



4 Display and Projection Solutions that Support the Evolving Workplace

The traditional way of working—where people gather at the office from 8 to 5 and work in a closed-space office or cubicle—is disappearing. Instead, the workplace is evolving to serve as a central place for collaboration. Employees, especially digital natives, expect more flexibility and collaboration in their workday. Companies are consolidating offices to reduce real estate costs, creating more opportunities for collaboration across departments. Smart workplace transformation is fueling investment in open spaces and huddle rooms, both of which give employees a space for small group meetings. When two or three people need to get together to quickly review a design or brainstorm product ideas, these spaces offer the right type of space for informal, ad hoc meetings.

Huddle rooms and open spaces should offer flexible seating arrangements that include sofas and lounge chairs, soft lighting, and sound-masking systems, which minimize distractions for surrounding workers and preserve privacy. But the key ingredient to successful workspaces is quick access to technology that facilitates productive collaboration. Visualizing and sharing images with content is central for your employees to effectively collaborate. The most effective spaces provide easy connections to a variety of devices, offer wired or wireless network access, enable content sharing, provide annotation and note-taking capabilities, and support virtual access for off-site participants.

This brief describes four display and projection solutions—LCDs, interactive, laser projectors, and projection screens—that enable companies to adapt to the new, collaborative work preferences of their employees.

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LCD Displays Keep Everyone on the Same Page

Whether your team is gathering to work on a go-to-market strategy or to review quarterly sales numbers, a shared view of the information makes these conversations easier. LCDs increase productivity and reduce travel costs by making it possible to add real-time collaborative technologies such as remote content sharing and video collaboration for virtual meetings. It's important to select a digital display with a high-quality picture, the correct resolution, and inputs for the peripheral devices you will use. You may need more than one display to allow for multiple-window

It's important to select an LCD with a high-quality picture, the correct resolution, and inputs for the peripheral devices you will use. You may need more than one display to allow for multiple-window content sharing. When selecting a display for collaboration spaces, there are a number of factors to consider, including intended applications and budget.

Selecting an LCD

Features	Why It Matters	Commercial vs. Consumer
Display size	Display size is determined by the distance from viewers. The recommended viewer distance is anywhere from 1-1/2 to 2-1/2 times the screen diagonal.	Both commercial and consumer displays are sold in a wide range of sizes and should be able to accommodate any size room.
Resolution	You may need to share content from a variety of devices (laptops, tablets, smartphones) to the display. For this reason, it is important that the display recognizes multiple resolutions and has portrait as well as landscape orientation capabilities.	Commercial displays recognize PC resolutions, including wide formats and different refresh rates. They also offer landscape and portrait formatting. Consumer displays will have a limited ability to recognize PC resolutions and may not have portrait formatting capabilities.
4K Resolution	Often referred to as Ultra High Definition (UHD) TV, 4K offers 4 times the pixels of HD TV and offers a sharper picture and more engaging content. Screen size and viewing distance will be a factor in whether the increased image quality is discernibly noticeable from HD TV (see chart). 4K content is available, but you can expect to see it become more pervasive in two to three years. Bandwidth is another consideration. Streaming 4K content requires a 25Mbps or faster downstream.	Available in both commercial- and consumer-grade displays. Make sure the display has the latest HDMI standard, currently HDMI 2.1. The first wave of 4K TVs used the previous HDMI 1.4 standard. HDMI 2.1 supports higher resolutions and faster refresh rates and is backward compatible with earlier versions of HDMI.
Inputs	It is important to purchase a display with the inputs you need for content sharing, live streaming, or video conferencing.	Commercial displays come with a full array of connectivity and external controls such as HDMI, DVI, VGA, LAN and mobile device content distribution, and USB playback. Consumer displays do not usually offer as many external display connections.
Total cost of ownership	Initial purchase price is not the only consideration. Power use, warranty terms, and lifespan can also contribute to total cost of ownership.	Commercial displays typically have multiyear on-site repair warranties and the screens are designed to minimize power use and running costs. They also typically have a longer lifespan. Consumer displays usually have 90-day warranties with shipping required for repairs. Power use may also be high in order to support additional domestic features and applications not needed in commercial environments.

Interactive Displays Turn Meetings into Hands-On Project Work

During an impromptu meeting about the new website being developed, an interactive display fosters a more productive collaboration experience. With it, the team can pull up the website, annotate changes they'd like to see, move photos and menu items around, and then save the file to send back to the design team for further refinements.

Unlike traditional flip charts and dry-erase whiteboards, interactive displays allow content sharing and annotation from multiple types of devices, the ability to save notes and ideas, and the option to quickly “erase” and prepare for the next meeting. Interactive displays with built-in collaboration tools and software often include a built-in PC to support collaboration across all types of meeting rooms and are BYOD friendly.

Selecting an Interactive Display

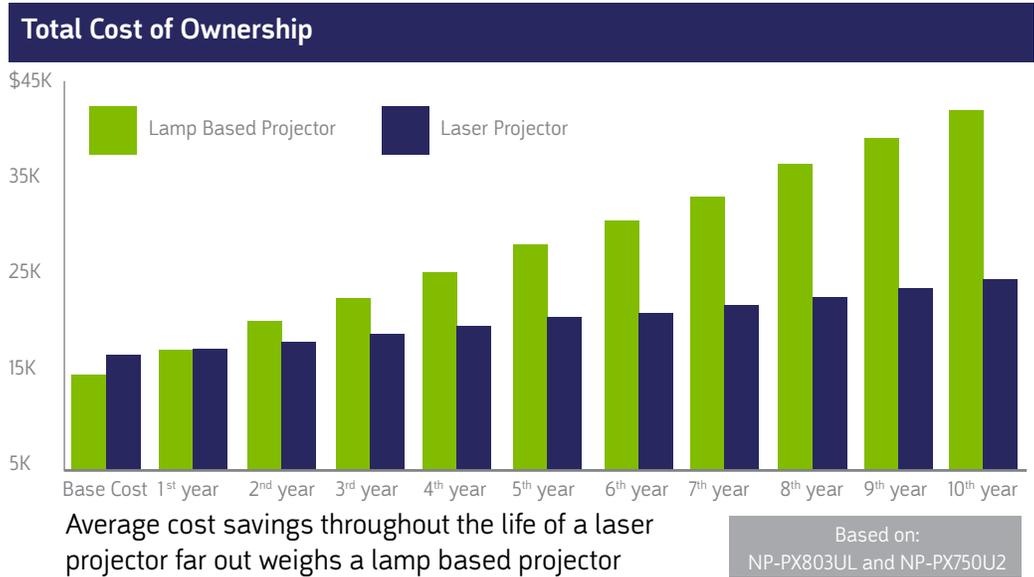
Features	Why It Matters
Multi-display	Multi-display capabilities allow you to view the same collaboration workspace with real-time annotation across all views on all connected displays. You can work on a zoomed-in detailed view while keeping the zoomed-out contextual view on a separate connected display.
Multi-touch	Allows two or more people to interact with content simultaneously and can increase collaboration effectiveness and efficiency.
Multi-gesture	Some interactive whiteboards only accept a pen or finger touch while others support a multi-gesture format. Those with multi-gesture capabilities can improve efficiency by allowing you to work more naturally—write with a pen, move objects around with your finger, and erase with your hand.
Real-time sharing	Allows remote participants to view and/or annotate content in real time. Improves the collaboration experience and increases productivity.
Integrated inking	Allows users to convert annotations to text or to write over a document and save annotations to the document.
Space	It's important to select an interactive display that fits the size of the room. There are several interactive displays on the market that can accommodate smaller spaces.
Cost	The more capabilities built into an interactive whiteboard, typically the higher the cost. Your needs and budget will dictate what type of interactive product makes the most sense in your collaborative space.

Laser Projectors Show Data and Designs with Rich, Accurate Detail

As part of an effort to spur innovation, four design engineers created a mock-up of a new product design and are meeting to decide which features make sense to incorporate into a final design. A laser projection system makes it easy for the engineers to view their designs with color-accurate, pixel-free viewing that enables everyone in the room to see the critical content, making this meeting effective and highly collaborative.

Whether your laser projector is in an executive boardroom or visualization and simulation rooms, you need to be able to view critical data clearly and realistically. Laser projectors deliver accurate color replication and constant brightness, which is critical to creating a fully immersive visualization or simulation experience. Laser projectors

prevent user eye fatigue and enhance immersive experiences with high contrast, high resolution, and intelligent light source power control that works in both daytime and nighttime simulations.



According to NEC, the average cost savings of a laser projector far exceeds a traditional lamp-based projector. Laser projection solutions offer a lower cost of ownership and are virtually maintenance free.

Selecting a Laser Projector

Features	Why It Matters
Devices and platforms supported	It is important to ensure that the system you select supports all the devices and platforms your users use for content sharing.
Multi-display	Multi-display capabilities allow you to view the same collaboration workspace with real-time annotation across all views on all connected displays. Edge blending of multiple projectors allow for seamless images for simulation applications.
Multi-user	Allows two or more people to interact with content simultaneously and can increase collaboration effectiveness and efficiency.

Projection Screens Keep Attention on Content—Not the Hardware

There would be nothing worse than investing money in a projection solution only to have it impacted by a poor-quality projection screen. The same attention to detail you gave to choosing your laser projector should be given to selecting a projection screen that provides the best contrast, vivid color, and brightness for your image.

Projection screens do not have to be obtrusive or an eyesore. They can be mounted on the wall or the ceiling, and can even be recessed into the ceiling with a trim flange. You can create a sleek, attractive display surface with an ultra-thin bezel frame and the

latest projection surface technology to maximize the content being displayed from your projector. You can even recreate the look of a television, but with a bigger image, but choosing screens with optical lens systems that eliminate ambient glare.

Projection screens can also be designed to include multiple capabilities such as dry erase screens that can double as whiteboards, or projection screens with integrated HD video cameras that can convert to video conferencing solutions. Using USB connectivity, you can easily launch your peer-to-peer video conferencing call.

In your community spaces such as the cafeteria, you may not want a projection screen to be permanently installed. However, you may use this space as overflow and need a temporary projection screen. Da-Lite offers portable solutions, including screens, easels, carts, and stands. These solutions plus a portable projector will make any space presentation-ready.

Selecting a Projection Screen

Features	Why It Matters
Flexible Installation Options	The ability to provide a screen surface on your wall or from your ceiling allows you to work with the shape of your room and provide a sensitive alteration to a historic property. The option of having a portable projection display system allows you to show content on your campus where you need to.
Difference in Gain	Projection screens come in many different gain options, allowing you to choose the surface that will work best in your environment. Your ability to control the ambient light in the room will affect the level of gain needed for optimal content viewing.
Multiple Functions	Integrating your video conferencing camera in the bezel of your projection screen provides you with the collaborative functionality you need, while eliminating extra equipment. Using an IDEA Screen to provide whiteboarding annotation and a projection surface eliminates extra equipment.
Ultra-thin Bezels	Ultra-thin bezels provide a slim profile while showing your content and works with ADA compliance requirements.

Next Steps

Every collaboration space will have its own unique characteristics, and every organization will have slightly different objectives they want to achieve. The information in this brief should provide useful assistance throughout the decision-making process to allow your organization to make the appropriate decisions, based on budget and priorities, to ensure you create open collaboration spaces that are ideal for your organization.

See how [Dave and Buster’s](#) improved their experience in the Midway Bar with Da-Lite projection screens.



About AVI-SPL

AVI-SPL is the world's leading AV and video collaboration partner. AVI-SPL designs, builds, integrates, and supports the systems and environments that enable communication and collaboration. With highly trained and certified systems engineers throughout 45 offices across North America, Europe, and the Middle East, and an international network of solution providers in 30 countries, we've built the infrastructure and partnerships to help any business realize and meet its communication goals. For more information, visit www.avispl.com/about-us.



Da-Lite

For over 100 years, Da-Lite has been designing, manufacturing, and marketing the most comprehensive line of projection screens in the world. Da-Lite is part of the portfolio of branded audio-visual products for Milestone. For additional information about Da-lite products, visit <http://avispl.com/da-lite/>.