The Trade-Off

Understanding When to Fix and When to Replace Your AV System

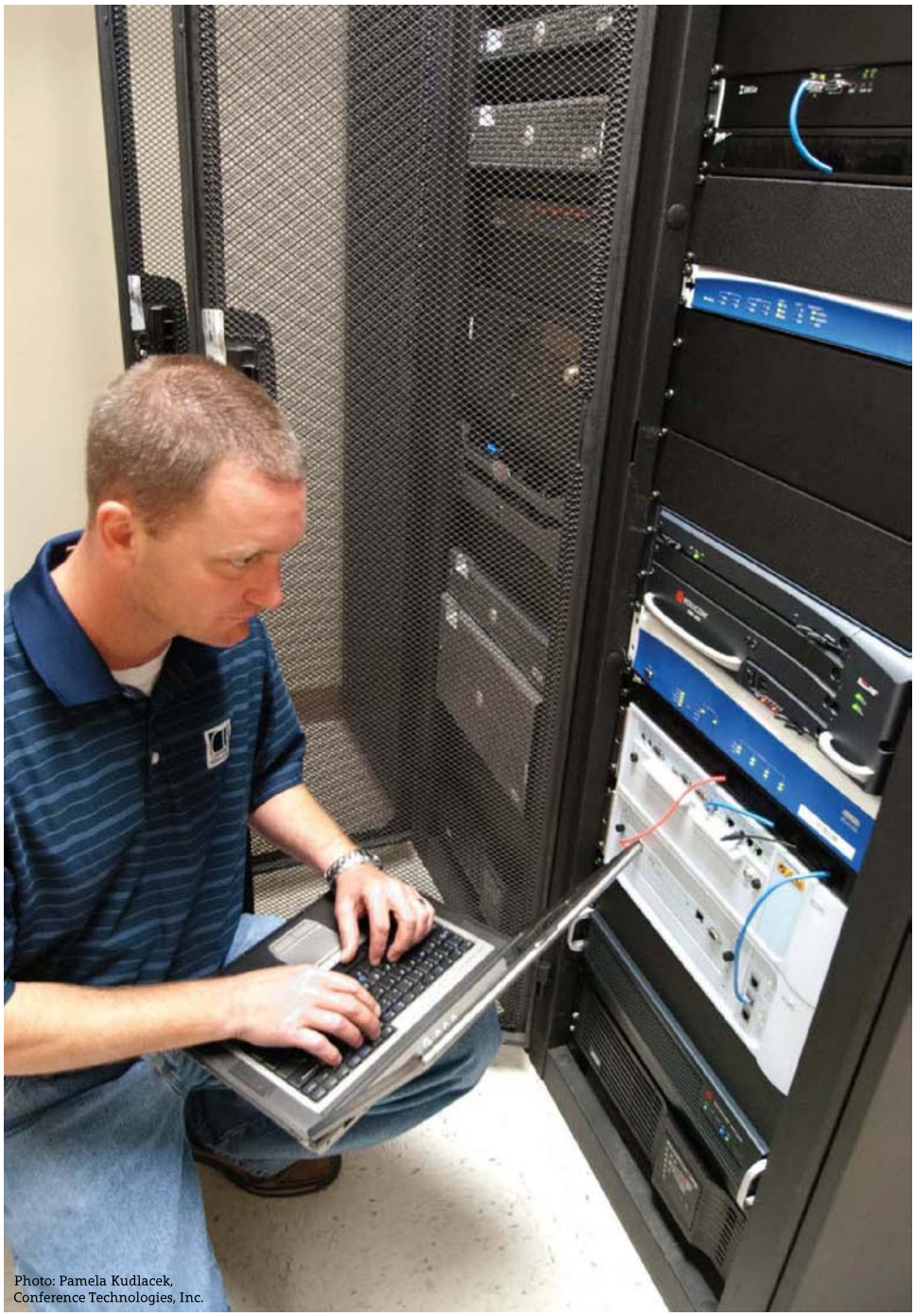

Photo: Pamela Kudlacek, Conference Technologies, Inc.

////// by John Laughlin

A question we're constantly asked at Conference Technologies is whether an older AV system is worth upgrading. To start on an answer, think of your AV system as a computer. Would you add memory, disk storage or processing power to a one-year old PC? What about a 10-year old PC? It's an apt analogy because AV systems are driven by computer specifications. Five years ago 1280 x 1024 was high resolution. But today you want to handle 1900 x 1200 graphics, 1080p video, HD sound, and perhaps the latest Webcasting and videoconferencing communications, also in 720p or 1080p.

Since computer manufacturers are moving to digital outputs, any upgraded system will need to accept HDMI, DVI and DisplayPort, as well as older VGA, component, and probably S-video and composite connectors as well.

One question is whether your displays will handle these resolutions. If they can't, you'll need to replace them. Depending on your setup, however, that should not be terribly expensive. You may need to replace projection screens as well, since older 4:3 screens are often not large enough to provide readable wide-screen images at the viewing distances needed for a given room.

A bigger question is what to do about source equipment, switchers, cabling and control. If an upgrade is the order of the day, you have several options and concerns.

KEEPING OR REPLACING INDIVIDUAL COMPONENTS

When we evaluate an older piece of equipment for an upgraded system, we keep several considerations in mind.

First, will it do the job? While a DVD player is never going to play a Blu-ray disc, older amplifiers, DSPs, switchers and control panels often work quite well and provide all the quality and functionality you would want.

If that's the case, the next question is how long the component will be supported by its manufacturer.

There's no standard, but many manufacturers stop stocking parts for a given model when the warranty runs out on the last one built. Since professional AV components most often carry a three to seven year warranty, you definitely want to check out the support policy for any piece of gear that has been discontinued for three to seven years or longer.

The third question is how crucial the component may be to the overall functioning of your

Projectors Sales Will Increase 35 Percent

Pacific Media Associates (PMA), a market information provider on front projection trends, estimates that the 8.5 million units sold during 2010 will increase to more than 39 million units during 2015. The forecast includes all projectors, from tiny pico projectors used as companion devices for mobile gadgets to the brightest projectors found in high-end corporate settings, home theaters, and digital cinemas.

"The strong continued growth of the projector business is due to the large variety of ways projection technology can be used to produce pictures that are many times larger than the projector itself, whether they are T-shirt sized images produced from a tiny projection module embedded in a mobile phone or giant cinema-screen pictures produced from a box one-quarter the size of a Smart Car," said Dr. William Coggshall, President of Pacific Media Associates. PMA divides the industry into three brightness ranges, each associated with its own set of buyer types and applications: New Era (under 500 lumens), Mainstream (500 to 4999 lumens), and High-End (5000 or more lumens). For more information, visit pacificmediaassociates.com.

Projector Manufacturers:

Boxlight (www.boxlight.com)
Canon (www.usa.canon.com)
Casio (www.casio.com)
Christie (www.christiedigital.com)
Dell (www.dell.com)
Digital Projection Inc (www.digitalprojection.com)
Dukane (www.dukane.com)
Epson (www.epson.com)
Fujitsu (www.fujitsu.com/us)
Hitachi (www.hitachi.us)
InFocus (www.infocus.com)
Mitsubishi (www.mitsubishi-presentations.com)
NEC (www.nec.com)
Optoma (www.optoma.com)
Panasonic (www.panasonic.com)
Samsung (samsung.com)
Sanyo (us.sanyo.com)
Sharp (www.sharpusa.com)
Sony (sony.com)
Toshiba (www.toshiba.com)
Viewsonic (www.viewsonic.com)

system, and how crucial that system is to your organization.

If you have a 10-year old loudspeaker that was discontinued eight years ago, you may decide to reuse it, knowing that the room will function should it fail. But we have seen cases where a $50,000 system was brought to its knees because a $3,000 switcher could not be repaired. The solution is a new switch and days or possibly weeks of downtime waiting for it to be ordered and installed and then the control system reprogrammed for its use.

Generally speaking, we worry most about the power supplies on any piece of electronic equipment and the backlights on LCD panels, whether in a large-screen display or a control device. A good AV integrator or service organization can help you evaluate your gear.

SWITCHERS AND CABLES

When you get to the core of your AV system–the input modules, the switchers and the cabling–there's a little more to think about.

Some older rooms are wired with composite or S-video cable, and if that's the case, you might as well start over. You're not going to carry a high definition signal on this type of wire.

If you have a five-wire system (component cabling and switching), VGA, or twisted pair (Cat5 or higher), you're in better shape. As long as you do not have to show media carrying HDCP copy protection, your AV contractor should be able to provide good high-definition video via an analog signal path and satisfy EDID (extended display identification data) requirements using an EDID emulator.

Of course, newer computers and many video components, including most video conferencing codecs, provide digital outputs only. If you stay with an analog system, you'll need to convert the digital signal to analog and, at some point in the not-distant future, convert it back again to take that analog signal into an all-digital display. You should expect some loss of image quality in this situation, although most people will find the results acceptable.

It's also possible to send a purely digital signal across a component video backbone or a backbone using single Cat5 cables. It's true that neither of these types of wiring have enough bandwidth to support uncompressed 1080p video, but some manufacturers are getting around that issue using low levels of compression, encoded and decoded in real time. Again, there is a trade-off between upgrade cost and image quality, and there are limitations in transmission distance, but using your current cable and switching backbone is a good solution for many older systems. Another question is how long you expect to use your upgraded system. Deep Color (24 bit) is already on the horizon, and it requires more bandwidth than 1080p. It's likely, too, that HDCP copy protection will become more and more of an issue in the next few years. You will definitely need to be HDCP compliant if you wish to show Blu-ray movies and entertainment, and there may be additional applications on the horizon. Still, we think analog systems will be viable for most organizations for another five years, possibly more.

Flexibility is definitely a plus for whatever components you upgrade

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Terry Friesenborg, CTS, Senior Vice President, International Development Infocomm International, discusses bringing the products and services from the AV industry to the larger global marketplace. Visit avtechnologyonline.com/may11