers with ample options for installations.

Question: Which projection technology do you find especially suitable for the house of worship environment and why?

Pitterle: More than LCD versus DLP or even lamp versus laser, high brightness is a primary consideration when choosing appropriate projection technology for a house of worship environment. Often times the high ambient light present in most churches requires an extremely bright projector in order to produce a vibrant image on the screen. For the greatest impact choosing a bright enough projector will prove most critical.

Ryan Pitterle is a Product Manager for NEC Display Solutions of America, supporting the company's line of standard, ultra-short throw and entry installation projectors for academic and corporate applications. Ryan has over 15 years of projector and classroom technology experience