Choosing the right digital signage display for your deployment

Making sure you pick the correct digital signage display is crucial to the success of any digital signage deployment. It is the face, so to speak, of the deployment.

Content may be king in digital signage (though some would argue that context is), but either way, the king would have no clothes without the digital signage display that best fits the deployment.
So, Digital Signage Today asked some of the industry’s top display manufacturers to provide their four key pieces of advice for choosing the right display. Here are their answers, lightly edited for space considerations:

Jennifer Davis, vice president of marketing for Planar Systems Inc.

1. **Does your application require commercial-grade displays?**

   The first consideration that buyers often face is whether or not to deploy a commercial-grade product, or to use a consumer-grade television for their display needs. This decision usually circles back to the needs of the business, the duty cycle of the display and the uptime expectations. If you operate an "all-day" or 24/7 environment, you expect products to have years of useful life, be rugged enough to deal with daily use, and be easy to service/maintain, then a commercial-grade product is the choice for you. In general, we advise businesses not to settle for TVs, but instead look for professional displays that can meet the demands of their customers and reflect positively on their brand.

2. **What is the physical scale of the installation?**

   Once you reach a decision to pursue a commercial-grade solution, there is a world of possibility that opens up to you regarding the physical size of the installation. Do you want to create a focal point in your environment where an entire wall is activated with color and movement? Are you looking to create something more artistic in the space, by placing a ribbon of video around your store or a sculptural array of video behind the bar? There are a variety of visualization tools that make envisioning large scale video wall installations easier.

3. **What is the typical viewing distance from the installation?**

   Very closely related to the scale of the video screen or video wall, is the scale of the space in which it will be installed and the typical viewing distance from which visitors will experience the display. Viewing distance has a direct relationship on the perceived quality of the display (and video or informational content displayed), as at some distance the individual pixels of the display are no longer visible. For a high resolution desktop monitor or tablet display, this distance can be a few feet. For a large video wall, this could be dozens of feet away. If it is a touch installation, you would expect users to approach the wall directly and be no further than an arm’s length away. Understanding how close users will be to the display, allows integrators and their clients to select the right display resolution and size to achieve the right pixel density.

4. **What is the experience you want visitors to have?**

   Probably the most important question and one that should get asked throughout the process is this: What are we hoping to accomplish with this installation? Understanding the "why" question allows you to better answer questions regarding project budget, scope, and complexity. Similarly, focusing on the commercial requirements, the physical size of the installation and how the user behaves in the space, are all key factors in the experience that customers have with video displays.
Dan Smith, director of digital signage, LG Electronics USA

1. The viewing experience is perhaps the most important consideration when selecting a digital signage display. The best panels are those that offer excellent color accuracy, ensuring that products, corporate logos and marketing materials are faithfully reproduced. Since most people are moving while viewing content and rarely stationary in front of the display, the off-axis viewing angle is another significant factor.

2. Environmental factors and ambient light at the deployment site need to be taken into account. Low ambient light situations, as well as settings where there is either indirect or direct sunlight, all require different levels of panel brightness to ensure that viewers are seeing the best picture possible. From retail window displays to outdoor applications, a display with excellent brightness and the ability to adjust to various conditions will ensure that viewers can always gleam information with absolute clarity.

3. Physical form factor and durability should also be taken in to consideration. Total viewing size, bezel measurements and depth of the display all help decide which display is right for a given environment. The display should also be durable enough to withstand a high operating temperature over prolonged usage periods, as well as run at cooler temperatures to avoid overheating. For touch displays, you'll want a panel that ensures low to no image distortion when it's being used for interactive touch applications. Resistance to dust and air contaminants will help to extend the longevity of a display without incurring the cost and added weight of an enclosure.

4. Lastly, effective management capabilities are a vital consideration when choosing a digital signage display, and integral for reducing staff time and resources spent monitoring and maintaining displays. Displays using Simple Network Management Protocol standards allow systems integrators to remotely communicate with screens using standard network communication protocols for more efficient management and troubleshooting. Additionally, the ability to monitor the front of the display with a panel-facing pixel sensor and to continuously communicate with the screen, even when the backlight is powered down, are important for screen management. Robust connectivity options, such as Wi-Fi, hardwiring, and failover options for failed image inputs, also ensure that content is always running seamlessly.

Keith Yanke, senior director of product marketing at NEC Display Solutions

1. What resolution is needed? Will full-HD be enough, or is ultra-HD needed? FHD will still be the resolution of choice for many customers and applications, but new UHD models provide 4 times the resolution, opening up the door for more information and detail on a display. This will be very important for retail applications that want to make sure their brand is represented in the highest and best quality.
2. Where will the unit be placed? If you are placing the unit in-store away from ambient light you have many choices, but as you introduce more ambient light into an area you have to make sure the unit chosen will be bright enough to display the message effectively. We are also seeing more need to place units outside, which then requires you to determine whether or not an enclosure is needed, as well as what type of enclosure. Can I get away with a semi-outdoor (protects from dust and rain) or will you need a unit protected from direct sunlight as well? This last one will require a more robust enclosure solution that will not only protect it from the elements but will also ensure the temperature of the unit is stable in the hottest or coldest temperatures.

3. How will you connect to the display? Will the source be close by, possibly even in the unit with OPS capability, or will the source be remote requiring different connectivity options like HDBaseT or even wireless? There are three options for connecting a source to a display. First, the source is internal to the display. This is accomplished via an internal media player in the display or could be a PC/media player connected via the OPS slot. The second option is to have the source close by the display and connect via a standard connector (DVI, HDMI or DP). The third way is a source that is far away from the display or even remote. Signal transmission in these cases usually require a transmitter and receiver in-between the source and display allowing the signal to go from the source to the display via wired or wireless connection.

4. What will be your source? There are many different options out there for sources, so make sure it is right for the application and display. Maybe you want to show more video-centric content, or maybe you just want to display your brand’s logo on the screen; no matter what content strategy you choose, it is key to make sure your source can handle the needed content.

Glen Young, senior product marketing manager at the Philips Signage Solutions division at its North America business operation company, Envision Peripherals Inc.

1. Reliability – Always go with commercial-grade displays. Product lifespan is definitely the fundamental issue for any business owner. In addition, commercial-grade displays have more features that fit in to commercial environment, such as:

- Higher brightness - consumer TV displays have lower brightness than commercial displays;
- Longer operation time – some commercial areas require the digital signage to operate 24/7 or longer than 12 hours daily operation;
- Anti-glare glass - in most commercial areas, the lighting changes dynamically, especially when it’s in the sun’s direction;
- Ambient light sensors - most commercial displays have a built-in light sensor for environment adaption as well as auto power management;
- Anti-malicious attack security - commercial displays come with keyboard/remote control locking feature that can prevent anonymous malicious attacks;
• Better warranty - most commercial displays come with three-year warranty, instead of consumer TV’s one-year warranty;
• Portrait mode support - consumer TVs aren’t designed for displaying in portrait orientation; and
• Professional appearance - consumer TVs are designed with shining bezels and thicker chin at the bottom side.

2. **Sustainability** – Displays should come with a simple failover mechanism. There is no guarantee that the content player, video input signal connection, network connection, or power will never get lost. To ensure that a blank screen will never happen, a good and simple failover mechanism has to be built-in to the display.

3. **Flexibility** – Provide more playback options. The traditional way for digital signage play back is to have a PC-like media player attached with each display panel. But digital signage deployment is moving toward models of content distribution, such as cloud-based, to reduce costs. Getting a more flexible playback options display will give more configuration choices later on.

4. **Unit-Exchangeable service** – Some commercial display manufacturers offer an advance exchange warranty, which arranges to send new units to the user before getting the defective units back for repair. There is no lengthy back-and-forth shipping and repair waiting time. User can't afford losing commercial business opportunities by waiting for this lengthy logistic time.

(Cover image courtesy of Mike Kniec.)

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Christopher Hall / Christopher is the editor of DigitalSignageToday.com. A longtime freelance writer and reporter, he's bringing a fresh perspective and critical take on the industry.